ADAPTATION FUND

SINGLE COUNTRY INNOVATION PROJECT PROPOSAL

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	Enhancing Adaptation and Resilience through Nature-based Solutions (EARNSS) in Somalia
Country:	Somalia
Thematic Focal Area:	Nature-based Solutions and ecosystem-based adaptation.
Type of Implementing Entity:	Multilateral Implementing Entity
Implementing Entity:	United Nations Environment Programme (UNEP)
Executing Entities:	Sadar Development and Resilience Institute (Sadar)
Amount of Financing Requested:	5,000,000 (in U.S Dollars Equivalent)
Letter of Endorsement (LOE) signed:	Yes ☒ No ☐

NOTE: The LOE should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☒ This proposal has been submitted before including at a different stage (concept, fully-developed proposal)

☐ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: 2/9/2026

Please note that fully-developed proposal documents should not exceed 100 pages for the main document, and 100 pages for the annexes.

Project Background and Context

Geographic context

1. Along with the larger Jubba River, the Shabelle River is one of Somalia's two perennial rivers, carrying a considerable proportion of the country's surface water[1]. This river originates in Ethiopia's Bale Mountains at elevations exceeding 4,200 m[2] and flows ~1,200 km southeast across the Hirshabelle and South-West States before discharging into the Indian Ocean.[3] Along this path, it passes through the capital cities of the target districts — Beledweyne within the Hiiraan region, Jowhar within the Middle Shabelle region and Afgooye within the Lower Shabelle region[4].

2. The Shabelle River Basin, where the proposed project interventions will be implemented, comprises the catchment of the Shabelle River and its tributaries. Although the majority of this 283,000 km^2 catchment lies in the Ethiopian Highlands, the Shabelle River carries necessary water resources and nutrients to agropastoral communities situated along its floodplains in Somalia. Near the coast, the Shabelle River's gradient flattens considerably — to less than 1% between Beledweyne and Jowhar — creating a series of wetlands and floodplains that periodically become inundated during the rainy seasons. The fertile alluvial soils deposited across these plains during floods support diverse agricultural activities and sustain a considerable portion of Somalia's population[5].

Figure 1. Map of southern Somalia, illustrating the flow of the Shabelle River from Ethiopia through the Hiiraan, Middle Shabelle (Shabelle [6]) and Lower Shabelle (Shabelle Hoose) regions[7].

Socio-economic context

Demographic profile

3. The estimated 2025 populations of the Beledweyne, Jowhar and Afgooye districts are ~351,000, ~446,000 and ~575,000 respectively, with women comprising 50.2% of the population in Beledweyne and Jowhar and 50.3% in Afgooye. These districts are characterised by young populations and consequently high dependency ratios[8] of 60.1% in Beledweyne and Jowhar and 57.0% in Afgooye[9]. Moreover, in 2022, Beledweyne accommodated over 112,387 Internally Displaced Persons (IDPs)[10], while Jowhar and Afgooye accommodated 35,752 and

[1] FAO-SWALIM. (n.d.). The Juba and Shabelle Rivers and Their Importance to Somalia. Available at: https://faoswalim.org/article/juba-and-shabelle-rivers-and-their-importance-somalia. Accessed on 27 May 2025.
[2] FAO-SWALIM. (n.d.). The Juba and Shabelle Rivers and Their Importance to Somalia. Available at: https://faoswalim.org/article/juba-and-shabelle-rivers-and-their-importance-somalia. Accessed on 27 May 2025.
[3] World Bank Group. (2023). Somalia Climate Risk Review.
[4] Listed from the uppermost to lowermost district along the Shabelle River, respectively.
[5] FAO-SWALIM. (n.d.). The Juba and Shabelle Rivers and Their Importance to Somalia. Available at: https://faoswalim.org/article/juba-and-shabelle-rivers-and-their-importance-somalia. Accessed on 27 May 2025.
[6] UN. 2011. Somalia. Available at: https://www.un.org/geospatial/content/somalia. Accessed on 27 May 2025.
[7] Variable spellings such as Hiraan for Hiiraan and Jawhar/Giohar for Jowhar are common in Somalia. The district capitals of Beledweyne, Jowhar and Afgooye are marked in yellow.
[8] The age dependency ratio refers to the proportion of dependents (people younger than 15 or older than 64) relative to the working-age population (15–64 years), expressed as a percentage.
[9] The Humanitarian Data Exchange. 2024. Somalia - Subnational Population Statistics. https://data.humdata.org/dataset/cod-ps-som. Accessed on 27 May 2025.
[10] UNHCR. 2021. Somalia: Verified IDP sites in Beledweyne, Jowhar and Afgooye as of August 2021. UNHCR, Nairobi. Available at: https://data.unhcr.org/en/documents/details/90703. Accessed on 1 April 2025.

57,753[11], respectively. The rapidly growing and urbanising population and high dependency ratio increase demand for limited services, employment and infrastructure to support dependents, exacerbating existing socio-economic and developmental vulnerabilities in the region.

Cultural context

4. The ethnic and clan composition across Somalia is characterised by a lineage-based social structure. Although Somalia is considered ethnically homogeneous[12], it is divided into over 500 clans and subclans, with four major clan families, namely: the Darood, Dir, Hawiye and Isaaq. In the districts situated along the Shabelle River, historically marginalised groups such as the Rahanweyn (Digil-Mirifle), Bantu, Benadiri and Bajuni communities form a substantial proportion of the population alongside members of the major clan families. Beledweyne and Jowhar, located in the Hirshabelle State, are predominantly inhabited by Hawiye subclans. Afgooye has a more mixed composition that includes members of the Digil-Mirifle and Bantu communities, among others. These marginalised groups have historically been excluded from political representation and often face barriers to land ownership, education and public services[13].

Economic development

5. The target districts of Beledweyne, Jowhar, and Afgooye are highly dependent on agriculture and have limited access to public services. Beledweyne and Jowhar are mainly agropastoral and feature settled crop-livestock systems[14,15]. Irrigated farming is practised in areas with functioning canal infrastructure, supported by supplementary water sources including storage reservoirs and hand-dug wells, particularly during the dry season[16]. Afgooye is characterised by rainfed agriculture and hosts a large population of IDPs reliant on informal labour and external assistance[17]. In all three districts, the majority of livelihoods are closely linked to rainfed crop production and pastoralism.

6. Riparian forests, bushlands and grasslands in the Shabelle River Basin are used for pastoralism, wood harvesting or a combination of both. Conflicts over rangelands in the region arise occasionally, as grazing areas are communally owned while livestock ownership is private. This complicates regulation of rangeland use and leads to disputes, particularly during the dry season when competition for forage and water intensifies. The expansion of agriculture along river valleys further decreases the availability of grazing lands, exacerbating tensions between pastoralist groups and between pastoralists and settled farmers[18].

Food security

7. Approximately 70% of Somali households depend on agricultural livelihoods, including rainfed pastoralism, agropastoralism and subsistence farming. In the humid southern regions, including the Shabelle River Basin, settled livestock production, including camels, goats, sheep and cattle, and agropastoralism are common[19]. Maize and sorghum are the main staple crops[20], but domestic cereal production meets only 22% of national demand[21]. Imports of wheat and rice have increased substantially, with food import values rising from US$82 million in the 1980s to US$1.17 billion in 2020[22]. In contrast, livestock exports remain a considerable source of income, generating US$300–400 million annually. Agricultural productivity is limited by inadequate access to

[11] UNHCR. 2024. Somalia: UNHCR Somalia IDP Sites Verification Exercise – January to March 2024. UNHCR, Geneva. Available at: https://data.unhcr.org/en/documents/details/104423 . Accessed on 1 Apr 2025.
[12] UNDP. 2012. Somalia Human Development Report 2012: Empowering Youth for Peace and Development. UNDP, Nairobi. Available at: https://www.undp.org/sites/g/files/zskgke326/files/publications/HDR-Somalia-2012-E.pdf.
[13] World Bank Group. 2023. Somalia Climate Risk Review. World Bank, Washington, DC.
[14] Pablo Fernández Maestre and UNHABITAT, 2020: Beledweyne Urban Profile Working Paper and Spatial Analyses for Urban Planning Consultations and Durable Solutions for Displacement Crises.
[15] FAO SWALIM. 2014. Land Use Characterization of the Juba and Shabelle Catchments. FAO-SWALIM, Nairobi and Mogadishu.
[16] Oduori S, Vargas R and Alim M. 2007. Land Use Characterisation of the Juba and Shabelle riverine areas in Southern Somalia. FAO-SWALIM. Project Report No. L-07. Nairobi, Kenya. Available at: https://www.faoswalim.org/resources/site_files/L-07%20Land%20Use%20Characterization%20of%20the%20Juba%20and%20Shabelle_0.pdf. Accessed on 9 April 2025.
[17] World Bank. 2022. Somalia Drought Impact & Needs Assessment: Volume I – Synthesis Report. World Bank Group, Washington D.C.
[18] Ibid.
[19] World Bank. 2022. Somalia Drought Impact & Needs Assessment: Volume I – Synthesis Report. World Bank Group, Washington D.C..
[20] Ibid.
[21] World Bank. 2022. Somalia Drought Impact & Needs Assessment: Volume I – Synthesis Report. World Bank Group, Washington D.C..
[22] AfDB. 2023. Somalia Country Food and Agriculture Delivery Compact. AfDB, Abidjan. Available at: https://www.afdb.org/sites/default/files/documents/publications/somalie_country_food_and_agriculture_delivery_compact.pdf. Accessed on 27 May 2025.

quality inputs, including drought-resistant seeds, fertilisers and tools[23]. Across the Shabelle River Basin, maize and sorghum are the dominant crops, whilst irrigation enables smallholders to grow fruits and vegetables seasonally for income and dietary diversity[24]. Mixed farming systems integrate livestock, particularly cattle, goats and sheep. Crop and livestock production are increasingly affected by drought and riverine flooding[25].

Gender

8. Women in Somalia experience greater rates of unemployment than men. Nationally, only 19% of women participate in the labour force, compared with 74% of men. This low participation is partly explained by limited access to education and skills development. Most women are employed in informal, low-paying sectors. Nationally, 55% of women and 40% of men have no formal education[26], with women consistently underrepresented across all levels of attainment.

9. Women-headed households in IDP settlements — which are common in Beledweyne, Jowhar and Afgooye — are vulnerable to additional challenges in securing stable livelihoods resulting from displacement, exposure to gender-based violence (GBV), gender-based discrimination, inadequate shelter and limited access to justice. These barriers also limit access to essential services such as healthcare, safe water and maternal care, particularly in underserved and densely populated areas such as Afgooye Town. Furthermore, women and youth in displaced communities are vulnerable to compounded constraints in securing agricultural livelihoods because of barriers such as land tenure insecurity, limited access to credit and exclusion from formal labour markets[27].

Environmental context

Climate baseline

10. In the regions that include the target districts[28], the monthly maxima of daily maximum temperature reach 35.2–37.6°C in March — the hottest month — whilst the mean annual temperature is 27.2°C[29]. Rainfall is typically limited and characterised by considerable intra- and inter-annual variability. The Shabelle River Basin receives an average of ~400 mm of rainfall per year, precipitated primarily during two rainy seasons: the *Gu* (Apr–Jun) — which delivers more than 60% of the annual rainfall — and the *Deyr* (Oct–Dec). These are interspersed with two dry seasons: the *Xagaa* (Jul–Sep) and the *Jilaal* (Jan–Mar). Rainfall patterns are irregular, with regional recurrent droughts every 3–4 years and more severe dry spells every 7–9 years[30]. High rates of potential evapotranspiration (PET), ranging from 1,500 to 2,000 mm per year in the project districts, exacerbate moisture deficits. Relative humidity — and consequently soil moisture — increase with proximity to the Shabelle River, resulting in a corridor of less arid land that supports agriculture and pastoralism in the basin[31].

[23] Refer to Socio-economic context for a detailed explanation of baseline challenges decreasing food security.
[24] World Bank. 2022. Somalia Drought Impact & Needs Assessment: VOLUME I Synthesis Report. Available at: https://documents1.worldbank.org/curated/en/901031516986381462/pdf/122991-v1-GSURR-Somalia-DINA-Report-Volume-I 180116-Digital.pdf. Accessed on 27 May 2025.
[25] FAO SWALIM. 2018. Land Use Characterization of the Juba and Shabelle River Basins (L-07). FAO – Somalia Water and Land Information Management. Nairobi.
[26] IFAD. 2021, Country Strategy Note (2022-2023). Report No: 6032-SO Near East, North Africa and Europe Division Programme Management Department.
[27] World Bank. 2022. Somalia Drought Impact & Needs Assessment: VOLUME I Synthesis Report.
[28] Hiiraan, Middle Shabelle and Lower Shabelle, containing the target districts of Beledweyne, Jowhar and Afgooye, respectively.
[29] World Bank Group. 2021. Climate Change Knowledge Portal Somalia: Current Climate. Available at: https://climateknowledgeportal.worldbank.org/country/somalia/climate-data-historical. Accessed on 8 May 2025.
[30] Ogallo LA, Omondi P, Ouma G and Wayumba G. 2018. Climate Change Projections and the Associated Potential Impacts for Somalia. American Journal of Climate Change. 7:153-170.
[31] Oduori S, Vargas R and Alim M. 2007. Land Use Characterisation of the Juba and Shabelle riverine areas in Southern Somalia. FAO-SWALIM. Project Report No. L-07. Nairobi, Kenya.

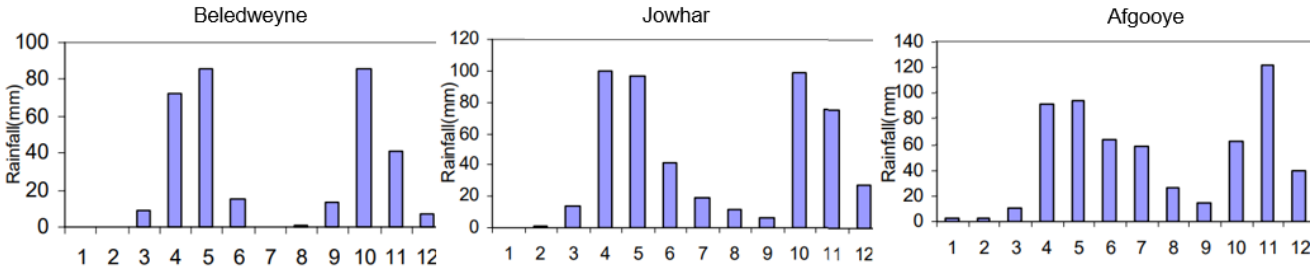

Figure 2. Mean monthly (Jan–Dec) rainfall (mm) in project districts, 1963–2001.

Land cover and land use

11. Land use in the Shabelle River Basin is influenced by seasonal climate, water access and rural livelihoods. Sedentary farmers practise small-scale mixed farming, integrating crops and livestock, whilst transhumance pastoralism dominates the rangelands. Rainfed and mixed rainfed-pastoral systems cover much of the area, producing crops such as sorghum, maize, millet and legumes. Near the river, irrigated zones support high-value crops including bananas, sesame, vegetables and fruit trees, particularly in Jowhar and Afgooye, occasionally combined with livestock grazing[32]. Livestock is managed seasonally, with lactating animals kept near homes and others herded further afield. The landscape also includes riparian forests, bushlands, grasslands and urban settlements that offer limited formal employment.

Observed and projected climate change hazards and impacts

Changes in temperature

12. Somalia's mean annual temperature has increased by ~2°C between 1950 and 2023[33]. The observed mean annual temperatures of the target districts of Beledweyne, Jowhar and Afgooye follow this national warming trend, with the mean annual temperatures of Jowhar and Afgooye historically being lower than those of Beledweyne, which is farther inland[34]. In addition to mean temperatures, temperature extremes have also increased. For example, the annual maximum daily temperature of Somalia increased from 35.5ºC in 1950 to 37.3ºC in 2020[35]. Similarly, the mean number of annual days with a heat index of >35ºC has increased from 0.79 during 1950–1959 to 3.24 during 2010–2019, with a peak of 7.07 days in 2016[36].

13. Temperatures are projected to continue increasing in Somalia as a whole and in the target districts. Between 2023[37] and 2100, mean annual temperatures in Somalia are expected to increase by 2.0°C and 4.3°C under SSP2-4.5[38] and SSP5-8.5, respectively (Table 1; Figure 3)[39]. The projected mean annual temperatures for the Hiiraan, Middle Shabelle and Lower Shabelle Regions[40] reflect the national trends under SSP2-4.5 and SSP5-8.5. Moreover, maximum annual temperatures are projected to increase by ~0.5ºC per decade in the target regions[41].

[32] Ibid.
[33] World Bank. 2023. Somalia Climate Risk Review. World Bank Publications: Washington, DC, USA. Available at: https://documents1.worldbank.org/curated/en/099062923035034613/pdf/P176246037561 90c409e570193ea2ae944d.pdf. Accessed on 27 May 2025.
[34] World Bank. (n.d.). Climate Change Knowledge Portal: Somalia. Available at: https://climateknowledgeportal.worldbank.org/country/somalia. Accessed on 27 May 2025.
[35] World Bank. 2023. Somalia Climate Risk Review. World Bank Publications: Washington, DC, USA.
[36] World Bank. 2023. Climate Change Knowledge Portal: Somalia. Available at: https://climateknowledgeportal.worldbank.org/country/somalia/era5-historical. Accessed on 27 May 2025.
[37] The World Bank Group's most recent temperature and precipitation data in Somalia were recorded in 2023. Projected anomalies in Table 1 are calculated from these most current recorded (2023) data and the projected data for 2100.
[38] Shared Socio-economic Pathways (SSPs) are scenarios used in climate modelling to reflect different socio-economic trajectories, often paired with Representative Concentration Pathways (RCPs), which represent greenhouse gas concentration levels. For example, SSP5-8.5 aligns with a high-emissions, fossil fuel-intensive future, while SSP2-4.5 reflects moderate mitigation.
[39] World Bank Group. 2023. Climate Change Knowledge Portal: Somalia. Available at: https://climateknowledgeportal.worldbank.org/country/somalia/climate-data-projections. Accessed on: 15 April 2025.
[40] Used here as proxies because no district-level projections are available.
[41] Climate Change Knowledge Portal: Somalia. 2023. Available at: https://climateknowledgeportal.worldbank.org/country/somalia/trends-variability-projections. Accessed on: 25 April 2025.

Table 1. Projected temperature and precipitation between 2023 and 2100 under SSP2-4.5 and SSP5-8.5 in the three target districts and Somalia as a whole[42].

Area	Temperature increase (°C)		Precipitation change (mm per year)	
	SSP2-4.5	SSP5-8.5	SSP2-4.5	SSP5-8.5
Somalia	2.0	4.3	-52	56
Hiiraan (Beledweyne)	2.0	4.3	-42	105
Middle Shabelle (Jowhar)	2.2	4.3	80	230
Lower Shabelle (Afgooye)	2.0	4.1	108	265

Changes in precipitation

14. Whereas temperature has increased in the past several decades, there has been no substantial long-term trend in annual precipitation in Somalia between 1950 and 2023, although this varies spatially. The regions of Middle Shabelle and Lower Shabelle[43] have recorded precipitation decreases of 6.9 mm and 0.67 mm per decade, respectively[44], whereas in the Hiiraan region, precipitation increased by 13 mm per decade.

15. Precipitation variability has increased between 1950 and 2020, as the number of consecutive dry days increased by 4.2 days per decade[45]. In addition, Somalia's *Deyr* season has lengthened since the 1960s[46]. The primary rainy season (*Gu*) showed a drying trend from 1986 to 2007[47] and is predicted to occur earlier in 2025, in March–May[48]. Between 1998 and 2014, seasonal rainfall patterns shifted, leading to changes in precipitation intensity and distribution across various regions in Somalia[49], including a decrease in *Gu, Hagga* and *Jilaal* rainfall in southern districts and an increase in *Deyr* rainfall in central and northern districts during July–September[50].

16. Precipitation projections in Somalia vary depending on the SSP and spatial resolution of the projection. Between 2023 and 2100, national annual precipitation is projected to decrease by 52 mm under SSP2-4.5 and increase by 56 mm under SSP5-8.5[51]. In contrast to temperature, precipitation projections are more variable at greater spatial resolutions (Figure 4). Between 2023 and 2100, annual precipitation in the Hiiraan Region is expected to decrease by 42 mm under SSP2-4.5 and increase by 105 mm under SSP5-8.5. In the Middle Shabelle and Lower Shabelle Regions, precipitation is expected to increase under both SSPs — by 80 mm and 230 mm in Middle Shabelle, and by 108 mm and 265 mm in Lower Shabelle, under SSP2-4.5 and SSP5-8.5 respectively.

[42] World Bank Group. 2023. Climate Change Knowledge Portal: Somalia. Available at: https://climateknowledgeportal.worldbank.org/country/somalia/climate-data-projections. Accessed on: 15 April 2025.
[43] Containing the target districts of Jowhar and Afgooye, respectively.
[44] World Bank. 2021. Climate Change Knowledge Portal: Somalia. Available at: https://climateknowledgeportal.worldbank.org/country/somalia/trends-variability-historical. Accessed on 27 May 2025.
[45] Ibid.
[46] Trisos CH et al. 2022. Africa. In: Pörtner H-O et al. (eds.) Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the IPCC, pp. 1285–1455. Cambridge University Press, Cambridge, UK. Available at: https://doi.org/10.1017/9781009325844.011.. Accessed on 27 May 2025.
[47] Trisos CH et al. 2022. Africa. In: Pörtner H-O et al. (eds.) Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the IPCC, pp. 1285–1455. Cambridge University Press, Cambridge, UK. Available at: https://doi.org/10.1017/9781009325844.011. Accessed on 27 May 2025.
[48] Somali Magazine. 2025. Somalia Braces for Hotter, Drier Gu 2025 Season Amid Food and Water Security Fears. Available at: https://somalimagazine.so/somalia-braces-for-hotter-drier-gu-2025-season-amid-food-and-water-security-fears. Accessed on: 15 April 2025.
[49] Office of the Prime Minister, GoFS. 2018. The initial national communication for Somalia to the UNFCCC. GoFS, Mogadishu, Somalia.
[50] Ibid
[51] Ibid

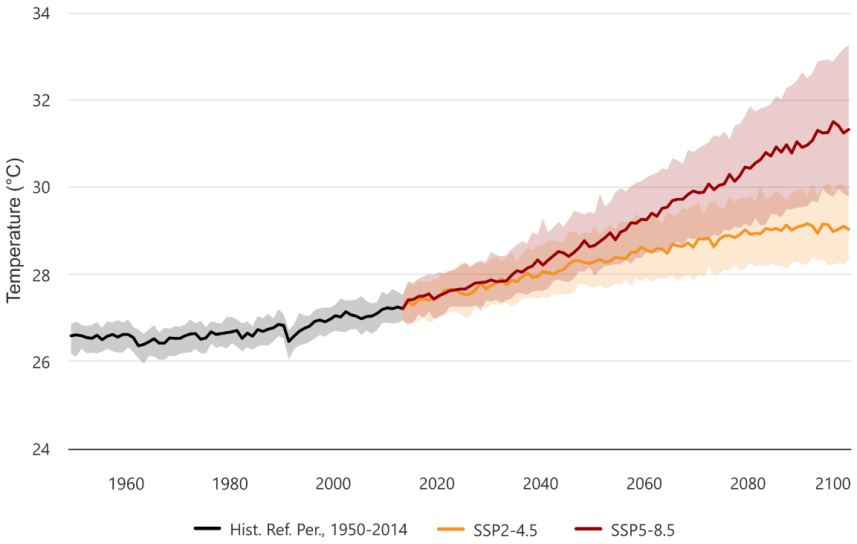

Figure 3. Projected mean annual temperatures in Somalia under SSP2-4.5 and SSP5-8.5 [52].

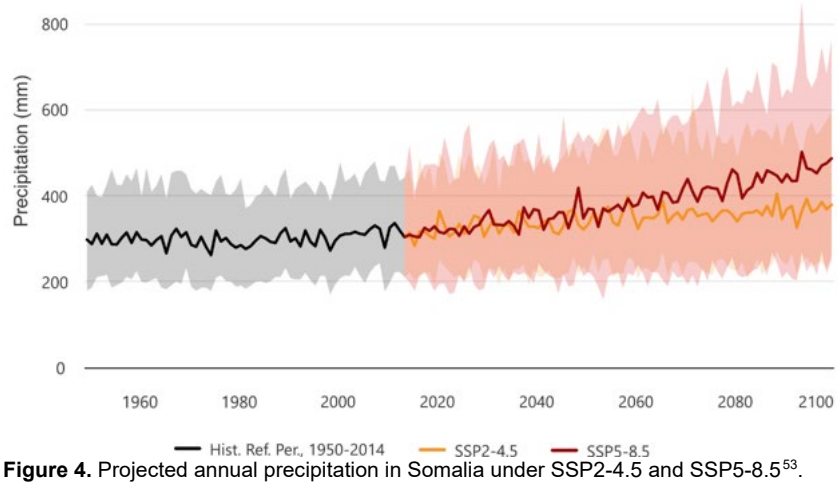

Figure 4. Projected annual precipitation in Somalia under SSP2-4.5 and SSP5-8.5[53].

Sectoral impacts of climate change hazards

17. During 2008–2021, 49 climate hazards were reported in Somalia — of which 26 were droughts and 22 were floods — resulting in the internal displacement of 3.5 million people[54]. In addition to casualties, both floods and droughts caused considerable economic losses, with US$1–5 billion in annual drought losses and US$100 million to US$1 billion in annual flood losses over that same period. Droughts are common in the country[55,56] and have resulted in substantial fatalities across the country, causing ~10,000 deaths annually[57]. Under the RCP4.5 and RCP8.5 scenarios, the change in land area affected by drought is projected to increase by 36%

[52] World Bank. (n.d.). Climate Change Knowledge Portal: Somalia. Available at: https://climateknowledgeportal.worldbank.org/country/somalia. Accessed on: 27 May 2025.
[53] Ibid.
[54] World Bank. 2023. Somalia Climate Risk Review. World Bank Publications: Washington, DC, USA. Available at: https://documents1.worldbank.org/curated/en/099062923035034613/pdf/P176246037561 90c409e570193ea2ae944d.pdf. Accessed on 27 May 2025.
[55] Ibid.
[56] UNEP-DHI. 2022. Applicability of Nature-based Solutions for Flood and Drought Management in Somalia: Final Report. UNEP-DHI Centre: Hørsholm, Denmark. Available at: https://unepdhi.org/wp-content/uploads/sites/2/2022/05/Somalia_NbS_Final_NbS_Report.pdf. Accessed on 27 May 2025.
[57] World Bank. 2023. Somalia Climate Risk Review. World Bank Publications: Washington, DC, USA. Available at: https://documents1.worldbank.org/curated/en/099062923035034613/pdf/P176246037561 90c409e570193ea2ae944d.pdf. Accessed on 27 May 2025.

and 39% in the 2080s, respectively[58].

18. The target districts are also vulnerable to flooding, with Beledweyne undergoing regular floods[59]. Although floods cause fewer casualties than droughts — resulting in 10–100 deaths annually[60] — they have considerable impacts on households and livelihoods. Somalia has documented recent flooding events in 1997-98, 2005, 2006, 2009, 2011, 2013, 2015, 2016, 2018, 2019, 2020 and 2023 — with the intensity of frequency of these events increasing since 2000. The number of heavy precipitation days — an indicator of flash floods — is projected to increase by 7.5–12.2 days by 2080 under RCP6.0, although no trend is discernible under RCP2.6[61].

Impacts on agriculture and pastoralism

19. Climate hazards — particularly droughts and floods — have disrupted Somalia's agricultural sector, particularly in the fertile districts along the Shabelle and Jubba Rivers. Since 2016, droughts have increased in frequency and intensity, with little recovery time[62]. For example, the 2016–2018 drought — followed by insufficient rains during the 2021–2022 season — destroyed 68% of vegetation and caused environmental losses valued at ~US$1.2 billion[63]. Cereal crop production, which contributes 30–50% of Somalia's dietary energy, has decreased by more than 66% per capita since 1966[64]. Local production now meets only 22% of cereal needs, prompting a steep increase in agricultural imports — from US$82 million in the late 1980s to US$1.2 billion by 2021[65]. The negative impacts of climate hazards on crops and limited local production have led to chronic food insecurity, with ~8 million people food insecure as of 2023[66].

Projections show that the mean flow of the Shabelle River at Afgooye will potentially be reduced by ~96% in 2050[67], considerably reducing water availability for household and agricultural use and decreasing the productivity of crop- and grazing lands (Figure 5).

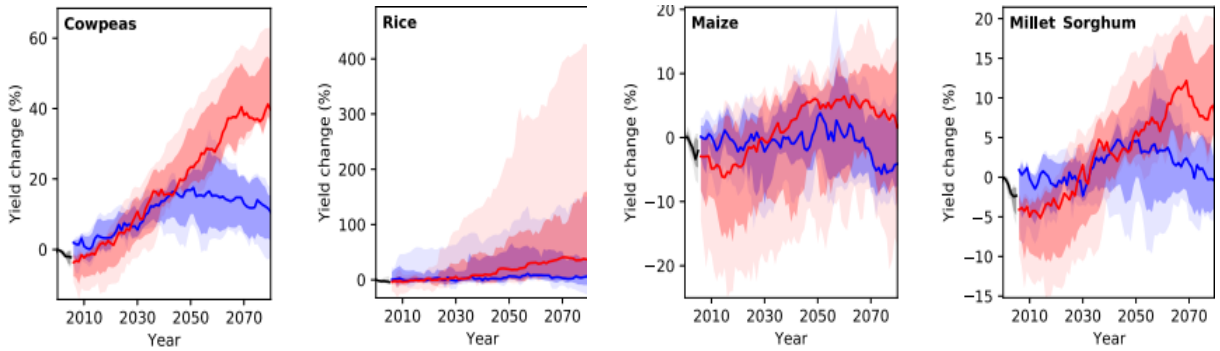

Figure 5. Projected crop yield changes and uncertainty under RCP2.6 (red) and RCP6.0 (blue), based on 2005 extent of land use and management [68].

20. Nomadic pastoralism in Somalia is reliant on rainfed ecosystems and, therefore, increasingly vulnerable to overlapping cycles of drought and flooding. Prolonged drought between mid-2021 and the end of 2022 resulted

[58] Haile GG, Tang Q, Hosseini-Moghari SM, Liu X, Gebremicael TG, Leng G, Kebede A, Xu X, Yun X. 2020. Projected impacts of climate change on drought patterns over East Africa. Earth's Future, 8: e2020EF001502.
[59] UN Habitat. 2020. An Analysis of Flood Risk and Urban Resilience in Beledweyne. Available at: https://unhabitat.org/an-analysis-of-flood-risk-and-urban-resilience-in-beledweyne. Accessed on 27 May 2025.
[60] World Bank. 2023. Somalia Climate Risk Review. World Bank Publications: Washington, DC, USA.
[61] Binder L, Šedová B, Rüttinger L. 2022. Climate Risk Profile Somalia. Potsdam Institute for Climate Impact Research, Potsdam, Germany.
[62] Save the Children. 2022. Somalia's worst drought crisis in a decade leaves millions hungry with lives at risk. Available at: https://www.savethechildren.net/news/somalia-s-worst-drought-crisis-decade-leaves-millions-hungry-lives-risk. Accessed on 27 May 2025
[63] World Bank. 2020. Diagnostic study on trends and threats for environmental and natural resources challenges.
[64] Gavin, R. et al, 2019: The Relative Contributions of Cereal Production, Imports, And Aid to Somali Food Security. African Journal of Food, Agriculture, Nutrition and Development 2019; 19(3): 14587–14601.
[65] International Trade Administration. 2024. Somalia Country Commercial Guide. Available at: https://www.trade.gov/country-commercial-guides/somalia-agribusiness-and-food. Accessed on: 15 April 2025.
[66] OCHA. 2022. Somalia Humanitarian Needs Overview 2023. Available at: https://reliefweb.int/report/somalia/somalia-humanitarian-needs-overview-2023 -february-2023. Accessed on: 27 May 2025.
[67] International Bank for Reconstruction and Development. 2021. Technical Report. Somalia: Surface Water and Riverine Assessment. Available at: https://documents1.worldbank.org/curated/en/099430012022130498/pdf/P17499403c63df07e086e90eab1140bf66d.pdf.
[68] Weathering Risk. 2022. Climate Risk Profile Somalia. Available at: https://weatheringrisk.org/sites/default/files/document/220214_SomaliaClimateRiskProfile-05.pdf. Accessed on: 15 April 2025.

in one-third of livestock being lost in the most severely exposed areas[69]. These losses have deepened vulnerabilities among pastoralist communities who depend heavily on livestock for income, nutrition and cultural identity[70]. Current climate change impacts on pastoral communities are likely to become exacerbated under projected climate trends, as decreased availability of water and fodder for livestock, and increased heat stress and prevalence of livestock pathogens and parasites will cause greater livestock mortality, although exact trends are difficult to quantify[71]. Moreover, livestock are expected to yield less milk and be less productive, with productivity decreases of ~5% per 1% temperature increase[72].

Impacts on public health and nutrition

21. Climate change hazards in Somalia create public health challenges and degrade the capacity of the healthcare system to respond adequately. For example, 2018 floods damaged or destroyed 15 healthcare facilities in the country and resulted in contaminated water supplies that caused an increase in cholera and acute watery diarrhoea[73]. Altered climatic conditions are likely to expand the range of disease vectors such as mosquitoes, potentially resulting in an increase of vector-borne diseases. Increased spread of water-borne pathogens is also probable because of more frequent and severe flooding, which will potentially contaminate drinking water supplies[74].

22. The loss of crops and livestock, as well as internal displacement of farmers and pastoralist, have contributed to a national food security crisis. Malnutrition rates in the country are among the world's highest, with 17.4% of children below the age of five suffering from moderate acute malnutrition (MAM) and 3.2% severely malnourished (SAM)[75]. The food security crisis is compounded by conflict, economic shocks and global trade disruptions.

Impacts on infrastructure and settlements

23. Floods have had severe and compounding effects on infrastructure and livelihoods across Somalia's urban centres, particularly in Beledweyne, Jowhar and Afgooye. Repeated flood events have damaged roads, bridges and markets, isolating communities and disrupting supply chains, including access to healthcare and food distribution networks. For example, in Beledweyne floods frequently damage the main road linking the city to Mogadishu, hindering emergency response and market access. Recurrent urban flooding also affects social infrastructure as schools and health facilities are frequently inundated, reducing access to services and increasing the risk of waterborne diseases. As unplanned settlements expand in flood-prone zones, the risks intensify — particularly for IDPs, who typically reside in marginal areas with inadequate drainage. Flood exposure compounds existing vulnerabilities, contributing to a cycle of displacement, poverty and environmental degradation[76].

24. More frequent and intense floods caused by increased rainfall variability are likely to exacerbate the existing

[69] Reliefweb. 2023. Somalia Humanitarian Needs Overview 2023 (February 2023). Available at: https://reliefweb.int/report/somalia/somalia-humanitarian-needs-overview-2023-february-2023. Accessed on: 22 April 2025.
[70] IGAD Center for Pastoral Areas & Livestock Development. 2016. Policy Brief on The Contribution of Livestock to Somalia Economy Jan 2016. Available at: https://icpald.org/wp-content/uploads/2019/08/Policy-Brief-on-The-Contribution-of-Livestock-to-Somalia-Economy-Jan-2016.pdf. Accessed on: 22 April 2025.
[71] SPARC. 2024. Assessing and financing loss and damage due to climate change in Somalia. London, UK. Available at: https://www.sparc-knowledge.org/sites/default/files/documents/resources/Report%20Assessing%20and%20financing%20loss%20and%20damage%20due%20to%20climate%20change%20in%20Somalia_HiRes.pdf. Accessed on: 25 April 2025.
[72] Warsame AA, Sheik-Ali IA, Hassan AA and Sarkodie SA. 2021. Extreme climatic effects hamper livestock production in Somalia. Environmental Science and Pollution Research. 29: 40755–40767.
[73] World Bank. 2013. Somalia Climate Risk Review. Available at: https://documents1.worldbank.org/curated/en/099062923035034613/pdf/P176246037561 90c409e570193ea2ae944d.pdf. Accessed on: 25 April 2025.
[74] World Bank. 2023. Somalia Climate Risk Review. Washington DC, USA. Available at: https://openknowledge.worldbank.org/entities/publication/8f51dc1a-e342-40a3-8fbe-08e9aa4a2058. Accessed on: 27 May 2025.
[75] World Bank. 2022. Somalia Drought Impact & Needs Assessment: VOLUME I Synthesis Report. Available at: https://documents1.worldbank.org/curated/en/901031516986381462/pdf/122991-v1-GSURR-Somalia-DINA-Report-Volume-I-180116-Digital.pdf. Accessed on: 27 May 2025.
[76] Ibid

socio-economic impacts of floods[77], particularly in urban areas within the Shabelle River Basin (Table 2)[78]. These floods will contribute to infrastructure degradation, decreasing the capacity of the country's already inadequate transport, energy, and public service infrastructure. These damages — combined with displacement of people and the impacts on the productivity of the agricultural and pastoral sectors — will challenge livelihoods and impede Somalia's socio-economic development considerably. Although the uncertainty surrounding adaptation interventions and development in the country makes exact projections challenging, it is estimated that by 2050, flood and drought damages across the economy will exceed US$5 billion and potentially reach as high as US$100 billion[79].

Table 2. Projected impacts of floods with a 25-year return period, excluding damage to crops and livestock[80].

Flood impact	2010 (baseline)	2030	2050	2080
Damage (million US$ per year)	270	2,700	10,000	38,000
Affected population (thousand people)	9,300	13,000	16,000	18,000
Affected proportion of total population (%)	7.3	9.6	9.7	9.5
Affected gross domestic product (million US$ per year)	320	1,200	3,000	9,000

Baseline situation for climate change adaptation and NbS

National policy initiatives

25. Somalia has developed several national policy initiatives to address climate change adaptation, disaster risk reduction (DRR) and sustainable development. These are summarised in Table 3. The proposed project's alignment with these national priorities and institutional frameworks is discussed in Part II, Section F: 'Consistency with other strategies'.

Table 3. Somalia's national climate policy initiatives.

Policy	Description
National Adaptation Plan (Draft approved in 2025)[81]	Somalia's NAP outlines a national strategy to build resilience against climate change impacts, including droughts, floods, water scarcity and health risks. It focuses on climate-smart agriculture, sustainable water management, resilient health systems and climate-proof infrastructure. The plan promotes cross-sectoral coordination, community-led action and strong institutional frameworks, supported by a financing strategy. Moreover, a Monitoring, Evaluation, and Learning framework ensures accountability and adaptive management. The NAP aims to integrate climate resilience into development, protect vulnerable populations, and support long-term sustainability.
Nationally Determined Contribution (NDC)[82]	Somalia submitted its NDC 3.0 in June 2025. Its submission foreground sustainable development, peacebuilding and climate adaptation as national priorities across federal, member state and local government levels.
National Development Plan 2020–2024 (NDP-9)[83]	NDP-9 identifies climate disasters as a primary driver of poverty in Somalia. It emphasises improved management of environmental and natural resources and building resilience among households, communities and government as imperative actions for building climate resilience.
National Transformation Plan (NTP) 2025–2029[84]	Following on from the NDP-9, the NTP (2025–2029) is a strategic framework guiding Somalia's development towards inclusive governance, rule of law, and a resilient, service-oriented economy. It envisions a stable and prosperous Somalia and is structured around four core pillars: i) transformational

[77] Refer to Figure 1. Map of southern Somalia, illustrating the flow of the Shabelle River from Ethiopia through the Hiiraan, Middle Shabelle (Shabelle) and Lower Shabelle (Shabelle Hoose) regions.
Socio-economic context for additional details.
[78] World Bank. 2023. Somalia Climate Risk Review. Washington DC, USA. https://openknowledge.worldbank.org/entities/publication/8f51dc1a-e342-40a3-8fbe-08e9aa4a2058. Accessed on: 27 May 2025.
[79] SPARC. 2024. Assessing and financing loss and damage due to climate change in Somalia. London, UK. https://www.sparc-knowledge.org/sites/default/files/documents/resources/Report%20Assessing%20and%20financing%20loss%20and%20damage%20due%20to%20climate%20change%20in%20Somalia_HiRes.pdf. Accessed on: 25 April 2025.
[80] World Bank. 2023. Somalia Climate Risk Review. World Bank Publications: Washington, DC, USA. https://documents1.worldbank.org/curated/en/099062923035034613/pdf/P176246037561 90c409e570193ea2ae944d.pdf. Accessed on 27 May 2025.
[81] National Adaptation Plan for the Federal Republic of Somalia (Final Draft). 2024. Mogadishu, Somalia.
[82] Federal Republic of Somalia. 2021. Updated Nationally Determined Contribution (NDC).https://unfccc.int/sites/default/files/NDC/2022-06/Final Updated NDC for Somalia 2021.pdfCopy of Somalia NDC 3.0_Validation_Version_NDC-P_31May2025
[83] Ministry of Planning, Investment and Economic Development. 2022. Somalia National Development Plan 2020 to 2024.https://mop.gov.so/wp-content/uploads/2022/07/Somali-National-Development-Plan-9-2020-2024.pdf
[84] Ministry of Planning, Investment and Economic Development. 2025. National Transformation Plan (NTP). https://mop.gov.so/national-transformation-plan-ntp-2025-2029-report/

	governance, focusing on institutional reform and accountability; ii) sustainable economic transformation, aimed at inclusive growth and diversification; iii) social and human capital transformation, emphasising investments in health, education, and social protection; and iv) environment and climate resilience, integrating sustainability and climate adaptation into national development.
National Disaster Management Policy[85]	Established in 2018, this policy guides disaster management efforts in Somalia. It is supported by the National Disaster Risk Reduction (DRR) Strategy, focusing on addressing underlying disaster risk drivers including unsustainable use of natural resources, environmental degradation, conflict, poverty and rapid urbanisation. The policy identifies NbS as effective tools for flood and drought mitigation.
Somalia Recovery and Resilience Framework (RRF)[86]	This framework was established in 2018, to transition Somalia from early drought recovery to long-term resilience and disaster risk mitigation. It focuses on efficient financial responses, prioritising sectors such as agriculture, food security, water, sanitation and hygiene (WASH), education, transportation, environment, social protection, gender, governance and disaster management.

Current and past programmes and projects at the federal, member state and local government level

26. A number of past and ongoing projects in Somalia have been implemented to support climate adaptation and natural resource management. These initiatives have strengthened the country's technical and institutional capacity to support the implementation and monitoring of NbS interventions. While not exclusively focused on hybrid NbS, these initiatives offer synergies for the proposed project which are discussed in Part II, Section H: 'Project duplication'.

The NbS catalogue

27. From August 2021 to March 2022, the Sustainable Flood Management and Risk Reduction Action project was implemented to support national efforts in strengthening climate resilience[87]. This project was funded by the Foreign, Commonwealth and Development Office (FCDO) and was implemented by the Ministry of Energy and Water Resources (MOEWR) in collaboration with the United Nations (UN) Food and Agricultural Organisation (FAO) and UNEP — including the United Nations Environment Programme-Danish Hydraulic Institute (UNEP-DHI). The project supported the implementation of the Somalia National Water Resource Strategy (NWRS)[88], launched by MOEWR in April 2021 — particularly to build the capacity of institutions to coordinate inter-ministerial responses to droughts and floods. UNEP's role included providing data and tools for assessing flash flood risks and conducting research on NbS. Deliverables included a catalogue of NbS measures, modelling of effective options and indicators for prioritising NbS with flood mitigation potential.

28. The NbS catalogue, developed from desktop research, contains a record of past and present documented NbS, primarily for flood and drought management, in Somalia and similar climates. It draws from research articles, reports and evaluation documents of projects, covering Somalia and other locations with a comparable climate. Many NbS in the catalogue address the negative impacts of drought, focusing on water capture and storage for human and livestock consumption. Traditional methods such as *berkhads*[89], gabions, earth dams and soil bunds are commonly used in NbS interventions. These methods often blend 'hard' construction materials, such as stones and cement, with green measures such as revegetation and reforestation, and as such can be classified as hybrid NbS. These hybrid interventions utilise local materials and traditional knowledge, enhancing scalability and local relevance. Despite their hybrid nature, these NbS have proven long-term efficacy and resilience. This blended approach supports the expansion of NbS applications, leveraging their historical use and adaptation to local conditions.

NbS and hybrid measures with the highest potential for mitigating floods

29. The United Nations Environment Programme-Danish Hydraulic Institute (UNEP-DHI) and MOEWR conducted an assessment of the efficiency of the NbS and hybrid measures identified in the catalogue. The assessment

[85] Federal Republic of Somalia. 2020. National Disaster Risk Management Policy.https://www.preventionweb.net/media/97400/download?startDownload=20250612
[86] Federal Republic of Somalia. 2018. Somalia Recovery and Resilience Framework.https://www.undp.org/sites/g/files/zskgke326/files/migration/so/Somalia-RRF-Summary-Report_final_layout6July2018-2.pdf
[87] UNEP-DHI. 2022. Sustainable Flood Management and Risk Reduction Action: Applicability of Nature-based Solutions for Flood and Drought Management in Somalia. Final Report.https://www.unepdhi.org/wp-content/uploads/sites/2/2022/05/Somalia_NbS_Final_NbS_Report.pdf
[88] Federal Government of Somalia. 2021. National Water Resource Strategy 2021–2025.https://www.afdb.org/sites/default/files/final-draft-strategy-book.pdf
[89] A berkhad is a traditional rainwater harvesting structure used in arid regions to store surface runoff for use during dry periods.

used models to simulate catchment response to heavy rainfall in terms of reducing peak flows for four *wadis* (seasonal streams); two in Beledweyne and two in Qardho districts[90]. Modelling results showed that a combination of V-shaped weirs and sand dams is most effective in reducing peak flow and enhancing aquifer recharge (Table 4). Sand dams and reinforced cement walls across river channels increased infiltration by over 200% in areas such as Beledweyne, but only reduced peak flow by 1% (Table 4). V-shaped weirs — with a V-shaped opening that widens from the riverbed — increased infiltration by 23% and reduced peak flow by 30%. The combined use of sand dams and V-shaped weirs yielded the most promising results, increasing infiltration by 118% and 156% at depths of 1.5 and 2 m respectively and reducing peak flow by 21% and 8% at the same depths. This combination could potentially reduce floods by up to 60% in Qardho and 38% in Beledweyne — although effectiveness varies by flood extent, season and location. Other tested NbS — such as agricultural terracing and replanting trees on 5% of the catchment area — were less effective in reducing flash floods but more beneficial for reducing drought impacts on agriculture.

Table 4. The estimated daily infiltration along the Xarargagabaale River in the different scenarios and the reduction of maximum discharge during the flood event of 28 October 2009. The infiltration is for the entire event of September–October 2009[91].

Scenario	Average infiltration (m^3/d)	Infiltration increase from baseline (%)	Flood peak reduction from baseline (%)
Baseline	240	0	0
V-shape	295	23	30
Sand dam	727	203	1
Combined 1.5 m	522	118	21
Combined 2 m	614	156	8

Proposed technical requirements to guide the prioritising NbS interventions

30. The successful planning and implementation of NbS interventions requires adequate technical capacity. In addition, appropriate data are required to measure the effectiveness of NbS interventions. These data include metrics such as discharge, volume of water stored, soil erosion rates, sediment deposition, discharge volume and velocity. In addition to enabling better NbS implementation, this information provides insights into the scope for upscaling NbS at the basin and country scale.

Problem to be addressed by the proposed project

31. Climate change has resulted in intensified floods and droughts throughout the Shabelle River Basin, increasing ecosystem degradation and decreasing agricultural productivity. These climate impacts are exacerbated by interlinked socio-economic pressures, including: i) deforestation and vegetation loss driven by the lack of viable alternatives to charcoal production; ii) overgrazing and unsustainable rangeland and agricultural practices; and iii) rapid population growth and the influx and settlement of climate- and conflict-induced internally displaced persons (IDPs), often concentrated near scarce water resources. Together, these factors place increasing pressure on ecosystems and their services, undermining the health and resilience of the natural systems upon which communities in the basin depend for food production, income generation, energy access, and water supply. This has exacerbated water scarcity, food insecurity and public health challenges for urban and rural residents throughout the basin (Figure 6). Despite the increasing number of policies and programmes recognising the necessity for climate change adaptation in the Shabelle basin, and in Somalia in general, the effective implementation, replication and upscaling of NbS, hybrid solutions and other climate change adaptation interventions has been limited. Particularly when paired with conventional 'grey' infrastructure to create hybrid solutions, NbS provide cost-effective, sustainable interventions for climate change adaptation as they decrease climate risks while delivering environmental and socio-economic benefits. Insufficient implementation of NbS and hybrid solutions for climate change adaptation in the Shabelle River Basin are attributable to four primary barriers.

[90] UNEP-DHI. 2022. Sustainable Flood Management and Risk Reduction Action: Applicability of Nature-based Solutions for Flood and Drought Management in Somalia. Final Report.https://www.unepdhi.org/wp-content/uploads/sites/2/2022/05/Somalia_NbS_Final_NbS_Report.pdf

[91] UNEP-DHI. 2022. Sustainable Flood Management and Risk Reduction Action: Applicability of Nature-based Solutions for Flood and Drought Management in Somalia. Final Report.https://www.unepdhi.org/wp-content/uploads/sites/2/2022/05/Somalia_NbS_Final_NbS_Report.pdf

Barrier 1: Inadequate technical capacities to support knowledge-based planning, implementation and maintenance of NbS measures

32. Development in Somalia continues to be impeded by inadequate technical capacity, skills and experience across all sectors and levels of stakeholders, including communities, technical institutions, civil society, academia and the private sector. The country is slowly rebuilding technical capacities in many areas as it recovers from the 1991 state collapse and the consequent civil war and political unrest. Following the 2022 general elections, the Directorate of Climate Change has been elevated to the Ministry of Environment and Climate Change (MoECC). However, this relatively new ministry will require considerably capacity building to adequately implement NbS and hybrid solutions. Similar to other Somali Ministries, the MoECC is under-staffed at the national, Federal Member State (FMS) and district levels, with insufficient budgetary allocation and disbursements of funds. These institutions therefore do not have the appropriate resources to enable their personnel to execute their mandates and support adaptation, including mainstreaming the use of NbS to mitigate climate risks in economic development and livelihood activities.

33. In the relatively new states of Hirshabelle and South West, capacities are lower than the national average. Existing programmes such as SWALIM and the UNEP-DHI NbS programme emphasise gaps in adaptation and NbS implementation. For example, Beledweyne and Jowhar have as yet only received a 'light touch' approach[92] support from the Joint Programme on Local Governance (JPLG), whilst Afgooye is not yet a beneficiary. Although the JPLG developed an adaptation strategy plan for local governments, it does not have the required financial or technical resources to support the implementation of the strategy. Information remains limited to a few institutions, leading to low awareness and practical knowledge among policymakers and local authorities. This knowledge gap impedes effective NbS design and implementation, compounded by insufficient skilled staff trained in ecosystem management.

Barrier 2: Inadequate data and planning create challenges to the integration of landscape- and ecosystem-scale interventions with farm- or household-level interventions and benefits

34. Landscape-, ecosystem- and community-level planning for NbS and hybrid solutions in Somalia is challenging because of the scarcity of information and capacity for generating and using information for planning at the national and local levels. SWALIM and its local partners have undertaken many soil and water assessments, such as the 2014 mapping of breakage points along the Jubba and Shabelle Rivers, which is updated regularly and used to monitor flood risk[93].

35. Moreover, the MoEWR has produced a Shabelle River Basin Diagnostic Report[94] in 2021, which has started to address the data challenges in the country; however, the report acknowledged that the management of water resources is still considerably challenged by: i) insufficient up-to-date data; ii) insecurity in some parts of the system; and iii) inadequate individual, institutional and systemic capacity for water resources management.

36. The development of a catalogue of NbS measures for managing drought and floods — based on modelling of their efficacy for flood control — has contributed considerably to addressing these data gaps. Many NbS measures currently in use in Somalia are based on traditional knowledge. The Federal Government of Somalia acknowledges that the lack of data is still a primary challenge that affects the quality of research. This has led to insufficient site assessments and evaluation and management of sediment and silt processes. Inadequate catchment-level NbS planning also leads to land use conflicts between different clans. Several strategic planning documents, *inter alia* the NAPA and the National Biodiversity Strategy and Action Plan (NBSAP), acknowledge that the country's history of political instability has resulted in limited scientific knowledge and research into adaptation in the specific context of Somalia. This scarcity of academic expertise presents challenges to comprehensive planning in any sector. The UNEP-DHI NbS modelling report recommended that

[92] Under the 'light touch' approach, support for the establishment of functional structures and systems for local governance planning and programming is limited to: i) training on local government laws and the Public Expenditure Management (PEM) cycle; ii) the development of human resources and local leadership management; iii) the development of financial management including procurement; iv) urban planning; and v) rehabilitation of existing office and market infrastructure.

[93] SWALIM. 2025. Flood Risk and Response Information Management System (FRRIMS). https://frrims.faoswalim.org/rivers/breakages. Accessed on: 3 June 2025.

[94] Government of Somalia. 2022. Shabelle River Diagnostic and Strategic Action Plan. https://reliefweb.int/report/somalia/shabelle-basin-diagnosis-and-strategic-action-plan-2021. Accessed on: 3 June 2025.

the accuracy and efficiency of the selected NbS and hybrid solutions — particularly the combined V-shaped weirs and sand dams — were likely affected by this data scarcity. UNEP-DHI recommended that more data be collected and provided to refine the modelling at each *wadi* where project interventions are expected to be implemented. In Jowhar and Beledweyne, the development of district profiles and urban resilience plans was challenged by available data being outdated. Moreover, the rehabilitation of wetlands shows potential for flood control and ecosystem services, but this has not been implemented because of insufficient research into their effectiveness.

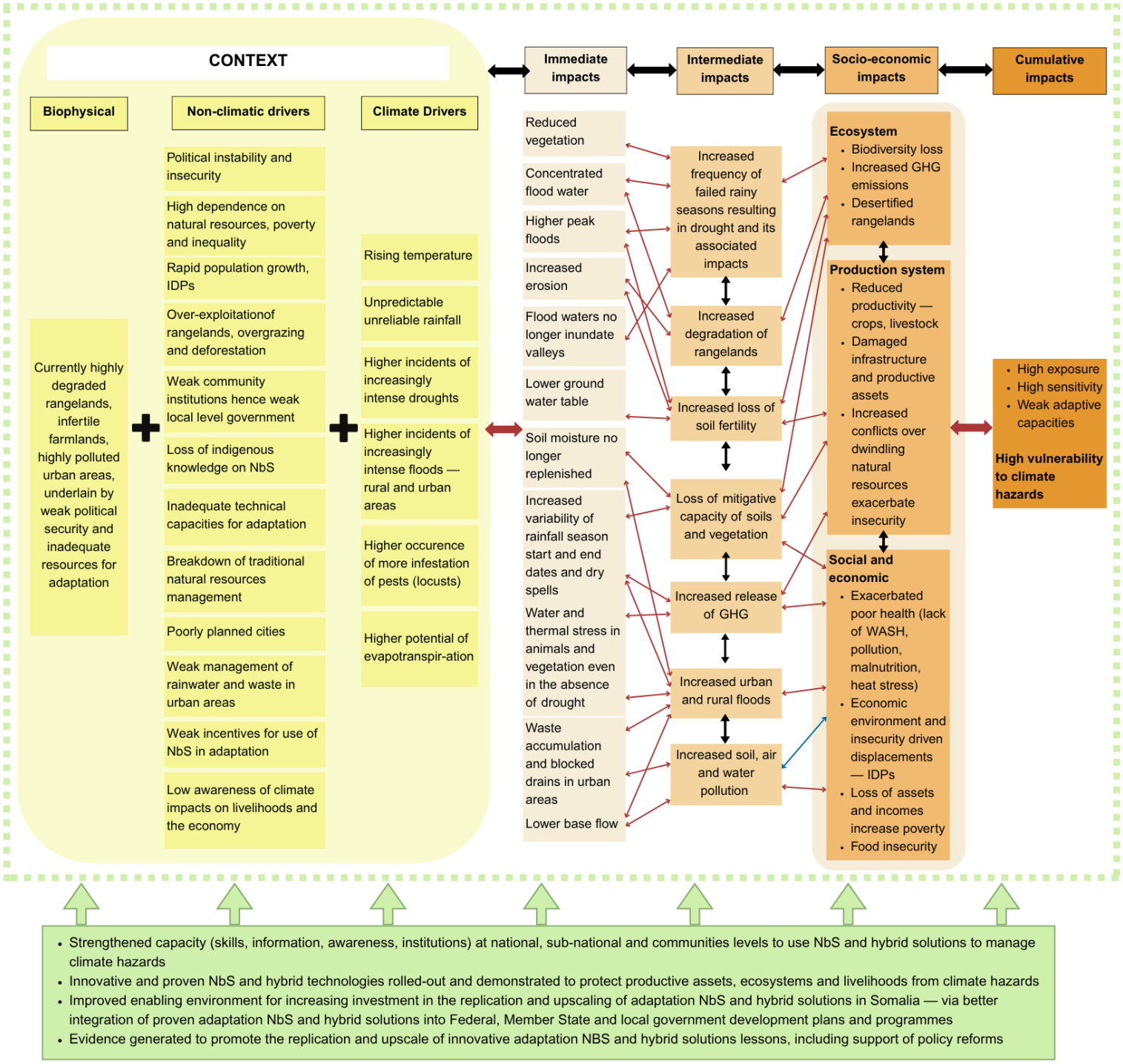

Figure 6. Problem Tree of climatic and non-climatic impacts in the Shabelle River Basin.

Barrier 3: Inadequate policies and incentive packages for the adoption and maintenance of NbS at all levels

37. Enabling policies are necessary for the effective implementation of NbS measures. Somalia does not have such adequate policies and incentives to promote NbS because of several decades of political instability (1991–2012) that have eroded and weakened governance structures. Although the country is recovering and formulating new policies, inappropriate institutional capacities and low awareness of NbS benefits impede their integration. Formal education programmes on climate change have not incorporated the role of NbS role in adaptation and natural resource management. This has compounded the loss of traditional knowledge necessary for activities in the development of agriculture and livestock-related activities, as well as urban and economic development. Consequently, the potential of NbS to mitigate climate hazards remains underused and attempts to implement these solutions are limited by insufficient technical and institutional support.

38. Despite global recognition of NbS benefits, their implementation remains limited in Somalia's urban areas. Recent efforts include resilience plans for cities, including Beledweyne and Jowhar, under programmes such as MIDINIMO II and initiatives by Sadar in collaboration with the United Nations Office for Disaster Risk Reduction and the Ministry of Humanitarian Affairs. However, transforming the potential of NbS into adaptation benefits depends on effective implementation, which requires adequate funding and governmental capacity.

39. Challenges to the implementation of NbS and hybrid solutions persist in recently established states — such as Hirshabelle and South West — because of their greater financial constraints and capacity gaps. Limited awareness, inter-sectoral collaboration, political will and technical skills further impede NbS integration into adaptation strategies. These challenges are compounded by socio-economic factors in informal settlements and IDP camps, where considerable poverty and marginalisation impede resilience-building efforts. Addressing these issues will require well-informed and comprehensive policies, improved collaboration across sectors and targeted capacity-building.

Barrier 4: Inadequate financial resources for upscaling and replicating proven and innovative NbS and hybrid solutions

40. Somalia — as a least developed country — is vulnerable to considerable financial, technical and capacity constraints in addressing climate change. According to the NDC, Somalia requires $58.5 billion to implement its adaptation priorities for 2021–2030. Limited government revenue constrains funding for long-term adaptation programmes, with resources frequently being redirected to short-term interventions for immediate disaster relief during droughts and floods.

41. Existing climate policies frequently lack implementation plans and funding. Most government institutions struggle to access multilateral and bilateral climate funding and attract private sector investment. NbS and hybrid measures to mitigate climate hazards are not prioritised within adaptation programs, receiving minimal budgetary resources. The mainstreaming of NbS in relevant sectors is also inadequate, further limiting financial support. Planning documents, such as the resilient plans for Beledweyne and Jowhar and the JPLG Adaptation Plans for local governments, remain largely unimplemented because of these financial constraints.

42. In the absence of effective interventions[95] to address these barriers, communities in the Shabelle River Basin are increasingly vulnerable to the impacts of climate change, including crop and livestock losses, riverbank erosion, reduced groundwater recharge and land degradation. The proposed project will improve the adaptive capacity of rural and urban communities across Beledweyne, Jowhar and Afgooye by effectively replicating and upscaling innovative NbS and hybrid interventions in the Shabelle River Basin. These are detailed in Part II, Section A: ‘Project components’.

Project Objectives

List the main objectives of the project.

43. The objective of this project is to enhance the adaptive capacity of rural and urban communities in the Shabelle river basin through the effective replication and upscaling of proven NbS and hybrid measures, innovative in the context of Somalia, that reduce the vulnerability of people, productive assets and livelihoods to floods and

[95] Refer to Part II, Section A: ‘Project components’ for a logical framework of interventions.

droughts. The project activities will directly benefit 20,840 people (4,358 women, 4,444 men and 12,038 youths) across the Beledweyne, Jowhar and Afgooye districts receiving targeted and high-intensity support[96]. Indirectly, it will reduce the risks of climate change impacts and hazards for the entire population of these districts, estimated at 1,351,193, whilst providing increased food security and protecting livelihoods. The project objective will be achieved through the implementation of four components. In achieving this objective, the project will overcome several barriers to NbS and hybrid solutions implementation for adaptation (Figure 7).

1. Build institutional capacity at national, state- and district-level to plan and implement NbS and hybrid solutions to reduce flood and drought risk.
2. Increase the resilience of vulnerable communities against floods and droughts by adopting innovative adaptation practices, tools and technologies.
3. Align policies, incentives and guidelines with the principles of NbS and hybrid solutions to create an enabling environment for adaptation planning.
4. Generate evidence on the performance, cost-effectiveness and scalability of innovative NbS and hybrid solutions to share lessons learned, raise awareness and inform policy and investment decisions.

44. The project interventions directly contribute to addressing several challenges identified in the Theory of Change as barriers to climate resilience, including: i) inadequate technical capacities of institutions; ii) insufficient data; iii) an inadequate enabling environment of policies and incentive structures; and iv) limited financial resources for NbS upscaling and replications. To overcome these challenges, the proposed project will strengthen institutional and community capacity through training programmes and the establishment of local committees, enabling participatory planning, implementation and monitoring of Adaptation Management Plans. These plans, developed for both rural sub-catchments and urban areas, will provide clear protocols for NbS and hybrid solutions, thereby addressing the gap in knowledge-based planning and ensuring technically sound and locally owned interventions.

45. At the implementation level, the project ameliorates data and policy gaps by introducing on-the-ground interventions such as combined sand dams and V-weirs, rangeland restoration, soil bunds, embankment reinforcement with revegetation, sustainable urban drainage systems (SUDs) and improved waste management, which will demonstrate the tangible adaptation benefits of NbS and hybrid solutions and improve local infrastructure. These actions are complemented by policy recommendations, incentive packages and knowledge-sharing initiatives to promote replication and upscaling, thereby countering barriers to enabling environments and financing. Gender-responsive awareness programmes and the documentation of lessons learned will further strengthen uptake and sustainability. Together, these solutions reduce exposure to floods and droughts, improve adaptive capacity across scales and generate co-benefits such as improved environmental health, social capital, women's empowerment and reduced emissions.

[96] Refer to Part II, Section E: Results framework for additional information on beneficiary estimation calculations. Direct and indirect beneficiary calculation based on AFB/EFC/14.6 Guidelines on core indicator methodologies.

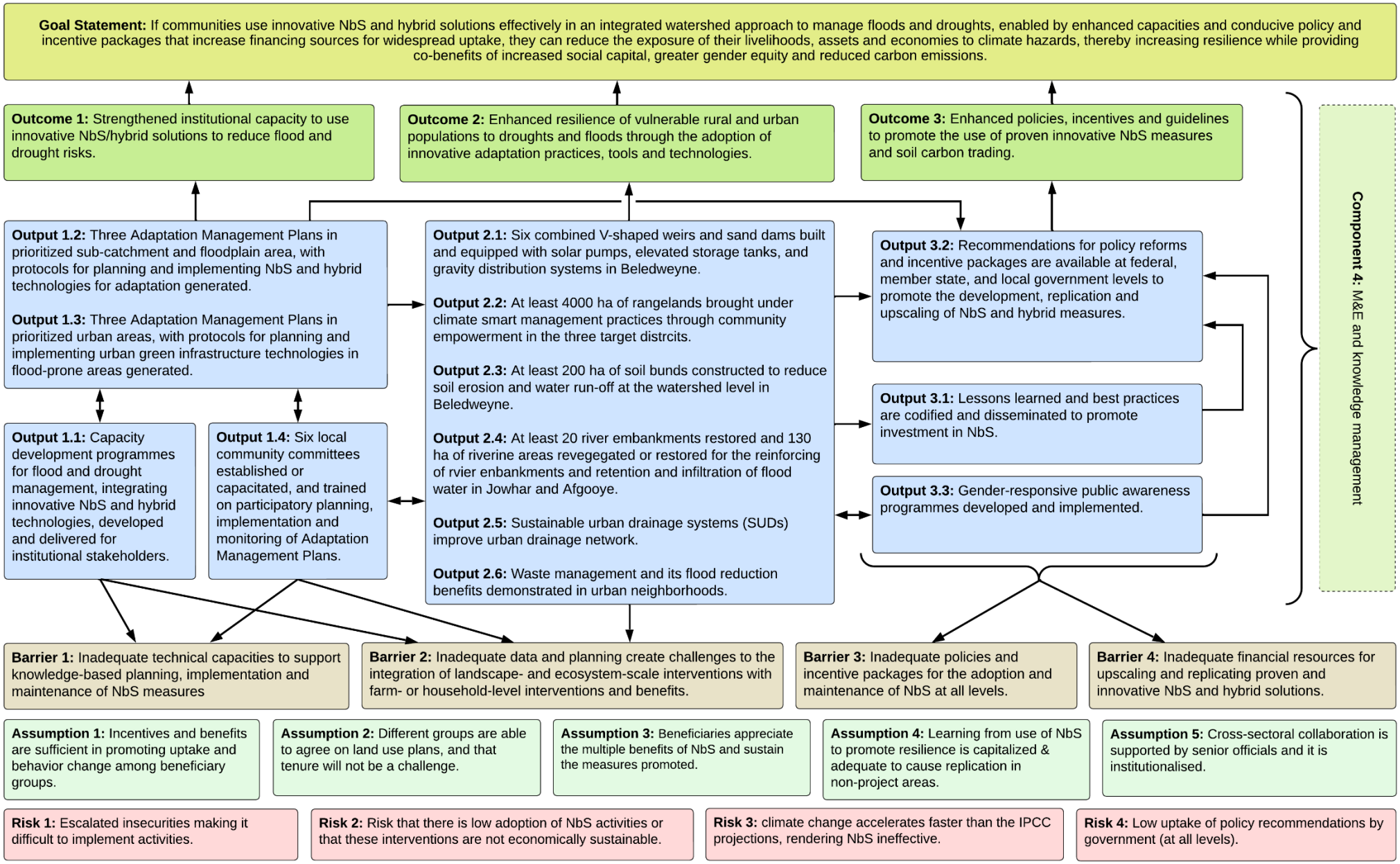

Figure 7. Theory of Change.

Project Components and Financing

46. The proposed project strategy will implement a set of NbS and hybrid interventions to increase the adaptive capacity and resilience of rural and urban communities in the Shabelle River Basin. This will be achieved through the effective replication and upscaling of proven NbS and hybrid measures that reduce vulnerability to floods and droughts. Specifically, the approach will: i) support the implementation of innovative sustainable urban drainage (SUDs) in urban areas, aligned with city resilience plans, to protect productive assets and livelihoods by reducing urban flooding; and ii) support integrated water resources and rangeland restoration and management across at least 4,000 ha in rural catchments to control flooding, surface run-off and soil erosion, improve infiltration and soil moisture, and create more resilient grazing lands.

47. These interventions include constructing V-shaped weirs and sand dams equipped with integrated solar-powered multi-purpose water systems, adopting climate-smart rangeland management practices such as pastoralist or farmer-managed natural regeneration, developing soil bunds and rehabilitation and revegetation of canals and embankments. Both the rural and urban interventions will contribute to buffer flooding while promoting water and soil conservation. Additionally, sand dams, innovative in the context of the Shabelle river, increase groundwater availability all year-round, improving access and reducing dependency on expensive water trucking during the dry seasons.

48. The project activity design is based on available knowledge, drawing on research and lessons learnt from other projects[97] and community knowledge and applying proven NbS and hybrid measures. These interventions will be supported by measures to build the capacity of local communities and relevant institutions in planning, implementation and monitoring, and to improve the enabling environment through policy reforms, incentives, and coordination. A knowledge management component will generate evidence and share lessons learnt, supporting adaptive management and promoting investment in NbS and hybrid solutions. This approach of strengthening institutional capacity, fostering community ownership and integrating interventions into plans and policies will facilitate the sustainability of implementation outcomes beyond the project's lifetime and the replication and upscaling to other areas. The project timeframe is scheduled to last from March 2026 to March 2031.

49. The proposed project is designed with a commitment to gender responsiveness and equitable access to project benefits. While acknowledging that the entire population of Somalia is vulnerable to the impacts of climate change, the project particularly recognises the high vulnerability of women, youth, IDPs and minority clans, who are disproportionately affected by climate-driven poverty and food insecurity. Cultural norms often limit women's social status, decision-making roles and access to resources, increasing their vulnerability to climate change hazards. To ensure that these groups are fully engaged and benefit equitably, the project implementation will be guided by a Stakeholder Engagement Plan (SEP), an Environmental and Social Safeguards Framework (ESMF) and a Gender Action Plan (GAP)[98].

50. The GAP, developed through inclusive consultations and a gender analysis, outlines specific actions to address barriers to women's participation, enhance access to resources, and increase their involvement in decision-making processes — ensuring that project interventions do not reinforce existing inequalities. These gender-responsive actions are closely aligned with the project's Stakeholder Engagement Plan, which provides a framework for meaningful consultation and sustained participation of all relevant stakeholders throughout the project cycle. Particular attention is given to engaging vulnerable and marginalised groups — such as women, youth, IDPs, persons with disabilities, and minority clans — by tailoring engagement strategies to suit their needs, including appropriate timings and culturally sensitive approaches to dialogue and feedback.

51. Additionally, the ESMF integrates safeguards to identify and mitigate potential risks and ensure that interventions do not lead to unintended negative consequences for communities or ecosystems. This includes social and environmental screening processes, risk management measures, and accountability mechanisms to ensure transparency and responsiveness to local concerns. Moreover, capacity building activities are embedded across these plans to empower community-based structures and ensure inclusive representation in project planning, implementation, and monitoring. Approaches such as Cash for Work (CfW), gender

[97] Refer to Part II, Section F: 'Consistency with other strategies'
[98] Refer to Annex 3: Stakeholder Engagement Plan and Annex 5: Gender Assessment and Action Plan for additional details.

mainstreaming, and the use of participatory tools will be employed to maximise equitable benefits and sustainable impact for all target groups. Table 5 describes the project components, indicative outputs and outcomes.

Table 5. Project components and financing.

Project Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
Component 1: Capacity building for the replication and upscaling of innovative NbS and hybrid technologies in Somalia	**Output 1.1:** Capacity development programmes for flood and drought management, integrating innovative NbS and hybrid technologies, developed and delivered for institutional stakeholders. **Output 1.2:** Three Adaptation Management Plans in prioritised sub-catchments and floodplain areas, with protocols for planning and implementing NbS and hybrid technologies for adaptation generated. **Output 1.3:** Three Adaptation Management Plans in prioritised urban areas, with protocols for planning and implementing urban green infrastructure technologies in flood-prone areas generated. **Output 1.4:** Six local community committees established or capacitated, and trained on participatory planning, implementation and monitoring of Adaptation Management Plans.	**Outcome 1:** Strengthened institutional capacity to use innovative NbS/hybrid solutions to reduce flood and drought risks	444,106
Component 2: Protection of productive assets and livelihoods by innovative and proven adaptation NbS and hybrid technologies	**Output 2.1:** Six combined V-shaped weirs and sand dams built and equipped with solar pumps, elevated storage tanks, and gravity distribution systems in Beledweyne. **Output 2.2:** Rangelands brought under climate-smart management practices through community empowerment in the three target districts. **Output 2.3:** Soil bunds constructed to reduce soil erosion and water run-off at the watershed level in Beledweyne. **Output 2.4:** River embankments restored and riverine areas revegetated or restored for the reinforcing of river embankments and retention and infiltration of flood water in Jowhar and Afgooye. **Output 2.5:** Sustainable urban drainage systems (SUDs) improve urban drainage network. **Output 2.6:** Waste management and its flood reduction benefits demonstrated in urban neighborhoods.	**Outcome 2:** Enhanced resilience of vulnerable rural and urban populations to droughts and floods through the adoption of innovative adaptation practices, tools and technologies	2,987,733
Component 3: Improved enabling environment for investment in the replication and upscaling of adaptation NbS and hybrid solutions in Somalia	**Output 3.1:** Lessons learned and best practices are codified and disseminated to promote investment in NbS. **Output 3.2:** Recommendations for policy reforms and incentive packages are available at federal, member state and local government levels to promote the development, replication and upscaling of NbS and hybrid measures. **Output 3.3:** Gender-responsive public awareness programmes developed and implemented.	**Outcome 3:** Enhanced policies, incentives, and guidelines to promote the use of proven innovative NbS measures and soil carbon trading.	566,451
Component 4: M&E and knowledge management (cross-cutting)			211,382
5. Project Execution cost			398,623
6. Total Project Cost			4,608,295
7. Project Cycle Management Fee charged by the Implementing Entity (if applicable)			391,705
Amount of Financing Requested			**5,000,000**

Projected Calendar

Table 6. Project timeline and milestones.

Milestones	Expected Dates
Start of Project Implementation	June 2026
Mid-term Review	November 2028
Project Closing	June 2031
Terminal Evaluation	October 2031

PART II: PROJECT/PROGRAMME JUSTIFICATION

A. Project components

Site selection

Site selection during project development

52. The proposed project will target rural communities and urban settlements within the Beledweyne, Jowhar and Afgooye districts, situated along the Shabelle River, selected because of their contributions to regional food security and the considerable vulnerability to climate change hazards of urban and rural populations. resilience-building interventions in different hydrological and socio-economic contexts. The site selection process used a multi-criteria assessment (MCA) informed by the technical assessment, ESMF and stakeholder consultations. A two-phased approach was applied: first, flood-prone urban and rural areas were identified based on hydrological data and screened for security and accessibility. Second, sites were prioritised based on vulnerability factors — including marginalised populations, climate-sensitive livelihoods, environmental degradation, poor drainage and public infrastructure — as identified through consultations. The assessment also considered complementarity with other initiatives[99], availability of baseline data, expected benefits and local capacity for implementation and maintenance. The resulting selection criteria are summarised in Table 7.

Table 7. Selection criteria for intervention sites.

Criteria	Description
Phase 1	
Flood and drought risk	Areas with historic or modelled drought and flood risk, including from *wadis* and river overflow, should be prioritised. These will be identified based on a combination of literature review, flood and drought impact data, spatial data and resilience plans. Residual flood modelling and mapping data[100].
Security and accessibility	Areas where secure access for implementation and monitoring is feasible should be prioritised.
Phase 2	
Topography and soil suitability	Spatial and soil data should be used to assess slope, infiltration capacity and land suitability for interventions such as infiltration wells, sand dams or vegetation buffers.
Vegetation and land degradation	District-level data on vegetation cover and degradation status is necessary to target sites for rangeland restoration or agroforestry. These will include rates of soil erosion on slopes and riverbanks.
Public services infrastructure	The presence of infrastructure necessary to support the community, including educational institutions, clinics, markets, religious buildings and transport facilities will increase the priority of sites for adaptation interventions because of their disproportionate value to communities.
Water availability and usage	The presence of irrigation canals, natural topographic depressions and water tables should inform assessment of the feasibility of water harvesting and aquifer recharge solutions.
Waste distribution	Areas where waste accumulates will be identified as priority sites for improved waste management to reduce flood risk.

[99] Refer to Part II, Section D: Consistency with other strategies and Part II, Section F: Project duplication
[100] Available from the FAO SWALIM platform

Community needs	Mapping of community priorities is necessary for the relevance and uptake of interventions. These will be assessed against projected benefits of selected interventions at specific sites.
Synergies with Other Projects	Sites should be chosen based on alignment with ongoing or planned initiatives for water risk management, including existing adaptation infrastructure, to maximise impact and cost-efficiency. Additionally, existing adaptation frameworks such as the urban resilience plans will inform site selection.
Capacity for implementation, monitoring and evaluation and maintenance	The presence of well-managed and capable local institutions, including CBOs, will be assessed to ensure that interventions are sustainable.

53. A technical assessment of flood and drought risk was undertaken during the project design phase to inform the selection of appropriate sites for NbS and hybrid solutions within the three target districts. The technical assessment comprised: i) rainfall runoff modelling for the catchment; ii) qualitative analysis of the available groundwater data to design site-specific solutions; iii) analysis of site topography, soils and geologic formations. These assessments drew on the Soil and Water Assessment Tool (SWAT) and Hydrologic Engineering Centre–Hydrologic Modelling System (HEC-HMS). Further inputs were provided by Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS), FAO Somalia Water and Land Information Management (SWALIM) soil and land cover datasets and a 12.5 m Digital Elevation Model (DEM) from Advanced Land Observing Satellite – Phased Array type L-band Synthetic Aperture Radar (ALOS PALSAR).

54. The three target districts have distinct watershed characteristics and are consequently vulnerable to different types of flooding. In Beledweyne, both riverine flooding from the Shabelle River and flash flooding from *wadis*, particularly in the Ceel-Gaal catchment, are prevalent[101]. Catchments in this district are clearly defined by the mountainous topography, including steep slopes and non-perennial streams (*wadis*)_ that flow through urban neighbourhoods before discharging into the Shabelle River. Available datasets to inform site selection include 12.5 m ALOS PALSAR DEMs, CHIRPS rainfall data and SWAT and HEC-HMS hydrologic models for Ceel-Gaal. Moreover, the FAO SWALIM database provides soil and land use data, supplemented by a 5–10 m resolution topographic dataset from 2007 along the floodplain, although coverage outside urban areas remains limited.

55. Hydrological modelling was conducted for the Ceel Gaal catchment in Beledweyne, which includes two major tributaries that converge upstream of the settlement. SWAT modelling simulated seasonal water balance, infiltration and evapotranspiration. In addition, HEC-HMS modelling of a 50 mm 24-hour storm event produced hydrographs showing rapid runoff peaks typical of flash floods. Based on these findings, two priority sites were identified for sand dam installation to reduce peak flows, limit sediment transport and enhance alluvial aquifer recharge. Design considerations included proximity to Ceel Gaal town, channel slope (<4%), bedrock contact and coarse sediment content. The two sand dams in the Ceel Gaal catchment are expected to yield extractable water volumes of 1,440–2,100 m³ per dam, depending on soil porosity (25–35%). A further four sand dams and V-weirs will be located close to Beledweyne town to enhance access to water supply during the dry seasons and to reduce flooding in the downstream urban areas.

56. In Jowhar, the landscape is characterised by relatively flat terrain, and flooding is intensified by the river's elevated banks relative to the surrounding land. The district includes paleochannels, natural depressions and inoperational flood management infrastructure, with water frequently becoming trapped within irrigation berms. Drainage generally occurs from northwest to southeast, but local flow patterns are highly variable. Although the area contains extensive irrigation networks and dikes that serve as hydrologic barriers, they are insufficient to prevent flash flooding. The predominantly clay and loam vertisols further limit infiltration potential. Global DEMs are inadequate for accurate flood modelling; therefore, detailed elevation data such as LiDAR will be necessary to support assessments. Available data include FAO SWALIM soil and land use datasets, remote sensing images of ponding and inundation, and historical cross-sections from FAO's 2007 mapping effort. Paleochannel analysis, historical flood imagery and canal system mapping were integrated with satellite imagery and flood extent data to identify priority areas for embankment reinforcement, vegetation buffers and wetland restoration. Site selection considered sedimentation risk, soil permeability and local drainage patterns.

[101] Riverine flooding in the project area occurs when the Shabelle River or its non-perennial wadi tributaries overflow, typically due to upstream rainfall. Embankment failures can cause widespread sheet flooding parallel to the river. Flash flooding results from intense rainfall overwhelming drainage capacity, especially in urban areas or where soils limit infiltration. For more information on flood dynamics in the Shabelle River Basin, refer to the key informant interview with the Food and Agriculture Organisation.

57. Afgooye also has flat topography and extensive irrigation canals and dikes that define watershed limits. However, these features do not prevent widespread flooding during the *Gu* and *Deyr* seasons, which is exacerbated by clay-rich vertisol soils that limit infiltration and promote surface ponding. Remote sensing and FAO data were used to map paleochannels and historical floodplains north of the Shabelle River, identifying depressions where floodwaters stagnate. The flat alluvial plain and complex network of paleochannels complicate drainage, and hydrological modelling is hindered by the coarse resolution of global DEMs. Minor elevation differences in the landscape significantly affect runoff direction and accumulation, yet the absence of high-resolution LiDAR data constrains accurate delineation of drainage pathways and depressions needed for nature-based solution planning. Available datasets include 1:250,000 scale soil maps, historical FAO SWALIM topographic data and satellite imagery for flood extent mapping.

58. The findings from the technical assessment support the prioritisation of sites for NbS and hybrid solutions interventions across the three districts. The selection of NbS and hybrid solutions interventions within the rural and urban contexts in the project districts was informed by district-specific intervention selection criteria (Table 8). Where existing interventions overlap with project activities, the proposed project has focused on upscaling these interventions

Table 8. District-specific considerations informing selection of interventions.

General criteria	Intervention selection considerations	Descriptions
Beledweyne		
Flood and drought risk	Hydrological modelling and infrastructure	Available high-resolution hydrological and flash flood models should inform placement of flood control infrastructure such as dykes and sand dams.
Flood and drought risk	Presence of upstream *wadis*	The *wadis* on the northeast outskirts of the city with the greatest discharge during floods should be prioritised for the construction of sand dams and diversion canals.
Livelihood linkages	Livestock trade	As Beledweyne is a regional trade hub for livestock, it is suitable for rangeland rehabilitation that will increase livestock productivity.
Synergies with Other Projects	Urban planning	Available UN-developed master plans should support integration of NbS and hybrid solutions into broader urban development strategies.
Jowhar		
Topography and soil suitability	Floodplain and depressions	The presence of downstream rainfed areas and natural depressions with potential for water storage and aquifer recharge should be considered.
	Paleo river systems	There exists an opportunity to use a paleo river course and seasonal depressions for multi-functional water management.
Synergies with Other Projects	IOM resettlement areas	Coordination with IOM on relocation areas should enable synergistic design of NbS that reduce flood risk and restore rangelands.
Community needs	Land productivity	Fertile soils and arable land make Jowhar suitable for combined rangeland restoration and agroforestry interventions.
Synergies with Other Projects	Urban planning	Available UN-developed master plans should support integration of NbS and hybrid solutions into broader urban development strategies.
Afgooye		
Waste distribution	Waste management requirements	Waste accumulation in this district presents an opportunity to demonstrate the use of improved waste management for flood control.
Flood and drought risk	Flooding and drought	Interventions in Afgooye should address both riverine flooding and drought risk by rehabilitating embankments and promoting aquifer recharge.
Community needs	Conflict sensitivity	The potential for using social fencing and community bylaws to manage competing water demands between farmers and pastoralists is high in Afgooye.
Water availability and usage	Suitability for wells	Peri-urban areas are suitable for infiltration wells and solar-powered protected wells, particularly where water tables are high.
Water availability and usage	Irrigation	Extensive riverine crop- and agropastoral lands characterise Afgooye as a priority area for canal rehabilitation and rangeland management.

59. Across all districts, stakeholders — including women, youth, minority clans and internally displaced persons (IDPs) — called for inclusive planning mechanisms, consideration of land and water access dynamics and

integration with existing district development plans. These findings have been incorporated into the site selection criteria and will be used to guide project implementation.

Proposed NbS interventions

60. The outcomes of the technical assessments and stakeholder consultations conducted during the project development phase enabled the identification of appropriate NbS and hybrid solutions tailored to each specific site context. These are summarised in Table 9 below[102].

Table 9. NbS and hybrid interventions recommendations based on technical assessment.

District	NbS Recommended	Benefits	Feasibility	Timeline
Beledweyne	Combined sand dams with V-shaped weirs in six priority locations are proposed. Two will be situated across *wadis* at Ceel-Gaal Village. The sand dams will include wingwalls connected to the side slopes, with a plastic liner at the base to prevent seepage and infiltration. A further four dams will be close to Beledweyne town for water supply and reduction in frequent flooding.	• Increase aquifer recharge and available water for domestic and livestock use • Improve flood management • Promote vegetation growth along the riverbank due to increased water table	High	10 months (starting in the *Deyr* season will enable the work to be completed effectively)
Beledweyne	Soil bunds in catchments east of Beledweyne town to promote infiltration and reduce soil erosion. Initially, one catchment will be evaluated and monitored prior to expanding to other catchments in the area. The pilot location will be selected based on the community needs and input. The community will monitor and maintain the site. Soils bunds are not feasible in Jowhar (and likely Afgooye) because of the flat topography and abundance of farmland. For erosion-vulnerable areas in these districts, revegetation is a more appropriate NbS intervention. In Afgooye, west of Afgooye Town distant from agricultural areas, the potential for soil bunds will be evaluated once detailed elevation data are available.	• Increase infiltration, improve soil moisture and reduce peak discharges accumulated along the *wadis*. • Protect vegetation along the slopes • Improve rangeland yields	High	1 year
Beledweyne	Sustainable urban drainage using swales adjacent to roads. Implementation will be dependent on whether ownership of land adjacent to the roads can be secured. Culverts will be required at intersections with other roads to convey the runoff where infiltration is not feasible. Detailed LiDAR topographic data will be required to assess the ideal location for swale design and the ultimate outfall such as retention facilities — or the Shabelle River after pollutants are removed.	• Reduce urban flooding and concentrating runoff along roadside swales that promote linear infiltration.	Low	2 years
Beledweyne, Jowhar and Afgooye	Rangeland regeneration by revegetating selected areas using native plants adapted to the arid climate.	• Grazing land for pastoralists • Ecological restoration and improved wildlife access to resources • Reduced flooding due to river overflowing	Medium	1 year
Jowhar	Restore 25 km of the paleochannel east of Jowhar to store flood runoff when the channel overflows. Once a positive slope is achieved, appropriate seeds and saplings will be planted along its bank to minimise siltation.	• Improved flood storage • Ecological benefits and growth of plants	Low (for >10 km of paleochannel rehabilitation)	3 years
Jowhar and Afgooye	The Shabelle River embankment will be reinforced with gabions at locations of bends, adding a cutoff wall and low flow pipe to extract surface water. A gate will remain in place during high flow events, and an impermeable barrier within the pipe portion will prevent seepage. At locations where no pipe will be installed, fine soil will be added to prevent seepage. The embankment soil will be	• Prevent flooding from riverbank breakages • Promote vegetation growth along the riverbank	Medium (7 locations in Jowhar and 13 in Afgooye)	2 years

[102] This table is a summary of the findings of the hydrological and geospatial analysis performed during project implementation. The full report of these analyses is available upon request.

	recompacted around the breakage and appropriate vegetation will be planted.			
Jowhar and Afgooye	Urban drainage capture using a grass lined swale adjacent to the road (SUDs) to capture runoff and discharge to a collection point. This collection will be a retention facility west or east of the Shabelle River in Jowhar, whereas in Afgooye the water will infiltrate or be pumped from the collection point.	• Decrease runoff velocity using grass lining, thereby preventing erosion and improving water quality • Convey the runoff away from residential areas to low-lying areas east or west of Jowhar Town	Low	2 years

Site selection during implementation

61. The site validation process will be refined during implementation using an adaptive management approach that allows planning decisions to respond to emerging risks, changes in access and evolving stakeholder dynamics. This flexibility is central to the project's implementation strategy, given the socially and politically fragile context of the target districts.

62. During project implementation, site selection will be refined through the development and validation of local planning instruments. Specifically, three rural Adaptation Management Plans (Output 1.2) and three urban Adaptation Management Plans (Output 1.3) will be prepared to guide the design, siting and implementation of nature-based and hybrid solution interventions in rural and urban sites. These plans will incorporate updated hydrological, topographical, socio-economic and institutional data gathered through fieldwork, stakeholder consultations and participatory mapping. Site-specific safeguards screening will be applied once locations are identified, in accordance with UNEP's Environmental, Social and Sustainability Framework (ESSF) and the Adaptation Fund's environmental and social policy. In addition, the Safeguard Risk Identification Form's (SRIF's) screening component will be reevaluated for each selected site to ensure that safeguards are appropriate to the site's specific context. Conflict analysis will be incorporated into the development of these Adaptation Management Plans, informing siting, sequencing and mitigation strategies. Where risks of conflict or exclusion are identified, site-level mitigation measures — such as Livelihood Action Plans — will be applied in line with the ESMF.

63. A participatory validation process will be conducted in each district, led by Sadar and district authorities and supported by community committees established under Output 1.4. These committees will validate local priorities in project implementation. These committees will also support monitoring, information dissemination and the redress of grievances, in coordination with district authorities and Sadar. Their composition will reflect women, youth, internally displaced persons (IDPs) and minority clans, in line with the project's commitment to inclusive governance[103].

64. The site validation process will include safeguards screening for Unspecified Sub-Projects (USPs) using UNEP's Safeguards Risk Identification Form, with additional site-specific mitigation measures developed where needed[104]. This screening will include an assessment of conflict sensitivity, focusing on potential tensions related to land access, natural resource use or exclusion of vulnerable groups. Where interventions may cause economic displacement, conflict or restricted access to resources, Livelihood Action Plans (LAPs) will be prepared in consultation with affected communities. These LAPs will outline mitigation and livelihood support options ranging from negotiated access agreements to transitional support or revised siting. The LAP requirement is triggered through safeguards screening and validation workshops and will follow the procedural guidance in the Livelihood Action Framework[105]. As outlined in Annex 3: Stakeholder Engagement Plan (SEP), any additional community and stakeholder engagement required during project implementation will adhere to established safeguards procedures[106]. Inclusive consultation methods will be prioritised, including the use of Somali language materials and oral communication channels where appropriate. This approach ensures that the site selection process remains context-responsive, inclusive and aligned with environmental and social safeguards throughout implementation.

[103] Refer to Annex 3: Stakeholder Engagement Plan
[104] Refer to Annex 4: Environmental and Social Management Framework
[105] Refer to Appendix 2 in Annex 4: Environmental and Social Management Framework
[106] Refer to Annex 4: Environmental and Social Management Framework

Project description

65. To achieve its objective, the proposed project will: strengthen institutional and technical capacities to plan and implement NbS and hybrid solutions (Component 1); implement a portfolio of targeted NbS and hybrid interventions in Beledweyne, Jowhar and Afgooye districts (Component 2); enhance monitoring systems and improve the generation and dissemination of knowledge on the performance of these solutions (Component 3); and create an enabling policy and financial environment to support the sustained replication and upscaling of NbS across Somalia (Component 3). The activities proposed under each of these components are detailed below.

Component 1: Capacity building for the replication and upscaling of innovative NbS and hybrid technologies in Somalia

Outcome 1: Strengthened institutional capacity to use innovative NbS and hybrid solutions to reduce flood and drought risks

66. The vulnerability of Somalia's communities to the adverse impacts of floods and droughts is compounded by limited institutional and technical capacity across all levels of government to design, implement and scale nature-based and hybrid solutions. Ministries at federal, federal member state and district levels, as well as academic and research institutions, have limited technical competencies such as hydrological modelling, integrated landscape planning and spatial data analysis. These capacity constraints inhibit the mainstreaming of NbS into development plans and reduce the potential for long-term resilience building.

Output 1.1: Capacity development programmes for flood and drought management integrating innovative NbS and hybrid technologies developed and delivered for institutional stakeholders.

67. Institutional capacity gaps in appropriate government ministries will be assessed by structured consultations and document reviews. Based on identified needs, the project will identify existing training programmes and develop and deliver training programmes for management and technical staff and produce technical protocols to standardise the planning and implementation of NbS and hybrid solutions. By capacitating institutions at the federal, state and district level Output 1.1 contributes to addressing limited institutional capacity identified under Barrier 1. This capacity-building will be reinforced using academic partnerships to institutionalise climate adaptation knowledge and promote inter-institutional and inter-sectoral collaboration for upscaling NbS in Somalia.

Activity 1.1.1: Develop and implement a capacity-building programme for Federal, State, and District level institutions on NbS and hybrid solutions planning and implementation based on capacity assessment findings.

68. The institutional capacity of six ministries — the Ministry of Finance and specifically the National Climate Fund (NCF), the Ministry of Environment and Climate Change (MoECC), Ministry of Energy and Water Resources (MoEWR), Ministry of Livestock, Forestry and Range (MoLFR), Ministry of Agriculture and Irrigation (MoAI), Ministry of Planning, Investment and Economic Development (MoPIED) — to plan and implement NbS will be assessed. This will involve focus group discussions (FGDs) and key informant interviews (KIIs) with two federal representatives of each of these ministries. Topics to be assessed will include: i) awareness of the benefits of NbS and hybrid solutions within the ministry; ii) skills and knowledge gaps for planning and implementation of NbS and hybrid solutions, and iii) existing structures and capacity within these ministries to disseminate information and skills to federal member state and district authorities, for example using a train-the-trainer model.

69. These consultations will be complemented by a desktop review of recent published and unpublished reports developed by these five ministries to determine: i) the extent to which NbS and hybrid solutions have been implemented in the past, whether implementation has generated the expected benefits and whether interventions have remained operational over the expected lifespan; ii) context-specific best practices from successful implementation and lessons learned from partially or unsuccessful implementation; and iii) the extent to which NbS and hybrid solutions are included in current plans for projects by these ministries.

70. Additional consultations — including FGDs and KIIs — will be held with academic professionals at Somalia national universities such as the City University of Mogadishu and the University for Peace, research institutions

and the Food and Agriculture Organisation (FAO)- SWALIM- to identify hydrological data gaps in the Shabelle river basin. These consultations will include a one-day workshop in Mogadishu, as well as in-person or online interviews. The objective will be to determine: i) the types, scale and resolution of hydrological data required to plan NbS and hybrid solutions; the types, scale and resolution of hydrological data currently available, for example by SWALIM; and iii) the skills development and knowledge generation required to fill potential gaps in the available data.

71. The outcomes of the ministerial consultations, desktop review of ministry reports and academic consultations will be synthesised into a gap analysis report that identifies institutional and technical capacity gaps in federal, federal member state and district ministries and academic institutions and assigns these priorities. This report will be made available in English and Somali hardcopies to ministerial representatives at federal, federal member state and district levels. The report will also be uploaded to the knowledge management platform developed under Activity 3.1.3.

72. Based on this gap analysis, training manuals describing data and modelling skills requirements to plan and implement NbS and hybrid solutions will be developed to train ministerial management staff. These manuals will be designed to support ministerial staff in building capacity within their institutions, including identifying capacity gaps and sources of training. Free online courses that cover the skills emphasised in the gap analysis will be identified and included in the training manuals.

73. The training manuals will be printed and distributed to ministerial representatives at a two-day training workshop in Mogadishu. The participants will include the ten federal representatives attending the gap analysis workshop, as well as two representatives from each federal member state-level ministry in Hirshabelle and South West, for a total of 30 participants. In addition, representatives of the Somali Climate Action Platform (SCAP) — and potentially other non-governmental organisation (NGO) or Civil society organisation (CSO) representatives to be identified during implementation — will attend. This workshop will familiarise the ministerial management staff with the technical protocols and training manuals to facilitate their use in building ministerial capacity. The training manuals will also be made available on the knowledge management platform developed under Activity 3.1.3 during the second year of implementation.

Activity 1.1.2: Develop protocols for NbS and hybrid solutions applicable to the context of Somalia.

74. In addition to the review of ministerial reports under Activity 1.1.1, best practices and lessons learned during the development and implementation of other adaptation projects will be assessed. These will include projects developed by international development agencies, NGOs, research institutions and community-based organisations (CBOs), if applicable. Projects in Somalia, other developing nations within the Horn of Africa such as Djibouti, Eritrea and Ethiopia, and other arid countries prone to droughts and floods will be included. These best practices and lessons learned will: i) identify NbS and hybrid solutions with the greatest potential for generating climate change adaptation benefits in the Somali context; ii) support the generation of an evidence base to facilitate the replication and upscaling of NbS and hybrid solutions in Somalia; and iii) inform the implementation of interventions under the proposed project to ensure long-term benefits are achieved and distributed equitably.

75. Similarly, the academic consultations under Activity 1.1.1 will be supplemented by a desktop review of the hydrological and geospatial data required for NbS and hybrid solutions design and implementation, as well as appropriate methods of analysing these data. Moreover, the data and methodological requirements for establishing carbon credit projects in the Somali context will also be identified to support Activity 4.1.3.

76. Together with best practices and lessons learned from previous NbS and hybrid solutions projects in Somalia, these desktop reviews will be synthesised to produce a set of technical protocols for the standardised design and implementation of identified NbS and hybrid solutions and their data and methodological requirements. Protocols will include procedures for site evaluation, selection and analysis, criteria for selection of interventions and step-by-step guidance on implementation, with particular focus on ensuring equitable benefit distribution to women and other marginalised and vulnerable groups. The protocols will be updated iteratively as project interventions are implemented and at project closure to enable lessons learned during implementation to inform the design and implementation of future NbS and hybrid solutions initiatives. These protocols will be made available in English and Somali hardcopy to ministerial representatives at federal, federal member state and

district levels, as well as on the knowledge management platform developed under Activity 3.1.3.

Activity 1.1.3: Develop university modules in collaboration with Somalia national universities to disseminate NbS knowledge captured in Activity 1.1.2.

77. The Somalia national universities will be engaged by the Executing Entity to develop a master's coursework module for the existing course 'Master of Arts in Sustainable Water Resources Management and Climate Change Adaptation' during the first two years of implementation. This module will outline the protocols for planning and implementing NbS developed in Activity 1.1.2. and include training for the operation of an online knowledge management platform developed under Activity 3.1.3.

78. A short undergraduate module covering similar content to the Master's module will be developed for an appropriate course identified by the Somalia national universities. In addition, a short course to teach geospatial and hydrological modelling skills identified under Activity 1.1.2 — particularly in the Somali context — will be developed and opened for enrolment, but will not be compulsory for the completion of the master's programme. This course will be able to support training for both existing ministerial staff and new students enrolling in the undergraduate and master's programmes.

79. Twelve students comprised of management staff from the ministries that will have attended the training manual workshop under Activity 1.1.1 — as well as potentially personnel of NGOs and CSOs implementing NbS and hybrid solutions in Somalia — will be enrolled in the master's course in the third year of implementation[107]. Both the master's and undergraduate courses will be open for enrolment to the public, providing the opportunity to train the next generation of ministerial personnel, academics and practitioners from non-government organisations (NGOs) within the country. In this way, NbS knowledge and skillsets can be disseminated within Somalia beyond the project lifespan.

Output 1.2: Three Adaptation Management Plans in prioritised sub-catchment and floodplain area, with protocols for planning and implementing NbS and hybrid technologies for adaptation generated.

80. Adaptation Management Plans will be developed for rural sites in each of the three target districts to guide the effective implementation of rural NbS and hybrid solutions. These plans will integrate technical assessments, cost-effectiveness and conflict analyses to ensure that interventions are technically sound and socially acceptable. Validation workshops will ensure full stakeholder buy-in. Conflict sensitivity will be integrated into the development of these rural Adaptation Management Plans (Box 1), with analysis used to reduce tensions between clans, as well as between settled farmers and nomadic pastoralists. By providing evidence-based plans for adaptation management, these rural Adaptation Management Plans will contribute to addressing inadequate data and planning for NbS identified under Barrier 2.

[107] Adaptation Fund financing delivered under this project will include the academic fees for all twelve master's students, comprising US$5,000 per student across the two-year master's programme. All non-academic costs during this period, including living costs, travel and extracurriculars must be covered privately by these students or by the ministries or NGOs/CSOs of which they are a member.

Adaptation Management Plans will be structured into the following sections:

- Executive summary
- The EARNSS project
- AMPs in the context of national, state and district policies and frameworks
- Drought risk at territorial, city and settlement scale
  - Drought exposure
  - Drought vulnerability
  - Drought adaptive capacity
- Flood risk at territorial, city and settlement scale
  - Flood exposure
  - Flood vulnerability
  - Flood adaptive capacity
- Problem statement and proposed solution
- Resilience plan at territorial, city and settlement scale
  - Potential NbS interventions, including their structure and potential benefits
  - Compliance with technical standards
  - Siting of NbS interventions
  - Operations and Maintenance requirements
  - Governance responsibilities
  - Funding sources for AMP implementation
- Monitoring and evaluation (M&E)
  - Project indicator measurements
  - M&E institutional responsibilities

Box 1. Structure of rural and urban Adaptation Management Plans

Activity 1.2.1: Conduct technical assessments and cost-effectiveness analysis to guide the development of three Adaptation Management Plans in prioritised sub-catchment and floodplain areas.

81. Hydrological, land use and topographic data[108], along with on-site field assessments, will be used to assess the flood attenuation potential of NbS and hybrid solutions in priority catchments[109] and refine the selection of sites for NbS and hybrid interventions, including combined sand dams and V-shaped weirs, rangeland management, construction of soil bunds and revegetation of riverbanks — as well as the Jowhar paleochannel — within the target districts. A cost-effectiveness analysis will be conducted to evaluate the economic viability of the proposed interventions and design options. This analysis will support the development of Adaptation Management Plans under Activity 1.2.2 and contribute to the establishment of a knowledge base on implementing NbS and hybrid solutions in the Somali context, facilitating their replication and upscaling.

Activity 1.2.2: Develop three Adaptation Management Plans in prioritised sub-catchment and floodplain areas to guide the planning and implementation of NbS and hybrid measures in target districts.

82. Site selection for all NbS and hybrid interventions to be implemented under Outputs 2.1–2.4, as well as the ESS considerations relevant to those sites (see Annex 4), will be integrated into a set of three draft Adaptation Management Plans. These Plans will be developed in the first and second years of implementation and will detail sites, site selection rationale and site-specific protocols adapted from the technical protocols developed under Activity 1.1.2 to guide the implementation of interventions in rural sites. Moreover, operations and maintenance (O&M) arrangements and protocols for all project interventions throughout the project lifespan will be outlined in these Adaptation Management Plans[110]. The Safeguard Risk Identification Form's (SRIF's) screening component will be reevaluated for each site for these interventions during the development of the rural AMPs to ensure that safeguards are appropriate to the site's specific context. In addition, the exit strategy for the project will be designed with the development of the AMPs and will be included in draft versions — to be revised throughout the project lifespan as necessary (see Part II, Section M: Project sustainability). During the project's lifespan, governance of the rural AMPs will be allocated to district authorities, while monitoring of AMP implementation will be the responsibility of district authorities with the input of community committees and support from PMU technical staff.

[108] These assessments will acquire and use Digital Surface Model World DEM2 for Beledweyne and Afgooye where appropriate open source data are not available from SWALIM.
[109] Assessment results will also inform the development of reports on the performance and cost-effectiveness of NbS and hybrid solutions implemented in the project under Activity 3.1.2.
[110] Refer to Part II, Section M: Project Sustainability for details on the project exit strategy that will be developed to ensure continued O&M following project completion.

83. The development of these rural Adaptation Management Plans will also include a suitability assessment undertaken in collaboration with the University of Mogadishu to select appropriate species to be grown in district nurseries for enrichment planting and revegetation under Outputs 2.2 and 2.4. Species will be selected based on: i) resilience under current and projected climatic conditions; ii) ease of cultivation; iii) effectiveness at achieving NbS benefits such as erosion control and increased infiltration; and iv) potential co-benefits as cash and food crops to provide incentives for adoption by communities.

84. The AMPs will also include details on ownership of NbS technologies and funding of O&M and repairs. Beginning immediately after project inception, iterative discussions between the PMU and ministries will clarify the details of the exit strategy. The PMU will sign Memoranda of Agreement (MoAs) with the state-level Ministries of Energy and Water Resources (MoEWRs) during the development of the AMPs. The PMU will confer ownership of the combined sand dams and weirs implemented under Output 2.1 — as well as the water distribution systems incorporated with them — and the low-flow pipes and associated embankments installed under Output 2.3 — to the MoEWRs. These MoAs will detail the responsibilities of MoEWRs and community committees in operating and maintaining water infrastructure. For instance, it is expected that the state-level ministries will support communities on the oversight and maintenance of this infrastructure. During the above-mentioned discussions, the PMU will explore the option of the ministries contributing to the O&M costs after project closure as part of the handover of this infrastructure. In addition, the option of involving the private sector in the management of O&M and repair funds will be explored.

Activity 1.2.3: Host a validation workshop to assess the plans developed under Activity 1.2.2 and validate priority sites for implementing NbS and hybrid solutions.

85. A one-day validation workshop for the draft Adaptation Management Plans will be held in Mogadishu to present the Plans to the federal and federal member state-level ministerial representatives that participated in the previous workshops, provide opportunity for comment from and obtain high-level buy-in. During this workshop, state-level representatives of the MoECC and MoEWR will formally sign off on the rural Adaptation Management Plans. District ministerial representatives and other local authorities and stakeholders will be consulted during a set of further validation workshops that will be held in the district towns of the target districts to facilitate more context-specific feedback and obtain local buy-in, with district-level representatives of the MoECC and MoEWR giving official sign-off. Feedback from these four validation workshops (one federal and three district-level workshops) will be integrated into the rural Adaptation Management Plans to ensure they align with national priorities and are appropriate to the local context. The finalised rural Adaptation Management Plans will be made available in English and Somali language hardcopy to ministerial representatives at federal, federal member state and district levels as well as on the knowledge management platform developed under Activity 3.1.3 during the second year of implementation.

Output 1.3: Three Adaptation Management Plans in prioritised urban areas, with protocols for planning and implementing urban green infrastructure technologies in flood-prone areas generated.

86. Three Adaptation Management Plans in prioritised urban areas of Beledweyne, Jowhar and Afgooye towns will be developed in alignment with the existing Urban Resilience Plans (in Beledweyne and Jowhar) to facilitate the planning and implementation of NbS and hybrid solutions. These plans will focus on sustainable urban drainage systems (SUDs) and waste management, and will be based on hydrological assessments, land use and land ownership aspects and cost-effectiveness considerations. Conflict sensitivity will be integrated into the development of these urban Adaptation Management Plans (Box 1), with analysis used to reduce tensions in densely populated, informal or IDP settlements. By providing evidence-based plans for adaptation management, these urban Adaptation Management Plans will contribute to addressing inadequate data and planning for NbS identified under Barrier 2.

Activity 1.3.1: Conduct technical assessments and cost-effectiveness analysis to guide the development of three Adaptation Management Plans in prioritised urban areas.

87. Hydrological, land use and topographic data[111], along with on-site field assessments and community

[111] These assessments will acquire and use Digital Surface Model World DEM2 for Beledweyne and Afgooye where appropriate open source data are not available from SWALIM.

consultations will allow the identification of areas of flood water accumulation in the prioritized urban areas where SUDs— including retention ponds, bioswales and improved waste management — are viable and have the greatest potential to contribute to urban flooding reduction. Further topographical survey of specific selected areas will be conducted under activity 2.5.1 to inform the SUDs designs.

88. A cost-effectiveness analysis will be conducted by a financial specialist to evaluate the economic viability of the proposed interventions. This analysis will support site selection and implementation planning under Activity 1.3.2 and contribute to the establishment of a knowledge base on implementing urban NbS and hybrid solutions in the Somali context, facilitating their replication and upscaling.

Activity 1.3.2: Develop three Adaptation Management Plans for the implementation of green infrastructure and waste management in the target districts based on the gaps identified under Activity 1.1.1.

89. Site selection for all NbS and hybrid solutions interventions to be implemented under Outputs 2.5 and 2.6, as well as the ESS considerations relevant to those sites (see Annex 4), will be integrated into a set of three draft Adaptation Management Plans. These Plans will be developed in the first and second years of implementation and will detail the sites, site selection rationale, and site-specific protocols adapted from the technical protocols developed under Activity 1.1.2 to guide the implementation of interventions in urban sites. Moreover, O&M arrangements and protocols for all project interventions throughout the project lifespan will be outlined in these Adaptation Management Plans[112]. The Safeguard Risk Identification Form's (SRIF's) screening component will be reevaluated for each site for these interventions during the development of the urban AMPs to ensure that safeguards are appropriate to the site's specific context. In addition, the exit strategy for the project will be designed with the development of the AMPs and will be included in draft versions — to be revised throughout the project lifespan as necessary (see Part II, Section M: Project sustainability). During the project's lifespan, governance of the urban AMPs will be allocated to district authorities, while monitoring of AMP implementation will be the responsibility of district authorities with the input of community committees and the support of PMU technical staff.

90. The AMPs will also include details on ownership of NbS technologies and funding of O&M and repairs. Beginning immediately after project inception, iterative discussions between the PMU and ministries will clarify the details of the exit strategy. The PMU will sign Memoranda of Agreement (MoAs) with the state-level Ministries of Energy and Water Resources (MoEWRs) during the development of the AMPs. The PMU will confer ownership of the combined sand dams and weirs implemented under Output 2.1 — as well as the water distribution systems incorporated with them — and the low-flow pipes and associated embankments installed under Output 2.3 — to the MoEWRs. These MoAs will detail the responsibilities of the state-level MoEWRs in operating and maintaining water infrastructure. For instance, it is expected that the state-level ministries will support communities on the oversight and maintenance of this infrastructure. During the above-mentioned discussions, the PMU will explore the option of the ministries contributing to the O&M costs after project closure as part of the handover of this infrastructure. In addition, the option of involving the private sector in the management of O&M and repair funds will be explored. The MoAs will include courses of action should their terms be violated by the ministries. While the capacity building activities of the proposed project are intended to capacitate ministries for these responsibilities, ministries should also demonstrate their capacity to manage the project infrastructure by providing CVs of their proposed responsible members.

Activity 1.3.3: Host a validation meeting to assess the plans developed under Activity 1.3.2 and confirm priority urban areas for urban green infrastructure and waste management.

91. Following the validation workshop under Activity 1.2.3, a similar one-day validation workshop for the draft urban Adaptation Management Plans will be held in Mogadishu to present the Plans to the federal and federal member state-level ministerial representatives that participated in those previous workshops, to provide an opportunity for comment and obtain high-level buy-in. woSimilarly, district ministerial representatives and other local authorities and stakeholders will be consulted during a set of validation workshops under Activity 1.2.3 that will be held in the district towns of the target districts to facilitate more context-specific feedback and obtain local buy-in, with district-level representatives of the MoECC and MoEWR officially signing off on the AMPs.

[112] Refer to Part II, Section M: Project Sustainability for details on the project exit strategy that will be developed to ensure continued O&M following project completion.

Feedback from these four validation workshops (one federal and three district-level workshops) will be integrated into the urban Adaptation Management Plans to ensure they align with national priorities and are appropriate to the local context. The finalised urban Adaptation Management Plans will be made available to ministerial representatives at federal, federal member state and district levels in English and Somali language hardcopy. In addition, the plans will be uploaded to the knowledge management platform developed under Activity 3.1.3.

Output 1.4: Six local community committees established or capacitated and trained on participatory planning, implementation and monitoring of Adaptation Management Plans.

92. To ensure effective implementation of adaptation measures and promote long-term sustainability, six community committees — representing both urban and rural areas — will be established or strengthened, prioritizing where possible the existing committees. These committees will be trained in participatory planning, implementation oversight and performance monitoring, addressing technical capacity gaps at the district level identified under Barrier 1.

Activity 1.4.1: Capacitate existing community committees and establish new committees to ensure capacity in each district to consolidate their participation in the Adaptation Management Plans, ensuring the presence of one rural and one urban committee in each district.

93. The PMU ESS & Gender Officer will travel to the communities near rural and urban implementation sites within each district to conduct a participatory mapping exercise with members of existing committees, cooperatives and CBOs to determine the extent of local knowledge on climate change adaptation and NbS in particular across different groups and stakeholder types. Based on feedback from consultations during the project design phase[113], these groups will likely include Village Savings and Loans Associations (VSLAs), community resilience committees, natural resource management committees, agricultural cooperatives, water user groups, traditional elder councils, women and youth associations and conflict resolution committees. This assessment will record the purpose and responsibilities of these groups, the number of members, their internal structure and operational frameworks and contact details of their leaders. Moreover, the PMU ESS & Gender Officer — supported by the PMU technical staff in each district — will identify and approach prospective groups to be trained to facilitate the implementation of NbS and hybrid solutions under Outputs 2.1–2.6. As part of the training, a one-day workshop will be held to train each community committee on the roles, structure and mechanisms of the committee. This will be followed by another one-day workshop under Activity 1.4.2. In addition, the PMU will organise additional workshops should annual progress reports identify persisting capacity gaps in committees — in administration of AMPs, for example.

94. Committees will be comprised of ~15 members, so that two persons will be able to carry out committee duties jointly on a biweekly rotational basis with one person available as a substitute. This committee size will also limit the risk of losing capacity built within the committee in the event of committee members leaving. The main criterion for inclusion in committees will be prior experience in local leadership, particularly as the community committees will likely be formed by merging existing CSOs and co-operative structures, which typically constitute 7–10 people in the target districts. The project will sensitise committees to have at least 8 women among the 15 members, with the chairperson role rotating between committee members every six months and mandates in the committee charter to ensure that at least two of these terms will be filled by women during the project's duration.

95. At least one group member each will represent persons with disabilities (PWDs), youth, internally displaced persons (IDPs), minority clans and any other marginalised groups identified. These representatives should ideally be members of these groups or hold a senior position in an existing CSO/co-operative/community group focused on representing the rights and interests of these groups. Moreover, at least one member of the committee must be a local elder (in rural committees) or member of the conflict resolution committee (in urban committees) to provide experienced guidance and a link to local leadership. Specific roles and additional details on the structure of community committees will be decided by the PMU.

Activity 1.4.2: Deliver training to six community committees — including agropastoral and water-user groups

[113] Refer to Annex 3: Stakeholder Engagement Plan

— on the planning, implementation and monitoring of rural and urban Adaptation Management Plans.

96. A series of training workshops, including all required learning materials, will be designed to deliver targeted training on planning, implementing and monitoring the NbS and hybrid solutions that will be implemented at the sites near these communities. The ESS & Gender Officer will contribute to ensuring that the workshop process incorporates adequate accommodations to enable women to participate equally and that training materials include information relevant to women where appropriate. The workshop training materials will refer to the rural Adaptation Management Plans and urban Adaptation Management Plans.

97. A technical presenter will deliver a one-day workshop to each of the six committees based on the training materials during the second year of implementation, ensuring that committee members are adequately prepared to facilitate implementation and maintenance of NbS at demonstration plots, recruit labourers to work these plots under a Cash-for-Work modality and monitor and report on the outcomes of NbS and hybrid solutions interventions, including their adoption within the community. The community committees will also be able to assist local stakeholders in adopting NbS practices, for example by distributing seeds and saplings for revegetating degraded rangelands under Output 2.2. The workshops will emphasise governance and adaptive planning principles to mitigate the risk of conflicts that will potentially arise during implementation.

Component 2: Protection of productive assets and livelihoods by innovative and proven adaptation NbS and hybrid technologies

Outcome 2: Enhanced resilience of vulnerable rural and urban populations to droughts and floods through the adoption of innovative adaptation practices, tools and technologies.

Output 2.1: Six combined V-shaped weirs and sand dams built and equipped with solar pumps, elevated storage tanks and gravity distribution systems in Beledweyne.

98. Water harvesting and flood attenuation infrastructure will be constructed to significantly improve water security during drought periods while managing flood risks. The infrastructure will feature combined V-shaped weirs and sand dams equipped with protected wells, solar-powered pumping systems and gravity-fed distribution networks to provide reliable water access for both human consumption and livestock watering. Environmental and social impact assessments will be conducted to mitigate ESS risks during implementation and community committees will be trained to operate and maintain the infrastructure and manage the water resources.

Activity 2.1.1: Construct six combined V-shaped weirs and sand dams in wadi catchments in Beledweyne.

99. An independent ESS consultancy will be contracted to undertake site-specific Environmental and Social Impact Assessments (ESIAs) at each site for sand dam construction. Risks to be evaluated and quantified include: i) clearing of vegetation during dam and pipe network construction; ii) increased erosion during construction; iii) disruption to local ecosystems; iv) restrictions on land access and land use, resulting in economic displacement; v) exacerbation of social tensions, particularly between clans; vi) inequitable access to water resources; vii) public health and safety challenges; and viii) inadvertent damage to undocumented community-valued cultural heritage. If considerably impactful, long-lasting or irreversible risks are identified based on these site-specific ESIAs, appropriate mitigation strategies will be developed to reduce or avoid these risks. In addition, the Safeguard Risk Identification Form's (SRIF's) screening component will be reevaluated to ensure that safeguards are appropriate to each site's specific context.

100. Moreover, a representative of an engineering firm will travel to Beledweyne to ground-truth sites for sand dam and V-shaped weirs construction to ensure that the criteria used for site selection remain accurate and record data to inform the technical designs. The same actions will be carried out for the sites of protected shallow wells, storage tanks, solar pumps, gravity-fed distribution systems and water collection stations supported by the sand dams. Based on this ground-truthing and the rural Adaptation Management Plan for Beledweyne, the engineering firm will prepare technical designs for the combined sand dams and V-shaped weirs at each site. During this ground-truthing mission, the engineer will also install a pressure transducer data logger below the bridge in the *wadi* of the Ceel-Gaal catchment. This instrument will record streamflow data during the rainy seasons prior to and after the construction of the dams in this catchment, to support the monitoring of flood attenuation performance and provide ground-truthing data for the model developed (activity 3.1.2.) . Moreover, its location upstream of Beledweyne town will also enable the generation of peak flow data contributing to flood

early warning systems.

101. A construction firm will then be contracted to procure materials and build — under the supervision of the engineering firm — six sand dams with V-shaped weirs across their outflows in several catchments of the Beledweyne District to regulate streamflow, mitigate flooding and increase dry-season water availability. These combined sand dams and weirs will have a capacity of ~36,000 m^3 and porosity of 30%, enabling the extraction of 10,800,000 L of water at full capacity. Water will be extracted by solar-powered pumps into elevated storage tanks (Activity 2.1.2). These tanks will dispense water to community taps and water troughs using a gravity-fed distribution system of subterranean pipes to support domestic use in rural settlements, including Ceel-Gool, Jento-Kundishe, Xarar, Kalaberyr, Jawil and Ilka Code.

102. Construction will be monitored by an independent civil engineer who will inspect the construction sites and technical completion as per the approved designs. These inspections will take place approximately halfway through construction and at completion. The ESS & Gender Officer will evaluate whether the dams are constructed according to specifications and meet project requirements, including compliance with Annex 3: Environmental and Social Management Framework and the site-specific ESIAs.

Activity 2.1.2: Install one protected well in the throwback of each combined V-shaped weir and sand dam in Beledweyne equipped with a solar pumping system, an elevated water storage tank, and a gravity-based water distribution system for domestic use and livestock.

103. Following the completion of sand dams under Activity 2.1.1, a construction firm will be contracted to procure and construct combined water extraction, storage and delivery systems. Similarly, the independent civil engineering firm will undertake ground-truthing and inspect the construction sites and technical completion as per the approved designs.

104. A one-day on-site training will be held upon completion to train the rural community committee and operators in the operation and maintenance of the water infrastructure established under Activities 2.1.1 and 2.1.2. The workshop will be supported by district officials from the MoEWR and based on the rural Adaptation Management Plan for Beledweyne. It will be the responsibility of the committee members to operate and regularly maintain the system, reporting any future major repairs to the district MOWR officials. The committee will also receive guidance to ensure equitable water distribution, especially during dry periods, where the number of jerrycans collected per person may need to be limited to facilitate access to a minimum of 20 L per person per day.

Cost recovery mechanism for operations and maintenance of combined dams and water infrastructure

105. A cost recovery mechanism (CRM) will be developed in the first year of implementation to establish a system for funding the operation and maintenance (O&M) costs of the six combined sand dams and V-shaped weirs and the associated solar water distribution systems. During the infrastructure design stage, an analysis of operation, maintenance and replacement costs for a 25-year lifespan, considering inflation, will be conducted. The cost analysis report will detail specific costs associated with recurrent operation and regular maintenance — to be covered by the regular payment of fees by users — as well as costs associated with the replacement of spare parts or major repairs. Once the benefits of the system have been proven and shown to be a viable option for water harvesting, punctual user contributions will cover replacement costs or major repairs, reducing as well the risks related to the management of a large O&M fund. Contributions for major repairs and replacement costs will also be sought from the district government as part of the facilities hand-over memoranda of understanding. The cost analysis reports will be validated in workshops in each target district and presented to the target communities to assess affordability and willingness to pay for water access, the criteria for fee exemption for certain households based on socioeconomic criteria (including, inter alia, widowed women household heads, persons with disabilities); and the frequency and modality of fee payment taking into consideration users preferences.

106. Under the proposed project, the community committees established under Output 1.4, through a dedicated water user sub-committee, will hold the responsibility of collecting and managing user fees and paying for regular operation and maintenance costs, including the salary of the operators, regular pump maintenance and purchase of spare parts from the start of the facilities' operation, with the exception of repairs made during the contractor's warranty period. The committees will store the funds in a bank account and keep records of income

and expenses that will be made publicly available to community members to ensure transparency and enhance community trust in the committee management.

107. In order to capacitate the community committees for this role, they will receive both technical training on O&M and training in fee collection, and transparent income and expense bookkeeping as part of the training provided under Activity 1.4.1. During post-monitoring support visits by PMU and district technical officers, the performance of the committees will be appraised and additional technical and finance management guidance will be provided to further strengthen the capacity of the committees.

108. This CRM model has been extensively applied in rural areas of Somalia and will draw from learning and training materials already developed to build the capacity of water user committees. Given that the proposed technical option does not require fuel and involves relatively low maintenance, it is expected that user fees will remain low and affordable for households. This is particularly important during the dry season, when families often have no choice but to purchase water from trucking services at very high prices per jerrycan, representing a significant economic burden. The new system is therefore expected to reduce households' overall annual water access costs and encourage them to use the facilities. By demonstrating financial viability, the CRM contributes to addressing the challenge of insufficient financial resources to fund NbS identified under Barrier 4.

109. The potential involvement of the private sector in the management of the CRM will be considered on a case-by-case basis for each specific facility. Private sector participation may add value by providing predictable operations and maintenance, faster response times for repairs, and clearer service obligations, which together support reliability and can facilitate replication. However, cost-recovery targets will likely be higher to account for salaries, there may be reduced transparency if financial and performance data are held by the operator rather than the community and the grievance redress mechanism is likely to be less effective when community leaders are not included. A hybrid arrangement, in which community committees retain governance and equity oversight, while a local small, medium or micro-enterprise undertakes technical operations and maintenance as well as fee administration in the scope of concession contracts by the district MOWR is also feasible. In those cases where private sector participation is adopted, additional roles, performance standards and provisions to safeguard vulnerable stakeholder groups would be specified in the project Stakeholder Engagement Plan and the Social and Environmental Management Plan as well as the relevant concession contracts.

Output 2.2: Rangelands brought under climate-smart management practices through community empowerment in the three target districts

110. Rangeland restoration and improved management practices will be implemented to increase vegetation cover, soil stability and livestock carrying capacity. Community-based nurseries will be established to support ongoing restoration efforts, while demonstration plots will showcase effective techniques for enrichment planting and sustainable grazing management. Cash-for-work modalities will be employed to incentivise community participation and provide economic co-benefits, providing an additional demonstration of methods for addressing the challenge of insufficient financial resources to fund NbS identified under Barrier 4.

Activity 2.2.1: Construct and stock one small-scale nursery in each of the three target districts for growing young plants for enrichment planting under Activity 2.2.3.

111. The Procurement Officer will arrange the acquisition and transport of materials to establish and stock one nursery in each district, capable of collectively providing seeds and saplings to ~2,000 agricultural, pastoral or agropastoral households to support revegetation of 4,000 ha of degraded rangelands. This includes the procurement of, inter alia: i) shade netting, poles, wire mesh and other fencing materials to enclose the nursery; ii) timber, nails and corrugated metal roofing to construct a storage shed; iii) a 1,000 L plastic tank; iv) nursery equipment such as polyethene seed bags, seed trays, tables, shelves and hand tools, including spades, hoes and watering cans; v) organic compost or fertiliser; and vi) protective clothing such as gloves and boots.

112. Once all required materials have been procured and transported to the sites, the rural community committees in each district will identify and recruit labourers to construct the nurseries under a Cash-for-Work (CfW) modality. Committee members — supported by their district PMU technical staff members — will provide instruction, supervise construction and dispense funding to labourers. At each nursery, rubble will be cleared, the site will be enclosed by fencing, a storage shed with shelving will be constructed, a water tank will be installed

and shade netting will be suspended over a part of the nursery.

113. On-site training sessions will be held in each district by an agricultural extension officer to capacitate the rural community committees for the operation and maintenance of the nurseries. These training sessions will be based on the rural Adaptation Management Plans and include training on planting seeds and saplings, applying compost or fertiliser, managing pests and diseases, cultivating these plants and safely extracting them for replanting on revegetation plots. In addition, committee members will be responsible for reporting damages to the nursery, implementing maintenance and repairs using a CfW modality as required, advising local residents on effective planting and cultivation and maintaining logs of nursery activities. To facilitate division of labour and assign unambiguous responsibilities, committee members will be appointed to specific roles in the management of the nursery based on their experience, skills and interest.

114. The Procurement Officer will arrange the acquisition and transport of seeds, saplings and suitable waterproof containers to the nurseries, where some of these will be planted and some placed in storage by rural community committee members capacitated under Activity 2.2.1. These plant species will be cultivated for enrichment planting on demonstration plots and eventually made available to local farmers, pastoralists and agro-pastoralists. Plants to be cultivated will comprise only species suitable to the local context, including Super Napier, Sudan and Africa foxtail grasses, sorghum, alfalfa, peanuts and other legumes, and trees, particularly *Senegalia* and *Vachellia* spp[114].

Cost recovery mechanism for operations and maintenance of nurseries

115. Community committees will take ownership of the nurseries from the start and committee members will be responsible for all operations and maintenance (O&M) costs during and after the project's duration, including repairs and purchase of consumables and spare parts. Funding for these O&M costs during the project's lifetime is budgeted for under Activity 2.2.1, but following project completion funding is expected to be obtained by: i) selling seedlings and saplings, including cash crops if deemed appropriate; and ii) lending out tools and equipment for a fee. This cost recovery mechanism (CRM) for funding NbS interventions will provide a model for ensuring the financial viability of NbS interventions in future NbS projects. By demonstrating financial viability, the CRM contributes to addressing the challenge of insufficient financial resources to fund NbS identified under Barrier 4.

Activity 2.2.2: Based on the Adaptation Management Plans in prioritised sub-catchments and floodplains developed under Output 1.2, build the capacity of agropastoralists and pastoralists to sustainably manage 4,000 ha of rangeland and demonstrate climate-smart management practices incorporating traditional knowledge and innovative practices.

116. Across two days, an NbS specialist consultant will deliver training on the enrichment planting process to each rural community committee, followed by the establishment of demonstration plots at selected sites. The presentation will cover the benefits of enrichment planting, challenges to the establishment of the selected species and maintenance of demonstration plots.

117. At least ten plots per district will be established using seeds, saplings and tools transported from the local nurseries established under Activity 2.2.1. The location of these plots will be confirmed under Output 1.2. Land clearing and planting will be achieved using local labour under a CfW-modality as in Activity 2.2.1 during the third and fourth year of implementation. Plots will be marked using field signage. Committee members will be responsible for monitoring and recording the status of these plots as well as performing basic maintenance where necessary.

118. During the fourth year of implementation, the NbS specialist will undertake a further trip to the target districts to revisit the demonstration plots with these committee members in order to show the improved pasture productivity. A second set of demonstration plots will be established using the same methods as the first set to provide community committees to demonstrate these benefits to local agropastoralists and pastoralists and promote these practices. The target combined area of all demonstration plots established during the first and second visits by the NbS specialist consultant, across all three districts, will comprise at least 4,000 ha. The nurseries established under Activity 2.2.1 will be large enough to produce sufficient seeds and saplings for these

[114] FAO SWALIM. 2025. Land Cover. https://faoswalim.org/land/land-cover. Accessed on 10 July 2025.

plots as well as any land on which local residents adopt climate-smart rangeland management practices.

Output 2.3: Soil bunds constructed to reduce soil erosion and water run-off at the watershed level in Beledweyne.

119. Soil conservation will be implemented using soil bunds to reduce erosion and improve water infiltration across erosion-vulnerable slopes. The interventions will be implemented using a CfW modality to recruit local labour, providing tools and guidance to enable climate change-resilient construction and appropriate maintenance. Community committees will be trained to maintain and monitor the outcomes of these interventions.

Activity 2.3.1: Provide training to community committees and distribute digging tools, including spades and hoes, to communities.

120. The procurement officer will be responsible for the acquisition and transport of digging equipment such as hoes and spades, as well as protective equipment, including gloves and boots, to a district storage facility in Beledweyne Town. The district PMU technical staff member will oversee their requisition to the rural district committee, which will distribute the tools among local labourers as required. Similarly to Activity 2.2.3, the district PMU technical staff member will present a safety briefing and demonstrate and instruct on the construction of soil bunds at the sites identified in the rural Adaptation Management Plan for Beledweyne.

121. The PMU technical staff member will also present a one-day on-site training on monitoring and maintaining soil bunds to the community committees using soil bund demonstration plots. This training will include design considerations for replicating demonstration plots, such as slope, soil and vegetation characteristics. Using this training, community committee members will be able to monitor and report on the outcomes of this intervention and promote its replication within their community.

Activity 2.3.2: Implement soil bunds on selected slopes in the target districts.

122. Following the training under activity 2.3.1 the district PMU technical staff member and Beledweyne community committee will oversee the construction of ~200 ha of these bunds on slopes by local labourers recruited under a CfW modality, using the tools and equipment distributed under Activity 2.3.1. Labourers will selectively clear vegetation on these slopes, construct earthen retaining bunds by heaping up soil and sow seeds requisitioned from the district nursery to stabilise the bunds.

Output 2.4: River embankments restored and riverine areas revegetated or restored for the reinforcing of river embankments and retention and infiltration of flood water in Jowhar and Afgooye.

123. The structural integrity of river embankments will be strengthened and access to water improved by restoring degraded embankments and revegetating riverine areas in Jowhar and Afgooye. This includes installing gabions and low-flow pipes at sites of anthropogenic breakage to enable flow during dry periods. Revegetation will focus on embankments, irrigation canals and the paleo-channel north of Jowhar, using demonstration plots and community labour under a CfW modality.

Activity 2.4.1: Restore embankments with gabions and low-flow pipes in areas where breakages are anthropogenic.

124. An agricultural engineer will visit sites in Jowhar and Afgooye identified in the rural Adaptation Management Plans for embankment restoration to ground-truth them, select final sites in Jowhar and Afgooye and validate the proposed restoration methodologies. During the ground-truthing step, the Safeguard Risk Identification Form's (SRIF's) screening component will be reevaluated for each selected site to ensure that safeguards are appropriate to the restoration site's specific context. Following this, the agricultural engineer will undertake another site visit to oversee and guide embankment restoration. At sites where embankments have become degraded by inadequate land management or climate change impacts, or where embankments have been purposefully breached to access water for irrigation— as is the case in the confluence of river and irrigation canals in Afgooye — gabions and low-flow pipes will be installed by a contracted construction firm. In the target areas of Jowhar and Afgooye the Shabelle River has a higher elevation than the surrounding farmland, enabling gravity-fed pipes installed in the riverbanks to supply irrigation water during periods of low flow. This removes

the incentive for farmers to break the riverbank to enable water flow for irrigation, thereby reducing flood risk. Water flow through these low-flow pipes is controlled by mechanical gates that can be opened, therefore this irrigation method does not require an abstraction pump and no fuel or pump maintenance costs are required.

Activity 2.4.2: Revegetate river embankments, banks of irrigation canals in Jowhar and Afgooye, and revegetate the paleochannel north of Jowhar town.

125. An agricultural specialist will support community committee members in establishing demonstration revegetation plots on river embankments in Jowhar and Afgooye. These plots will be planted using seedlings and saplings from the local nurseries established under Activity 2.2.1. As with previous NbS interventions, labour will be recruited by the committees using a CfW modality. The agricultural specialist will provide on-site technical guidance to ensure planting methods align with the rural Adaptation Management Plans.

126. To complement this effort, a wetland will be re-established in the paleochannel north of Jowhar town. This will involve directing river water into the paleo-channel, removing silt to restore the channel's natural slope and planting native vegetation to restore its ecological function. The agricultural specialist will oversee community committee members and local labourers to ensure that restored wetland areas are hydrologically connected to the river and resilient to seasonal variation in streamflow.

127. The agricultural specialist will undertake follow-up visits during year four of implementation to the revegetation demonstration plots and the wetland with community committee members. These visits will assess revegetation benefits, document lessons learned and identify any challenges that emerged during implementation. Based on these findings, additional demonstration plots will be established to support community learning and replication within the district.

Output 2.5: Sustainable urban drainage systems (SUDs) improve urban drainage network.

128. Urban drainage infrastructure will be constructed to manage flood risks in the three district towns. The interventions will include strategically placed ditches or vegetated swales, detention basins and retention ponds that will divert and store floodwater. Training workshops will demonstrate the benefits of sustainable drainage management and community committees will be trained on infrastructure monitoring and maintenance.

Activity 2.5.1: Establish strategically placed ditches, vegetated swales, detention basins and retention ponds in Beledweyne, Jowhar and Afgooye urban areas.

129. Based on sites and methodologies selected in the urban Adaptation Management Plans, hydrological assessments using satellite imagery, land ownership and land use analysis and detailed topographic survey of specific sites selected will inform the specific site selection and design of suitable SUDs in each location. At this point, the Safeguard Risk Identification Form's (SRIF's) screening component will be reevaluated for each selected SUDs site to ensure that safeguards are appropriate to each specific context. Upon design validation a construction firm will be contracted for the implementation of the SUDs mobilising local casual labour as appropriate. During and after construction of these drainage systems, a one-day training workshop will be held in each target district by a drainage management consultant to capacitate the urban community committees, using selected SUDs demonstration plots. Committee members will be trained on urban runoff management, stormwater control and infiltration potential of different surfaces. To support the workshop, committee members will be taken to sites before and after implementation to demonstrate the benefits of urban drainage. Committees will be responsible for monitoring the status of drainage basins, reporting blockages or damage and undertaking basic maintenance, including clearing waste.

Output 2.6: Waste management and its flood reduction benefits demonstrated in urban neighbourhoods.

130. Improved waste management systems will be implemented to reduce urban flooding caused by drainage system blockages caused by unmanaged waste. Training workshops will be undertaken to capacitate district authorities on urban waste collection, composting and repurposing techniques. Community-based approaches will be used to establish sustainable waste collection and disposal practices and demonstrate the benefits of improved waste management on flood risk reduction.

Activity 2.6.1: Host training workshops in community buildings in Beledweyne, Jowhar and Afgooye Towns to

present the importance and methods of waste collection in reducing flood impacts to local district authorities responsible for urban management.

131. An urban planner will design and generate training materials for a workshop on improved waste management. This two-day workshop will be presented to district authorities in each district town to train them on strategies for waste collection, separation, disposal, processing and reuse, including the production of compost and the repurposing of solid waste for construction. This will be facilitated by the demonstration of composting kits to sort, layer and turn compost collected within the district town on selected plots. Composting kits, in addition to bins for compostable and non-compostable waste will be provided to district authority representatives for demonstration purposes.

Activity 2.6.2: Conduct community-led waste collection drives to demonstrate and involve community members in waste collection and proper disposal — to reduce flood impacts based on the plans developed under Output 1.3 — in Beledweyne, Jowhar and Afgooye town.

132. Bins for compostable and non-compostable waste, as well as protective equipment will be procured and distributed by district PMU technical staff to volunteers recruited for annual waste collection drives by the urban community committees. Community committees will mobilise participants using posters, flyers or by contacting elders and traditional authorities. Committee members will organise the route and refreshments, ensure that participants are provided with appropriate bins, sacks and protective equipment, guide waste collection, oversee the handover of collected waste to district authorities and record and report participant numbers. These drives will raise awareness of the benefits of improved waste management on flood risk reduction and inform participants on the differences between compostable and non-compostable waste.

133. These waste collection drives will be complemented by guided visits to blocked and clear drainage infrastructure to demonstrate the impacts of unmanaged waste on flood risk. Facilitators from the urban community committees will lead these walk-throughs, showcase comparison photos of sites taken before and after improved waste management was implemented and capture local perspectives and testimonials for use in awareness-raising campaigns delivered under Activity 3.3.1.

Component 3: Improved enabling environment for investment in the replication and upscaling of adaptation NbS and hybrid solutions in Somalia

Outcome 3: Enhanced policies, incentives and guidelines to promote the use of proven innovative NbS measures and soil carbon trading.

Output 3.1: Lessons learned and best practices are codified and disseminated to promote investment in NbS.

134. Systematic documentation of project experiences will be conducted through regular community consultations, research partnerships and detailed analysis of the performance and cost-effectiveness of implemented NbS interventions. Knowledge products will be developed and disseminated through multiple channels — including an online knowledge management platform developed in partnership with academic institutions — to reach stakeholders and promote investment in proven approaches. By disseminating knowledge products including best practices and lessons learned for NbS implementation in Somalia, the project contributes to addressing the challenge of insufficient technical capacity and inadequate data and planning identified under Barriers 1 and 2, respectively.

Activity 3.1.1: Document lessons learned and best practices during project implementation.

135. The M&E Officer, will undertake annual trips to the project districts to host community consultations with ~10 persons, including vulnerable and marginalised groups, in urban and rural areas respectively. The objectives of these consultations will be to: i) determine public attitudes towards the project; ii) gauge the extent to which it has delivered benefits, and whether these have been distributed equitably throughout the communities; and iii) assess changes in the awareness of NbS and hybrid solutions. Moreover, these consultations will provide opportunities for community members to communicate potential challenges encountered as a result of the project or in accessing project benefits and propose alterations to project implementation. These suggestions — in addition to the assessment of benefits and any emerging challenges that will potentially jeopardise project implementation such as conflict in the project districts — will be taken under consideration as part of the project's

commitment to an adaptive management approach. The results of these community consultations will be reported to the PMU for incorporation into the annual performance reports (APRs) presented to the Project Steering Committee (PSC).

136. During the first two years of implementation, the consultant will meet with representatives of the Somalia national universities to develop research projects to be undertaken by the Master students enrolled under Activity 1.1.3. These projects will be designed to support the generation of a knowledge base on implementing NbS and hybrid solutions in Somalia. Topics will likely focus on several disciplines, including *inter alia* hydrology, geospatial analysis, knowledge management, environmental and social safeguards and carbon crediting mechanisms. The potential for master's candidates to develop the short note on project performance under Activity 3.1.2 will be considered during project implementation.

Activity 3.1.2: Develop and publish reports on the performance and cost-effectiveness of NbS and hybrid solutions implemented in the project.

137. Building on the prior UNEP-DHI and MOWR work in modelling the performance of a range of NbS in reducing peak flow, hydrological modelling will be used to appraise the flood attenuation and soil infiltration performance of NbS and hybrid solutions in prioritized rural areas, comparing flood attenuation and infiltration indicators at baseline and with the proposed solutions. This comparative analysis will reveal how each solution performs at current and future climatic conditions and the findings will be documented in a report.

138. Complementarily, a cost-effectiveness analysis based on project implementation costs and modelled reductions in GDP lost to the impacts of floods and droughts on food security, livelihoods and displacement as well as avoided costs associated with disaster response. Combined with the NbS flood attenuation and infiltration performance report, the cost-effectiveness report drafted by a cost-effectiveness analysis specialist will provide an evidence base to construct the business case for future implementation of NbS and hybrid solutions in Somalia. During the fifth year of implementation, a short note to summarise modelled and recorded project performance and cost-effectiveness, as well as best practices and lessons learned will be developed based on reports produced under Activity 3.1.2. This note will be uploaded to the knowledge management platform developed under Activity 3.1.3.

Activity 3.1.3: Disseminate knowledge products developed under Activities 3.1.1 and 3.1.2 to government stakeholders to promote the integration of NbS and hybrid measures into planning instruments.

139. During the first two years of implementation, a knowledge management platform will be designed in collaboration with the Somalia national universities and MoEWR to host all public knowledge products developed during project implementation, including course materials for the master's and undergraduate programmes and short course developed under Activity 1.1.3. This open-access platform will be hosted by MoEWR and prioritise usability, being accessible on a variety of platforms including mobile phones and having options for both English and Somali language menus. The use of this platform will be integrated into the coursework component of the university modules.

140. The knowledge management platform will take the form of a web-based portal with a simple, intuitive dashboard that organises content by themes, sectors and user groups (including women specifically). It will feature searchable libraries of documents, training materials and multimedia resources, with filters for language, region, women-specific gender-responsive content and NbS intervention type. Interactive elements, such as discussion forums, frequently asked question submissions and feedback forms, will facilitate exchange between students, practitioners and policymakers. A mobile-friendly interface will ensure accessibility in low-connectivity settings, complemented by downloadable offline resources. Visual tools such as infographics, interactive maps and short video explainers will assist in translating technical information into user-friendly formats, supporting both academic use and community-level uptake. Moreover, the knowledge management platform will include gender-segregated forums to provide a space for discussion of challenges and opportunities in implementing NbS specific to women. While nationally owned, the platform design will draw from UNEP's Communication Division design principles and lessons from existing knowledge platforms, promoting compatibility with international best practices.

141. The short note and both reports produced under Activity 3.1.2 will be made available in English and Somali

language hardcopy to ministerial representatives at federal, federal member state and district levels as well as on the knowledge management platform during the fourth year of implementation. In addition, the reports will also be disseminated in Somali to the rural and urban community committees in each district.

Output 3.2: Recommendations for policy reforms and incentive packages are available at federal, member state and local government levels to promote the development, replication and upscaling of NbS and hybrid measures.

142. Comprehensive policy reviews will be conducted to identify gaps and opportunities for integrating NbS approaches into existing frameworks. Based on these assessments, specific recommendations will be developed for policy reforms, incentive mechanisms and innovative financing approaches including soil carbon credit schemes. By providing recommendations for policy reform and analysing incentive packages, the project contributes to addressing the challenge of an inadequate policy and incentive environment for NbS upscaling identified under Barrier 3. Moreover, the development of a business case for a carbon credit scheme in Somalia will contribute to addressing the challenge of insufficient financial resources identified under Barrier 4.

Activity 3.2.1: Review relevant climate change, land planning and water management policies to identify gaps and opportunities for integrating NbS and hybrid measures.

143. During the first two years of implementation, a policy analysis specialist will review policy on land use planning, zoning regulations and development guidelines at the federal, state and district levels. The review will assess opportunities for integrating NbS and hybrid solutions into rural and urban planning frameworks such as district resilience plans. Moreover, water management polices including water resource management plans and flood management strategies will be assessed to identify policy gaps relating to NbS and hybrid solutions implementation.

144. The desktop policy review will be complemented by online stakeholder interviews with policymakers at federal, federal member state and district levels within the five ministries capacitated by the project. These interviews will determine gaps in and barriers to the implementation of existing policy relating to NbS and hybrid solutions as well as suggestions for solutions at the policy level. Moreover, these interviews will familiarise appropriate policymakers with the project and its objectives, including the subsequent policy reform recommendations package developed under Activity 3.2.4, which will increase the likelihood of these recommendations being used for policy reform. Policy recommendations will include provisions to ensure the continued implementation of successful NbS practices and technologies and retention of knowledge within communities, including i) the operation and maintenance of infrastructure and equipment; ii) regular refresher trainings for community committees; and iii) continuation of the awareness campaign implemented under Output 3.3.

145. During the second year of implementation, the policy specialist will produce a report on the policy gap analysis. This document will be made available in English and Somali language hardcopy to ministerial representatives at federal, federal member state and district levels as well as on the knowledge management platform developed under Activity 3.1.3.

Activity 3.2.2: Identify and evaluate community incentive mechanisms for uptake of NbS in consultation with local communities and key stakeholders and develop proposed incentive mechanism guidelines.

146. During the second and third year of implementation, community consultations will be held in each target district to identify and evaluate potential incentive mechanisms for community uptake of NbS and hybrid solutions. Stakeholders to be consulted in KIIs will include NGOs and development organisations, as these are experienced in implementing and obtaining community buy-in for novel strategies in Somalia. Moreover, private sector representatives such as businesspeople and famers will be consulted using focus group discussions to identify potential methods of integrating NbS and hybrid solutions into commercially viable local business models, thereby passively providing financial incentives for NbS and hybrid solutions adoption. The assessment of incentive mechanisms will examine the outcomes of previous initiatives using incentive mechanisms, as well as potentially develop novel mechanisms with inputs from these key stakeholders. The proposed incentive mechanisms will be evaluated by their potential for enabling replication and upscaling, environmental and financial sustainability and equitable distribution of benefits among community members.

147. Based on the consultation outputs, a set of proposed incentive mechanisms guidelines targeted at federal and district policy- and decision-makers will be developed. The resulting report will be made available in English and Somali language hardcopy to ministerial representatives at federal, federal member state and district levels as well as on the knowledge management platform developed under Activity 3.1.3.

Activity 3.2.3: Develop and present viability assessment and business case for the development of a carbon credit scheme in Somalia to the Federal Government.

148. A technical note outlining the standard protocols for measuring, reporting and verification (MRV) of soil carbon sequestration that are customised to Somali's capacity constraints will be developed during the third and fourth year of implementation. This note will define the requirements to obtain carbon credits from soil carbon sequestration under simplified Tier 1 and Tier 2 IPCC methods in the short term, and internationally recognised methodologies — such as Verra's VM0042 of the Verified Carbon Standard (VCS) — in the long term, specifically focusing on NbS activities such as those implemented under the proposed project[115] : climate-smart rangeland management practices under Activity 2.2.1, including enrichment planting and natural regeneration, as well as the revegetation of river embankments and paleochannels under Activity 2.4.2. Open-source tools and platforms will be emphasised, along with remote sensing — such as satellite-derived normalised difference vegetation index (NDVI) for vegetation cover change — and mobile data collection. The technical note will provide guidance for incorporating soil carbon sequestration components into future NbS initiatives in Somalia and enable the identification of gaps in MRV capacities, including governance and legal structures.

149. Based on the MRV requirements outlined in the technical note, a desktop study will be conducted to assess the technical potential for soil carbon sequestration in Somalia. This study will consider environmental and geospatial data — where available on platforms such as SWALIM or published in previous government reports and academic studies — including soil characteristics, past and present soil carbon concentrations, sequestration rates of native Somalia vegetation types and soil carbon retention times. These data will be used to identify priority landscapes and species to implement soil carbon crediting projects, with particular focus given to those appropriate for NbS implementation. Data limitations in the availability of baseline carbon and land use data are expected to result in uncertainty; however, pilot data collection in representative landscapes is likely to reduce these uncertainties.

150. The protocols described in the technical note and desk study of soil carbon sequestration potential will be synthesised into an economic cost-benefit assessment to determine the long-term commercial viability of integrating carbon crediting into NbS initiatives. The assessment will focus on the: i) cost of incorporating MRV procedures into NbS initiatives; ii) cost of building the required capacity[116] for implementing these MRV procedures to the standards outlined in the technical note; iii) cost of maintaining that capacity in the long-term; iv) economic benefits of soil carbon sequestration based on sequestration potential in different Somali landscapes and using different species, as well as current and projected carbon market conditions; v) risks to the long-term economic viability of these carbon projects; vi) potential trade-offs in NbS efficacy when implementing carbon crediting, with particular focus on equitable distribution of benefits to vulnerable community members; and vii) costs of monitoring soil carbon content during the implementation of carbon credit projects.

151. During the third and fourth year of implementation, experts will undertake consultations with subsistence and commercial farmers, pastoralists and agro-pastoralists in the riverine zone of the project districts to determine current and past agricultural practices, including *inter alia* crop types, average area farmed per household, the extent of irrigation and mechanisation, land tenure, MRV capacity of farmers and the current adoption of climate-smart agricultural practices such as crop residue retention and composting. These factors will be considered to ground-truth assumptions, assess practicality, determine gender considerations and develop a set of recommendations of agronomic practices to inform the soil carbon credit scheme implementation strategy.

152. The cost-benefit analysis, supported by the soil carbon crediting protocols and assessments of sequestration potential and agricultural practices, will be used to develop a viability assessment on incorporating soil carbon credits into future NbS initiatives in Somalia and developing soil carbon credit projects on agricultural land in

[115] Although the proposed project will not implement a carbon crediting scheme within its timeframe, it will generate foundational knowledge and capacity to inform and enable such schemes in the future.
[116] Including *inter alia* laboratory infrastructure, data availability and legal frameworks/enabling environment.

the target districts. The viability assessment will include technical considerations such as capacity gaps in required MRV procedures required for compliance with international carbon standards[117], long-term commercial viability and environmental and social aspects. During the fourth year of implementation, the assessment will be framed as a business case and presented to federal stakeholders within the appropriate ministries during a workshop in Mogadishu. The business case will present soil carbon crediting as a potential incentive mechanism for facilitating replication and upscaling of NbS and hybrid solutions in Somalia. The objective will be to emphasise the generation of financial and environmental co-benefits in addition to the climate change adaptation benefits provided by NbS and hybrid solutions in reducing drought and flood risk and impacts. Moreover, carbon crediting projects on agricultural land will be emphasised as a potential supplementary adaptation mechanism by promoting the adoption of improved agricultural practices, which comprises the methods of developing carbon credits under specific crediting methodologies such as Verra's VM0042[118].

Activity 3.2.4: Present recommendations for climate change, land planning and water management policy reforms based on the policy review (Activity 3.2.1), incentive mechanisms (Activity 3.2.2) and feasibility assessments (Activity 3.2.3) to federal government stakeholders in a workshop.

153. During the fourth and fifth year of implementation, a policy reform recommendations package will be developed, describing opportunities for integrating NbS and hybrid solutions into existing and future policy frameworks. These recommendations will be informed by: i) lessons learned and best practices documented under Activity 3.1.1, ii) reports on the flood attenuation and soil infiltration potential and cost-effectiveness of NbS and hybrid solutions implemented in the project under Activity 3.1.2, iii) the policy review and gap assessment undertaken under Activity 3.2.1; iv) the incentive mechanism guidelines developed under Activity 3.2.2; and v) the business case for developing soil carbon crediting projects on cropland or integrating these into NbS initiatives, developed under Activity 3.2.3. Gender-responsive policy recommendations will emphasise the adaptation, financial and environmental benefits of NbS and hybrid solutions and enable these to be recognised within federal, federal member state and district planning frameworks, facilitating their replication and upscaling. Soil carbon will be emphasised as a cross-cutting policy element, to be positioned in the intersection of climate, agriculture and environment policy by integrating soil carbon indicators and targets within proposed and existing national and subnational planning tools such as National Adaptation Plans, Nationally Determined Contribution strategies and plans on land-use, degradation and soil quality.

154. The draft package of recommendations for policy reform will be presented to federal policy- and decision-makers among the five ministries at a workshop in Mogadishu during the fifth year of implementation. This workshop will validate the feasibility of adjusting policy frameworks or developing new ones to incorporate NbS and hybrid solutions and, potentially, soil carbon crediting. Federal government stakeholder feedback — including both workshop discussions and formal comments — will be noted and incorporated into the final version of the recommendation package. The final document will be made available in English and Somali language hardcopy to ministerial representatives at federal, federal member state and district levels as well as on the knowledge management platform developed under Activity 3.1.3.

Output 3.3: Gender-responsive public awareness programmes and a policy advocacy strategy developed and implemented.

155. Comprehensive awareness-raising strategies will be developed and implemented to build understanding of and support for NbS and hybrid solutions across different stakeholder groups. Multi-channel communication approaches will be used to reach diverse audiences and demonstrate the benefits of integrated adaptation approaches. The strategies will include interactive elements that allow communities to share their experiences and perspectives, contributing to the development of a knowledge base in Somalia.

Activity 3.3.1: Develop tailored awareness-raising strategies using educational resources, events, and media, including SMS, radio programmes and paper media (such as flyers and posters).

156. During the third to fifth years of implementation, case studies of NbS and hybrid solutions adoption in the target

[117] The integration of MRV data collected during implementation into the Knowledge Management Platform developed under Activity 3.1.3 to inform future soil carbon projects will be considered.
[118] VERRA. 2025. VM0042 Improved Agricultural Land Management, v2.1. https://verra.org/methodologies/vm0042-improved-agricultural-land-management-v2-1/. Accessed on: 10 July 2025.

districts as a result of demonstration plots will be evaluated. These case studies will be informed by annual project performance reports and reports from the district community committees and will demonstrate both best practices from successful implementation as well as lessons learned where challenges have impeded the full realisation of adaptation benefits. Particular focus will be given to case studies demonstrating the equitable distribution of adaptation benefits to vulnerable stakeholder groups such as women, minority clans and IDPs. Based on these case studies, educational materials will be developed to share best practices and lessons learned, facilitating further community adoption of NbS and hybrid solutions. Educational materials such as training manuals and fact sheets will be contextually appropriate, being written in Somali, including unambiguous visual aids and focusing on challenges specific to targeted communities.

157. To enable an awareness-raising campaign that is contextually appropriate and reaches the greatest number of potential stakeholders, educational materials will be developed for dissemination in the form of several media. These will include print materials such as posters, flyers and banners to be distributed to appropriate community buildings, as well as radio programmes broadcast on national and local radio stations. The latter will be hosted live and feature interviews with NbS experts, case studies and airtime dedicated to call-ins from local residents to receive guidance on implementing NbS and hybrid solutions. To supplement this campaign, community committees will be tasked with subscribing local residents interested in NbS implementation to an SMS-messaging list, which will regularly share links to the knowledge management platform, articles on the project progress released by UNEP or Sadar and notifications about upcoming radio shows, trips to demonstration plots, community consultations and waste collection drives. The radio programmes and SMS messaging will be launched during the third year of implementation.

158. In addition, during the third to fifth year of implementation, annual awareness-raising events will be held in urban and rural communities in each district. These will include the distribution of educational materials as well as discussions with community members across stakeholder groups. Separate events will be held for women and youths to ensure that the public awareness programme is gender-responsive, enabling vulnerable groups to share their perspectives on NbS adoption, challenges and successes and receive targeted guidance.

Component 4: M&E and Knowledge Management

Activity 4.1: Deliver training, implement and monitor the Stakeholder Engagement Plan, Gender Action Plan and Environmental and Social Management Framework.

159. A project inception workshop will be held during the first year of implementation to present plans and frameworks for project management to federal, federal member state and district representatives. These documents include: i) the Stakeholder Engagement Plan (SEP), outlining the grievance redress mechanism and strategy for consultations during project development; ii) the Gender Assessment and Action Plan (GAAP), describing strategies to ensure that project benefits are distributed equitably, including to women and youths; and iii) the Environmental and Social Management Framework (ESMF), listing identified ESS challenges and their mitigation measures, as well as a strategy for maintaining ESS compliance.

160. To ensure these frameworks are gender-responsive — particularly the GAAP — a separate session aimed at female ministerial representatives from the five ministries will be held during this project inception workshop. During both sessions, ministerial representatives will have opportunities to share their perspectives on these plans, identify potential challenges and suggest improvements. All feedback will be incorporated into these plans, and the revised documents will be used to develop a training workshop in Mogadishu to capacitate PMU members for the implementation of the plans.

161. The SEP, GAAP and ESMF will be made available to ministerial representatives at federal, federal member state and district levels in English and Somali language hardcopy. These plans will also be made available on the knowledge management platform developed under Activity 3.1.3 — during the first year of implementation. All PMU personnel will be trained on the revised plans in a workshop during the first year of implementation to ensure that these plans are implemented appropriately. During the entire project lifespan, PMU members will be responsible for implementing these plans to facilitate that target indicators are achieved, benefits are distributed equitably, environmental and social safeguards compliance is maintained, potential challenges are mitigated using adaptive management and the knowledge management platform is established.

Activity 4.2: Implement the Monitoring and Evaluation Plan and Knowledge Management Plan.

162. In addition to presenting and delivering training on the SEP, GAAP and ESMP under Activity 4.1, Component 4 will include a training workshop to capacitate the PMU to implement: i) a Monitoring and Evaluation (M&E) Plan[119], outlining the monitoring and reporting activities and roles; and ii) a Knowledge Management Plan[120], describing protocols for the use and maintenance of the Knowledge Management Platform to be developed under Activity 3.1.3 to host all project deliverables and enable ongoing capacity building and development of an evidence base to support upscaling and replication of NbS and hybrid solutions in Somalia. The Knowledge Management Plan will also include: i) a results framework and timeline for dissemination of all knowledge products generated during implementation; and ii) elaboration on the use of various communications channels such as radio programmes and annual awareness events in disseminating these products.

163. Implementation of the M&E Plan and other frameworks developed under Output 4.1 will require the Project Manager to lead the PMU in generating an Annual Progress Report (APR) and presenting this to the PSC personnel each year of implementation. APR development will require inputs from all PMU personnel but will draw particularly from project M&E activities undertaken by the M&E Officer and the ESS & Gender Officer. These APRs will enable PMU members to adjust implementation to mitigate potential challenges, where appropriate, and ensure that the projected benefits of NbS and hybrid solutions will be generated and distributed equitably.

164. In addition to internal project M&E, during the third year of implementation, an independent results verification exercise will be undertaken to produce a Mid-term Evaluation (MTE). At project closure, a similar independent results verification exercise will be carried out and will inform the Terminal Evaluation (TE). These evaluations will quantify the project's success in achieving target indicators and summarise best practices and lessons learned, contributing to the establishment of a knowledge base for replication and upscaling of NbS and hybrid solutions in Somalia.

B. Promotion of new and innovative solutions to climate change adaptation

165. The proposed project will promote the adoption, replication and upscaling of proven nature-based solutions (NbS) and hybrid solutions that are innovative to the Shabelle River Basin. These innovative solutions will increase the adaptive capacity of vulnerable communities in the Beledweyne, Jowhar and Afgooye districts. The proposed project operationalises objectives from Somalia's National Adaptation Plan (NAP) and third Nationally Determined Contribution (NDC), both of which call for scaled-up, risk-informed development solutions to address the impacts of floods, droughts and land degradation. By directly supporting these priorities, the proposed project aligns with national adaptation strategies and strengthens Somalia's institutional capacity to deliver on its climate goals. Critically, the proposed measures will shift adoption dynamics by embedding NbS and hybrid approaches within formal rural and urban Adaptation Management Plans (AMPs) and aligning them with national planning and budgeting processes. The interventions will be underpinned by technical protocols, university curricula, and a national knowledge platform, thereby standardising design and implementation methods across institutions. Furthermore, the establishment and training of community committees will directly link customary governance mechanisms with formal planning systems, ensuring locally grounded ownership and sustained institutional uptake. Increasing climate change resilience will contribute to Results 2–4 of *Strategic Pillar 2: Innovation* of the Adaptation Fund Medium Term strategy for 2023–2027 (AF MTS 2023–2027)[121].

Result 2: Successful innovation replicated and scaled up

166. Innovative adaptation practices, tools and technologies that have demonstrated success in other areas of Somalia or other countries in the region will be replicated in the target districts and scaled up in a watershed and landscape approach in rural and urban areas (Component 2). These include the following innovative adaptation practices, tools and technologies:

[119] Refer to Part II, Section G: Learning and Knowledge Management for additional details on the Knowledge Management Plan.
[120] Refer to Part III, Section D: Monitoring and Evaluation for additional details on the M&E arrangements of the proposed project
[121] Adaptation Fund. 2022. Medium-Term Strategy 2023–2027. https://www.adaptation-fund.org/wp-content/uploads/2022/12/Medium-Term-Strategy-2023-2027.pdf. Accessed on: 25 June 2025.

Combined sand dams and V-shaped weirs for flood control and water supply

167. The construction of V-shaped weirs in the spillways of sand dams presents a novel combination of these technologies to increase water availability and control floods. Experimental implementation of combined weirs and dams by the United Nations Environment Programme-Danish Hydraulic Institute (UNEP-DHI) indicates a potential flood reduction of up to 60% in Qardho and 38% in Beledweyne[122]. Moreover, the utility of constructing sand dams across wadis to store water has previously been demonstrated by the success of the Biyoole project. The Biyoole sand dams provided valuable insights for the proposed project; for example, the prioritisation of the integration of insights from community leaders under Biyoole informed the decision to integrate these leaders into community committees to be formed under the proposed project. In Somalia, the NbS approach will be institutionalised through Adaptation Management Plans that specify sites, operations and maintenance responsibilities, and monitoring arrangements, ensuring that infrastructure is embedded within formal planning systems.

168. Protected wells will be constructed in the throwbacks of these dams, with solar pumping systems, elevated storage tanks and gravity-fed distribution networks supplying water to community taps. Such gravity-fed distribution systems have been implemented successfully in Somalia previously, for example under the UNICEF-EU PPP Water Project . In particular, the viability of a centralised distribution system from water kiosks informed the water distribution by community committees under the proposed project. This integration of water harvesting, distribution and governance mechanisms ensures that interventions shift from once-off infrastructure projects to integrated, service-oriented systems. Additionally, hydrological monitoring and cost-effectiveness analyses will generate empirical evidence for decision-makers, creating a strong basis for replication and investment.

Climate-smart rangeland management

169. Community-based management systems are frequently implemented in conservation initiatives, yet their application in climate change adaptation is less common, particularly in the context of Somalia. In this project, community committees comprised of stakeholders from the target districts will form part of an integrated watershed approach to address flood and drought risks and impacts. These committees will be incorporated into the validation of urban area and sub-catchment/floodplain area Adaptation Management Plans and will oversee the implementation of NbS and hybrid solutions such as climate-smart rangeland management. This participatory approach empowers communities in rangelands to manage natural resources sustainably, reinforcing customary practices and promoting good governance. Moreover, it will provide opportunities for women, youth and other marginalised groups to contribute to decision-making.

170. Pastoralist-led rangeland regeneration and improved management will also be innovative in the context of the target districts. The approach includes two innovative aspects: the use of a participatory approach to planning and management, and pastoralist-led rangeland regeneration. The regeneration intervention will employ proven methods of rangeland revegetation, using indigenous trees and shrubs adapted to dryland conditions to control erosion and improve soil structure, productivity, infiltration and biodiversity. By embedding regeneration methods in locally governed committees and codifying them through planning instruments, the project transforms rangeland management from ad hoc, short-lived efforts into structured, repeatable practices with community ownership and institutional recognition.

Sustainable drainage and improved waste management in urban areas

171. Retention basins, detention ponds and drainage channels such as roadside swales are proven flood risk reduction technologies in urban settlements. Despite successful implementation in countries worldwide, these have not been widely adopted in Somalia. Moreover, the absence of organised waste collection and disposal in Beledweyne, Jowhar and Afgooye towns increases the risk of obstructions of drainage infrastructure. For example, although Phase I of the Sustainable Urban Drainage Project (SURP) installed an extensive roadside drainage network, it was determined that its efficacy was undermined by accumulations of solid waste within drainage channels, decreasing its effectiveness during floods[123]. Consequently, Phase II of SURP includes

[122] UNEP-DHI. 2022. Sustainable Flood Management and Risk Reduction Action: Applicability of Nature-based Solutions for Flood and Drought Management in Somalia. Final Report. https://unepdhi.org/wp-content/uploads/sites/2/2022/05/Somalia_NbS_Final_NbS_Report.pdf

[123] World Bank. 2022 Implementation Completion and Results Report from the Somali Multi Partner Trust Fund on a Grant in the Amount of Sdr(6,431,925) million (Us$9 million Equivalent) to the Somalia Ministry of Finance for the Somalia Urban Resilience Project. https://documents1.worldbank.org/curated/en/987631647364596215/pdf/Somalia-Urban-Resilience-Project.pdf.

improved urban waste management to safeguard flood mitigation infrastructure[124], which informed the inclusion of waste management activities under Output 2.6. Similarly, urban Resilience Plans developed for Beledweyne town and Jowhar town previously identified potential NbS interventions such as sustainable drainage systems (SUDs) and improved waste management to increase flood resilience. These innovative technologies will protect urban populations and their assets and livelihoods from recurrent flooding. In Somalia, their uptake will be enabled through urban Adaptation Management Plans that integrate hydrological assessments with land-use planning, specifying locations, O&M responsibilities and financing arrangements. Community committees will be trained to monitor hydraulic performance and conduct preventative maintenance, while municipal authorities will be capacitated to institutionalise waste collection, composting and reuse. Community-led waste drives, combined with before/after hydrological demonstrations, will serve as behavioural catalysts, embedding these innovative measures into municipal service delivery and reducing the risk of drainage failure under extreme rainfall events.

Exploration of the potential of a soil carbon credit scheme in Somalia

172. An assessment will be conducted under Activity 3.2.3 to support exploring the feasibility of establishing a soil carbon credit scheme in Somalia, where no such scheme currently exists. Given the exploratory nature of this activity, the focus will be on conducting feasibility studies, identifying risks and institutional gaps, and strengthening the capacity of the Government of Somalia (GoS) to participate in carbon trading. The initiative will include several interconnected components to ensure a robust, context-appropriate foundation for potential implementation.

173. What makes this work innovative in Somalia is its focus on identifying the gaps and requirements necessary to establish the governance, MRV and market-readiness architecture for soil carbon crediting — an area where no such framework currently exists in the country. In parallel, by strengthening institutional capacity, generating baseline data, and preparing a national business case, the project creates the enabling conditions to support Somalia's readiness in the emerging carbon markets, thereby .contributing to develop potential alternative funding streams for Nature-based Solutions (NbS) other than concessional finance in the near future. in the near future,

Stakeholder Engagement and Education

174. Initial discussions with the GoS, Iroko Analytics, the United Nations Environment Programme (UNEP), and the International Organisation for Migration (IOM) have highlighted the critical need for inclusive stakeholder engagement. Consultations with local organisations in Mogadishu will serve to build trust, manage expectations, and secure early buy-in for the proposed soil carbon credit scheme. These discussions will form the foundation for a structured educational programme focused on carbon offset project management. The programme will cover key aspects such as market dynamics, investor relations, certification processes under internationally recognised standards, and the fundamentals of monitoring, reporting and verification (MRV). These efforts aim to build national and sub-national readiness to engage in carbon markets.

Farm Assessments and Baseline Data Collection

175. Working in partnership with local government authorities and communities, the project will identify suitable sites for soil carbon credit interventions. At these sites, farm assessments will be conducted to gather baseline data on soil quality, crop history, and current agricultural practices. These assessments will provide insights into existing conditions and inform the development of agronomic recommendations that support carbon sequestration. The data collected will serve as a cornerstone for designing strategies that integrate soil health improvements with climate mitigation objectives.

Development of MRV Protocols for Soil Carbon Sequestration

176. During the third and fourth years of implementation, a technical note will be developed outlining the standard MRV protocols necessary for generating soil carbon credits. These protocols will be designed in accordance with internationally recognised standards such as Verra's Verified Carbon Standard (VCS). The technical note will specifically address the requirements for obtaining carbon credits from Nature-based Solutions (NbS) like those implemented under the project, including climate-smart rangeland management (Activity 2.2.1) and revegetation of river embankments (Activity 2.4.2). In addition to guiding future implementation, the technical

[124] World Bank. 2024. Somalia Urban Resilience Project Phase II, NAGAAD (P170922) Mid-Term Review (MTR) Mission. https://documents1.worldbank.org/curated/en/099120624164034555/pdf/P17092218ebda40fa1b865172e4172bb0b8.pdf.

note will help identify institutional, legal, and governance gaps that must be addressed to ensure MRV compliance.

Desktop Study on Sequestration Potential

177. To complement the MRV work, a desktop study will be undertaken to assess the technical potential for soil carbon sequestration in Somalia. This study will draw on available environmental and geospatial datasets — such as those from SWALIM — as well as published government and academic research. The study will examine variables including soil characteristics, historical and current soil carbon concentrations, sequestration rates of native vegetation, and soil carbon retention times. Its objective will be to identify high-potential landscapes and species for implementation, with a particular focus on those compatible with NbS.

Economic Cost-Benefit Analysis

178. Insights from the MRV protocols and desktop study will inform an assessment of the commercial viability of soil carbon crediting in future NbS initiatives. This assessment will examine the costs associated with implementing and maintaining MRV procedures, the investments required for capacity building, and the potential financial returns from soil carbon sequestration under different scenarios. It will also assess risks to long-term economic sustainability, market volatility, and possible trade-offs with NbS efficacy—especially with regard to the equitable distribution of benefits to vulnerable communities.

Consultations with Farmers and Agronomic Recommendations

179. Further consultations will be conducted with both subsistence and commercial farmers operating in the riverine zones of the target project districts. These engagements will collect information on crop types, farm sizes, irrigation and mechanisation practices, land tenure arrangements, and the extent to which climate-smart agricultural techniques — such as composting and crop residue retention — are currently adopted. This data will be used to develop tailored agronomic recommendations for integrating carbon sequestration practices into ongoing farming systems. The recommendations will inform the operational design of the soil carbon credit scheme and contribute to adaptive agricultural strategies in the region.

Viability Assessment and Business Case Development

180. All findings will be synthesised into a comprehensive viability assessment, which will be developed into a formal business case during the fourth year of implementation. This business case will be presented to national stakeholders in a workshop in Mogadishu, targeting relevant ministries and technical experts. It will highlight the technical, economic, and environmental rationale for integrating soil carbon crediting into Somalia's adaptation and mitigation strategies. Notably, it will position soil carbon crediting as a supplementary adaptation mechanism that enhances resilience by providing new livelihood opportunities for farmers and supporting the replication and scaling of NbS and hybrid solutions. The emphasis will be on delivering financial and environmental co-benefits alongside the climate change adaptation outcomes of reduced drought and flood risks.

Result 3: Access and capacities enhanced for designing and implementing innovation

181. The proposed project will build capacity within the GoS and vulnerable communities in the Beledweyne, Jowhar and Afgooye districts to facilitate planning and implementation of NbS and hybrid solutions (Component 1). A gap analysis will be undertaken to identify capacity constraints related to expertise, technical skills and equipment within five Ministries at the national, federal member state and district levels. The identified capacity gaps will be addressed through a customised capacity-building programme that integrates context-specific training materials developed for the Somali setting, alongside relevant online courses. Moreover, a review of existing policies on climate change, land use planning and water management as well as incentive mechanisms to promote climate change adaptation will be used to develop a package of recommendations for policy reform. These policies will support the upscaling and replication of the innovative interventions outlined under Result 2, while creating opportunities to introduce additional adaptation measures — novel to the Somali context — at both national and district levels.

182. Community committees in each district, strengthened through the proposed project, will be responsible for managing and overseeing demonstration plots showcasing NbS and hybrid solutions interventions. By demonstrating the adaptation benefits of NbS to mitigate drought and flood impacts, the proposed project will incentivise local communities to replicate these interventions, facilitating their adoption outside of the project districts. These committees are expected to play an enabling role by disseminating knowledge and facilitating

access to shared resources — such as tools and seeds — thereby further strengthening community capacity. By providing defined O&M responsibilities, linking committee functions to AMPs, and reinforcing these with policy and incentive measures, the project ensures that adoption moves from voluntary engagement toward structured, institutionalised participation in adaptation planning and implementation.

Result 4: Evidence base generated and shared

183. To support the demonstration and broader adoption, replication and scaling of NbS and hybrid solutions, the proposed project will integrate knowledge management (Components 3 and 4). A customised multimedia awareness strategy will be implemented, leveraging radio broadcasts, SMS campaigns and printed materials to share locally appropriate case studies of successful NbS and hybrid solutions interventions. This awareness-raising campaign will be complemented by regular live demonstrations designed to maximise community participation and ensure widespread, hands-on exposure to demonstration sites. These sessions will embed best practices and lessons learned into a growing local evidence base. Additionally, all reports, training resources and knowledge products generated throughout project implementation will be made publicly accessible on an open-access knowledge management platform, supporting transparency and long-term impact of project interventions.

184. In addition, project M&E under this component will contribute to the generation and dissemination of the evidence base for facilitating NbS and hybrid solutions replication and upscaling in Somalia. Project outcomes will be assessed regularly to develop best practices and lessons learned, which will be included in Annual Progress Reports, a Mid-term Evaluation and a Terminal Evaluation. These documents will be made available on the Knowledge Management Platform developed under Activity 3.1.3 to support future NbS and hybrid solutions initiatives in the country. By codifying findings into technical protocols and policy recommendations, the project will convert evidence into operational standards that can guide replication and institutional uptake at national and district levels.

185. The project's innovation lies not only in the technical measures themselves but in the way they are embedded within Somalia's governance, institutional and financial systems. By linking NbS and hybrid solutions to rural and urban AMPs, providing standardised technical protocols and curricula, establishing community committees with defined O&M roles, and reinforcing adoption through evidence generation, policy reforms and incentive mechanisms, the project creates a systemic shift in uptake. This ensures that adoption dynamics move from isolated, donor-led pilots to mainstreamed, governance-driven and incentive-supported adaptation practices, making the Somali application qualitatively different and scalable.

C. Scaling and replicating innovative adaptation practices, tools and technologies

186. Innovative adaptation nature-based solutions (NbS) and hybrid solutions that have demonstrated success in other areas of Somalia or other countries in the region will be replicated in the target area and scaled-up using a catchment and landscape planning approach in both rural and urban areas. The innovative solutions (described in Section B) have been selected because of their proven effectiveness to reduce flood risk and enhance water infiltration and soil moisture retention for improved resilience, water and food security in similar contexts or at smaller scales. The proposed innovative solutions build on the learning and recommendations generated by previous programmes and are part of existing or emerging government-led planning frameworks designed with the participation of many relevant stakeholders, using the latest information available, thereby presenting the largely agreed programmes of work in adaptation. This provides legitimacy and great interest in the results of this project, hence increasing opportunities for further replication and scale-up. What makes this approach innovative in the Somali context is that replication is not limited to technical roll-out, but is embedded in policy, governance and financial mechanisms that enable systemic uptake. By anchoring solutions in Adaptation Management Plans and national planning frameworks, and by coupling them with knowledge platforms, training curricula and incentive mechanisms, the project ensures that adoption dynamics shift from donor-driven pilots to government-led programmes supported by local communities and markets.

187. Outcomes 1 and 3 will provide the enabling conditions for scaling up through: i) strengthening institutions, providing training, and building the capacity of communities, Civil Society Organisations (CSO), government actors, academia, and other authorities, as outlined in the Stakeholder Engagement Plan; ii) incorporating NbS considerations into existing mechanisms, programmes, and committees related to natural resources management, disaster risk reduction, adaptation, water resources management, planning, economic

development, agriculture and livestock sectors; iii) implementing a public awareness and policy advocacy strategy; and iv) demonstrating the performance and cost-effectiveness of NbS to create policy and investment incentives for their widespread adoption. In addition, the project will support the development of rural and urban Adaptation Management Plans which will provide explicit guidance for the implementation of NbS and hybrid solutions. Moreover, lessons learned, performance data and cost-effectiveness results will then be shared through a newly developed online knowledge platform. These interventions will ensure that field-level innovations can be replicated more broadly and integrated into national planning instruments and funding pathways. Additionally, local community committees trained under the project will lead participatory planning, implementation and monitoring, thereby supporting long-term ownership and sustainability of project interventions. Together, these mechanisms ensure that replication will be driven by institutions and communities with clearly defined mandates and resources, creating an innovative pathway for scale-up in Somalia.

188. These interventions will be complemented by a deliberate coordination of project interventions with existing programmes — particularly those ongoing initiatives outlined in the Part I section: 'Baseline situation for climate change adaptation and NbS' — to avoid duplication, maximise synergies and sharing of experiences. The Project Steering Committee (PSC) and the Project Management Unit (PMU) will facilitate collaboration, coordination, and leveraging financial resources from other relevant programmes and projects for mutual benefit.

189. The project's design enables NbS and hybrid adaptation solutions to be institutionalised through a combination of science-based planning, capacity-building at multiple governance levels, evidence generation and dissemination and policy integration. By aligning participatory governance with technical design standards and embedding these within national and district planning, the project presents a scalable and context-responsive model for climate adaptation that links local innovation with systemic change. In practice, this means that the project does not simply replicate interventions at new sites but establishes the institutional architecture for their continued uptake, creating durable incentives, capacity and evidence that will drive expansion beyond the project lifespan.

D. Economic, social and environmental benefits

190. The proposed project is designed to deliver integrated economic, social and environmental benefits to project beneficiaries in the Beledweyne, Jowhar and Afgooye districts. The proposed interventions will generate direct and indirect co-benefits through improved water access, increased land productivity, reduced exposure to climate risks and increased institutional capacity for climate-resilient planning. These benefits are outlined in Table 10.

Table 10. Overview of economic, social and environmental benefits to be delivered by the proposed project.

Benefit category	Description	Associated activities/ outputs
Economic benefits		
Protection of assets and reduced damage costs	Hybrid interventions — including weirs, sand dams, soil bunds and green infrastructure — reduce damage to homes, farmland and public infrastructure during floods and droughts. UNEP-DHI and MOEWR assessment used models to simulate catchment response to heavy rainfall in terms of reducing peak flows for four wadis (seasonal streams): two in Beledweyne and two in Qardho districts[125]. Modelling results showed that the combined use of sand dams and V-shaped weirs yielded the most promising results, increasing infiltration by 118% and 156% at depths of 1.5 and 2 m, respectively, and reducing peak flow by 21% and 8% at the same depths. This combination could potentially reduce floods by up to 60% in Qardho and 38% in Beledweyne, although effectiveness varies by flood extent, season and location. Farmers along rehabilitated riverbanks will also see a reduction in the exposure of their livelihood assets to flooding. The Drought Impact Need Assessment of 2018[126] estimated that pastoralists lost around 70 % of their average annual cash income and agro-pastoralists around 30% due to water scarcity and pasture degradation during recent drought cycles, highlighting the economic importance of	Outputs 2.1–2.4

[126] World Bank; Federal Government of Somalia; United Nations; European Union. 2018. Somalia Drought Impact and Needs Assessment (DINA): Volume I – Synthesis Report. Washington, D.C.: World Bank Group.

	improved water access and ecosystem health for livestock and crop productivity Reduced flood and drought damage reduces economic losses for households and reduces spending on recovery and repairs[127], enabling governments and development partners to redirect resources for resilience and long-term development[128,129].	
Livelihood generation and income opportunities	In the immediate term, Cash-for-work (CfW) modalities used in NbS interventions — including soil bund construction, enrichment planting and revegetation — provide income-generating opportunities for rural and urban communities, including women, youth and IDPs. In the long term, agropastoral and pastoral livelihoods in the target communities are expected to enhance livestock health and milk productivity as a result of improved access to water supply through sand-dams and improved pasture and soil health resulting from rangeland rehabilitation and soil erosion control. Field research on the performance of sand dams in Somaliland [130] also indicated that sand dams can sustain agro-pastoral and pastoral livelihoods by covering 58-100% of combined domestic and livestock water demand in the dry season as well as supporting income generation through increased irrigation for crop farming along the riverbanks and by diversifying income sources. Farmers in riverine areas, which include minority clans, are also expected to increase productivity due to the low-lying irrigation pipes during the dry season. Evidence from FAO Somalia field trials show that replacing open canals with low-pressure piped conveyance systems can reduce water losses by 50–70%, improve water delivery uniformity, and increase crop yields by 10–30% for horticultural and fodder crops[131]. These systems also lower pumping energy requirements by 20–40% due to reduced friction and pressure needs, an important benefit in a context where irrigation heavily depends on diesel or solar pumping[132].	Activities 2.2.2, 2.3.2 and 2.4.2
Improved land productivity	Climate-smart rangeland management will improve ecosystem services for ~12,200 rural community members, promoting denser vegetation, increased soil organic matter and improved water regulation and erosion control. Cost-benefit analysis of sustainable land and water management practices in selected highland water catchments of Kenya indicates benefit-cost ratio (BCR) of 2.0–3.1 for rangeland and pasture improvement depending on discount rate and agro-ecological zone[133,134]. This is similar to the results of the Somalia Drought Impact and Needs Assessment (DINA) , which economic modelling of land restoration and soil/water conservation in pastoral systems estimates BCR for dryland restoration in 2.0–3.3[135].	Activity 2.2.2
Soil carbon credit potential	Activities under Output 2.2 will increase soil organic matter. The project will develop a business case for monetising soil carbon through future credit systems, supporting private sector investment and sustainable land management.[136]	Activity 3.2.3
Water access and labour efficiency	Decentralised water supply systems — including solar-powered pumps and storage tanks — reduce reliance on trucked water, lower household water costs and reduce labour burdens. In the three target catchments, 8,520 people will benefit from improved water access. This enables women to engage in income-generating activities and supports livestock survival during droughts, preserving livelihood assets. Households accessing new water supply systems will also see a reduction in the amount spent on purchasing water from vendors during the dry season, reducing the economic burden on households. Market monitoring in Somalia indicates that the price of a 20-litre water jerrycan — a key measure of water access cost during dry seasons — reached approximately 6,083 Somali Shillings (SOS) in Diinsoor district (Bay) during April 2025. Using the	Activities 2.1.1, 2.1.2; Outcome 2

[127] For example, droughts between 2016–2018 caused US$1,175.5 million in damage, while the 2019 floods required US$350 million in recovery funds.
[128] World Bank. 2020. Diagnostic study on trends and threats for environmental and natural resources challenges. https://documents1.worldbank.org/curated/en/742491594100313982/pdf/Somalia-Country-Environmental-Analysis-Diagnostic-Study-on-Trends-and-Threats-for-Environmental-and-Natural-Resources-Challenges.pdf
[129] Parvez A, Meutia R, Hussein M, Muhumed G, Guled K & Riddell H. 2020. Somalia - 2019 Floods Impact and Needs Assessment. Washington, D.C. World Bank Group. http://documents.worldbank.org/curated/en/764681585029507635
[130] Lopez-Rey P. 2019. An Appraisal of the Effectiveness and Sustainability of Sand Dams to Improve Water Security and Resilience in Rural Somaliland. Masters Dissertation. Loughborough University. https://admin.concern.net/sites/default/files/documents/2020-12/MSc%20final%20research%20report-%20Sand%20dams%20Somaliland-Lopez-Rey%202020%20(003).pdf
[131] FAO Somalia. 2019. Irrigation Rehabilitation and Water Management in Somaliland and Puntland. Mogadishu: Food and Agriculture Organization of the United Nations.
[132] World Bank, Federal Government of Somalia, & United Nations. 2018. Somalia Drought Impact and Needs Assessment (DINA): Volume I – Synthesis Report. Washington, DC: World Bank Group.
[133] van Steenbergen F, Tuinhof A, Knoop L & Kauffman JH. 2011. Transforming landscapes, transforming lives: The business of sustainable water buffer management. 3R Water. http://re.indiaenvironmentportal.org.in/files/file/Transforming_Landscapes.pdf
[134] Mcharo M & Maghenda M. 2021. Cost-benefit analysis of sustainable land and water management practices in selected highland water catchments of Kenya. Scientific African, 12: e00779.
[135] World Bank; Federal Government of Somalia; United Nations. 2018. Somalia Drought Impact & Needs Assessment (DINA). Volume I: Synthesis Report. Washington, D.C.: World Bank Group.
[136] Leifeld J & Fuhrer J. 2010. Organic farming and soil carbon sequestration: what do we really know about the benefits? Ambio, 39(8): 585-99.

	prevailing exchange rate at the time (US$1 ≈ SOS560–600), this corresponds to roughly US $10–11 per jerrycan. Other monitored areas such as Balcad recorded elevated jerrycan prices of around SOS2,000, equivalent to US$3.30–3.60, reflecting the economic burden of dry-season water scarcity on households[137].	
Social benefits		
Improved water security and reduced labour burden	Sand dams, solar-powered pumps, elevated tanks and embankment-integrated pipelines improve year-round access to water for households and livestock[138], reducing water collection burden for women and children and supporting food production and WASH needs[139]. The minimum SPHERE standard of 20 L will be available per person per day to 6,000 direct beneficiaries (see Section III.E: Results Framework). Water supply facilities will target communities without reliable water sources during the dry season, which rely on walking long distances to fetch water or expensive water trucking and are thus highly vulnerable to drought. Beneficiaries may include minority clans and other marginalized groups.	Activities 2.1.1, 2.1.2, 2.4.1; Output 2.2
Improved health outcomes	Urban drainage and waste management interventions reduce exposure to environmental health risks including cholera, malaria and Rift Valley fever[140] — particularly in flood-prone informal settlements and IDP settlements[141].	Outputs 2.5, 2.6
Inclusive governance and local empowerment	Six local community committees will lead participatory planning and monitoring of NbS, supporting inclusive land-use decision-making and improved local governance systems.	Output 1.4
Gender-responsive benefits and women's empowerment	A public awareness strategy, quotas for leadership, inclusive training approaches and improved access to water supply will address structural barriers to women's participation and promote equitable access to adaptation benefits.	Output 3.3; Gender Action Plan (GAP)
Conflict management	By improving land stability and vegetation cover in degraded areas, rangeland restoration efforts are expected to reduce competition over land and water resources, mitigating risks of conflict and displacement between pastoralists and farmers[142].	Activity 2.2.2; Output 2.2
Livelihood resilience	Increased water access reduces the amount of time spent collecting water — community members tasked with collection spend a mean of ~1 hour per day collecting water in rural areas in Somalia[143], which can significantly increase during prolonged dry seasons when surface water sources are no longer available. This time will be considerably reduced for the beneficiaries of the sand dam and water supply facilities in the proposed project (see first Social benefit above) As a result, households have more time for productive activities or to pursue employment opportunities, resulting in improved access to food and income. In addition, flood mitigation interventions under the proposed project will reduce infrastructure damage or land degradation that may negatively impact livelihoods associated with infrastructure or land, such as smallholder farmers, for example.	Outputs 2.1–2.6
Inclusion of women, youth, IDPs and minority clans	Women, youth, IDPs and minority clans will be prioritised in project activities. In addition, Livelihood Action Plans are designed to target CfW opportunities, inclusive labour arrangements and meaningful participation at women, youth, IDPs and minority clans (see Annex 4, Appendix A) to ensure these groups benefit economically from the proposed project.	Outputs 2.1–2.6; Environmental and Social Management Framework (ESMF)
Environmental benefits		
Reduced erosion and improved soil structure	Soil bunds and embankment restoration reduce erosion, slow runoff and improve infiltration, contributing to improved soil structure and water retention across cultivated and grazing	Activities 2.3.2 and 2.4.1

[137] Somalia National Bureau of Statistics (NBS). 2025. Somalia Joint Monitoring Report (JMR), Issue 3 – April 2025. Mogadishu: NBS, Federal Government of Somalia.
[138] UNEP-DHI. 2022. Sustainable Flood Management and Risk Reduction Action: Applicability of Nature-based Solutions for Flood and Drought Management in Somalia. Final Report. https://unepdhi.org/wp-content/uploads/sites/2/2022/05/Somalia_NbS_Final_NbS_Report.pdf
[139] SWALIM & FAO. 2016. The Juba and Shabelle rivers and their importance to Somalia.
[140] UNEP-DHI. 2022. Sustainable Flood Management and Risk Reduction Action: Applicability of Nature-based Solutions for Flood and Drought Management in Somalia. Final Report. https://unepdhi.org/wp-content/uploads/sites/2/2022/05/Somalia_NbS_Final_NbS_Report.pdf
[141] Osman AA & Abebe GK. 2023. Rural Displacement and Its Implications on Livelihoods and Food Insecurity: The Case of Inter-Riverine Communities in Somalia. Agriculture, 13(7): 1444.
[142] Eklöw K& Krampe F. 2019. Climate-Related Security Risks and Peacebuilding in Somalia: SIPRI Policy Paper No. 53. Stockholm International Peace Research Institute.
[143] Geere J-A & Cortobius M. 2017. Who Carries the Weight of Water? Fetching Water in Rural and Urban Areas and the Implications for Water Security. Water Alternatives, 10(2): 513-540. Available at: https://www.water-alternatives.org/index.php/alldoc/articles/vol10/v10issue2/368-a10-2-18/file.

	areas[144.145].	
Rangeland regeneration and biodiversity	Community-based restoration of 4,000 ha of rangeland using native species will promote denser vegetation, improve soil organic matter and moisture, improve biodiversity and enhance ecosystem services for rural communities.	Output 2.2
Aquifer recharge and improved water management	Sand dams and weirs improve infiltration and aquifer levels[146,147], enhancing water availability and regulating baseflow during the dry season and droughts. Drainage systems, sand dams and embankment vegetation filter runoff, limiting sediment and pollutant loads in watercourses. These interventions protect water quality and riverine/stream ecosystem function..	Outputs 2.1–2.3
Ecosystem stewardship and replication	Capacity building will equip local stakeholders with technical expertise to manage water supply infrastructure, rangeland systems, erosion and flood control, urban drainage and improved waste management. These efforts will facilitate the replication of best practices, strengthening national capacity for nature-based adaptation planning and climate-resilient development.	Outcome 1; Output 3.1

E. Cost effectiveness analysis

191. The proposed project's selection of NbS and hybrid interventions in the Shabelle River Basin aligns with identified environmental challenges[148] and the most suitable approaches for mitigation and adaptation. The proposed project's interventions will provide a cost-effective approach (Table 11) to reduce the impact of climate risks and enhance the resilience of local communities and their livelihoods. Recent UNEP-DHI modelling supports the cost-effectiveness and sustained impact of these interventions[149].

192. Community engagement underpins the proposed project's strategy to achieve cost-effectiveness and long-term impact by embedding interventions within local governance systems and traditional practices. Through participatory planning and management, communities are given stewardship of natural resources, using approaches such as farmer- and pastoralist-managed natural regeneration to restore ecosystems and support ongoing vegetation growth. By prioritising local stewardship, the project reduces dependency on external maintenance and supports long-term integration of the proposed adaptation measures. Community committees plan, implement and monitor interventions, reducing reliance on external technical and financial inputs. By investing in community capacity and embedding the management and maintenance of NbS interventions within local governance systems and traditional practices, the project ensures that the benefits extend beyond the project's implementation period.

193. NbS are generally more cost-effective than grey infrastructure, particularly in Somalia, where extensive engineered systems such as large dams were historically planned but remain unbuilt as the result of political instability, civil conflict and regional disputes. Furthermore, grey infrastructure is costly and typically engineered based on historical climate norms, with limited capacity to accommodate future climatic variability and extremes. By reducing the impact of floods and droughts through NbS and hybrid measures, the project's interventions lead to cost savings for communities, regional states and the federal government by avoiding damages and redirecting resources to development priorities.

[144] Adimassu Z, Mekonnen K, Yirga C & Kessler A. 2014. Effect of Soil Bunds on Runoff, Soil and Nutrient Losses, and Crop Yield in the Central Highlands of Ethiopia. Land Degrad Develop, 25(6): 554–564.
[145] Woldearegay K, Grum B, Hessel R, van Steenbergen F, Fleskens L, Yazew E, Tamene L, Mekonnen K, Reda T & Haftu M. 2024. Watershed management, groundwater recharge and drought resilience: An integrated approach to adapt to rainfall variability in northern Ethiopia. Int Soil Water Conserv Res, 12(3): 663–683.
[146] UNEP-DHI Centre. 2022. Project Brief: Nature-based Solutions Supporting Climate Resilience in the Shabelle River Basin. https://unepdhi.org/wp-content/uploads/sites/2/2022/06/Somalia-NbS-brief.pdf
[147] Lopez-Rey P. 2020. An appraisal of the effectiveness and sustainability of sand dams to improve water security and resilience in Somaliland. Concern Worldwide. https://www.preventionweb.net/publication/appraisal-effectiveness-and-sustainability-sand-dams-improve-water-security-and
[148] Refer to Part I: Project Background and Context
[149] UNEP-DHI Centre. 2022. Applicability of nature-based solutions for flood and drought management in Somalia: Final report. https://molfr.gov.so/wp-content/uploads/2024/07/FINAL-DRAFT-NATIONAL-FOOD-SAFETY-POLICY-Federal-Republic-of-Somalia-22-July-2024.pdf

Table 11. Cost-effectiveness analysis of NbS solutions compared to alternative solutions.

Proposed solution	Alternative solution	Cost effectiveness
Combined sand dams and V-shaped weirs (Output 2.1) **Cost: USD74,000 per combined dam[a]** **Incremental cost: USD12.33/m^3**, assuming an average capacity of 6000 m^3**, estimated by** the hydrologist consulted during FP development.	Arch dam **Cost:** Comparable costs in Somalia are challenging to source, given development challenges in the country. A recent World Bank procurement plan stated that USD188,733[150] was allocated for the construction of an arch dam in Ceeldoofaar (Ceel Dahir), Somaliland, in a similar *wadi* context[151]. It is assumed that the dam size is approximate to that of the combined dam. **Incremental cost:** USD14.16/m^3, assuming a capacity of 13,333 m^3 based on the assumption that the dams are of similar volume and that water is stored in ~45% of a sand dam's total volume.	Combined sand dams and V-shaped weirs are a more cost-effective rainwater harvesting method because they rely on simple designs that can be built and maintained using local labour and local engineering expertise. In addition, the sand deposit in their throwback is a more effective way of harvesting water in hot climate areas as losses due to evaporation are substantially reduced and water is available for a longer period during the dry season. Sand filtration also results in improved water quality. Arch dams, by contrast, require specialised engineering and machinery, and continuous — potentially international — technical oversight, leading to greater investment costs. In addition, in open arch dams water losses due to evaporation are substantial and water quality is unsuitable for drinking Regarding operation and maintenance costs, some researchers claim that if the design and construction of sand dams is of good quality and maintenance is adequate, they have the longest lifespan of any water storage infrastructure[152]. Others state that sand dams have near-zero operational and maintenance costs[153]. While weirs may carry higher costs, the irregular flow in *wadis*, as well as the attenuation of flow velocity by the levelled sand throwback of sand dams, are likely to limit wear on combined sand dams and weirs, reducing their overall operation and maintenance costs.
Community-led rangeland restoration (Output 2.2) **Cost: USD40 per ha**	Outsourced, privately-led restoration[b]	Community-led rangeland restoration is more cost-effective because it builds local capacity, reduces reliance on external contractors, and ensures long-term stewardship of rehabilitated areas by promoting community ownership of restoration benefits. By embedding restoration knowledge within communities, recurrent costs for monitoring and maintenance are curtailed. Conversely, outsourced restoration requires repeated mobilisation of private actors and higher overhead costs.
Soil bunds (Output 2.3) **Cost: USD464 per ha**	Large-scale terracing **Cost:** USD500 per ha[c], not including training and other costs	Soil bunds offer a low-cost, labour-based solution that can be implemented with locally available materials and maintained by communities. Large-scale terracing, by contrast, requires heavy machinery, engineering expertise, and substantial capital investment, making it far less cost-effective for comparable erosion control and water retention outcomes.
River embankment restoration (Output 2.4) **Cost: USD3,916 per ha**	Concrete embankments[b]	Restoring river embankments through bioengineering and natural materials provides adaptive, self-reinforcing protection at lower cost, with the added benefit of ecological co-benefits such as habitat creation. Concrete embankments are highly capital-intensive, require costly maintenance, and often degrade or fail under extreme climatic events, resulting in high replacement costs as well as potential maladaptation risks.
Sustainable urban drainage (Output 2.5) **Cost: USD4,105 per km**	Concrete swales **Cost:** ~USD34,000 per km[154]	Sustainable urban drainage systems (SUDs) use natural infiltration, vegetation, and permeable surfaces to manage runoff at a fraction of the cost of constructing and maintaining concrete channels. SUDs reduce long-term operational expenditures, while concrete drainage systems require expensive desilting, repairs, and eventual replacement, making them less financially sustainable.
Community-led waste management (Output 2.6) **Cost: USD19,337 per town, including training**	Outsourced, private waste management[b]	Community-led waste management leverages local labour and knowledge to establish cost-efficient systems for segregation, recycling, and disposal. It avoids the recurring contractual and operational costs associated with outsourcing to private companies, while fostering ownership that lowers long-term operational expenses and increases system sustainability.

[a] This cost was estimated for selected large *wadis* in Beledweyne district by a hydrologist consulted during project design. The actual cost budgeted for the contract for dam construction is higher (see Part III, Section G: Budget) and is also an overestimate, accounting for development challenges in the district.
[b] Costs for outsourced restoration and waste management, and river embankment restoration in Somalia are scarce.
[c] According to the technical assessment and NbS recommendations report developed for the EARNSS project.

[150] The 2018 cost of USD146,305 (see World Bank, 2020 below) was converted to the approximate equivalent cost in 2025 of USD188,733 using a conversion rate of 1.29 based on the the United States of America Bureau of Labor Statistics consumer price index (CPI). The calculation was performed using an online calculator available at: https://www.in2013dollars.com/. Accessed on 8 October 2025
[151] World Bank. 2020. Procurement Plan: Water For Agro-Pastoral and Reselience Productivity. Available at: https://documents1.worldbank.org/curated/en/099745004042240526/pdf/P16782607a26f00690bdac0d6bc2532f45e.pdf.
[152] Lopez-Rey P. 2019. An Appraisal of the Effectiveness and Sustainability of Sand Dams to Improve Water Security and Resilience in Rural Somaliland. Masters Dissertation. Loughborough University. Available at: https://admin.concern.net/sites/default/files/documents/2020-12/MSc%20final%20research%20report-%20Sand%20dams%20Somaliland-Lopez-Rey%202020%20(003).pdf
[153] Lopez-Rey P. 2019. An Appraisal of the Effectiveness and Sustainability of Sand Dams to Improve Water Security and Resilience in Rural Somaliland. Masters Dissertation. Loughborough University. Available at: https://admin.concern.net/sites/default/files/documents/2020-12/MSc%20final%20research%20report-%20Sand%20dams%20Somaliland-Lopez-Rey%202020%20(003).pdf
[154] Actual unit costs for concrete swales are scarce. The cost given is an approximate estimation based on several online sources listing the costs of swale construction materials, including sand, cement, gravel and steel reinforcement bars (https://shaleqa.com/product/ethiopia-construction-materials-prices/; https://www.scribd.com/document/543300980/Concrete-Work-Material-Prices-in-Addis-Ababa-1; https://con.2merkato.com/prices/cat/2). An approximate margin was included for labour costs.

194. The integration of NbS into the agriculturally-productive Shabelle River Basin increases the viability of long-term investments in ecosystem restoration and is expected to increase income generation as a result of improved livelihood activities. The implementation of project activities in rural areas is expected to reduce flood severity and secure water supplies, with sand dams alone capable of meeting all domestic water requirements during the five-month dry season[155]. Climate-smart rangeland management has shown a reduction in sediment load and increased biomass, with soil carbon improvements translating into higher maize, sorghum and sesame yields[156] — supporting Somalian food security. Furthermore, urban interventions, such as sustainable urban drainage systems (SUDs) and urban forests, are projected to reduce flooding by up to 50%, with tree canopies further delaying runoff and increasing infiltration[157,158]. These benefits are expected to increase income generated from livelihoods supported by greater irrigation potential, improved soil fertility, reduced erosion and reduced losses from droughts and floods.

195. The proposed project's use of locally available materials and traditional knowledge further reduces costs and supports community ownership. Although context-specific data for Somalia are limited, comparable projects in similar arid and semi-arid regions indicate considerable economic returns — with an estimated US$5.85 million return per US$1 million invested[159]. This is equivalent to a cost-benefit ratio of US$5.85 to US$1. The EARNSS project is structured to generate further evidence on cost-effectiveness and value for money, informing future investment decisions.

196. These interventions are designed to integrate livelihood strengthening and economic development directly into its climate adaptation strategies, creating a cycle of mutual reinforcement that enhances cost-effectiveness and durability. This is achieved by implementing NbS and hybrid measures that simultaneously improve environmental conditions and provide tangible economic benefits to vulnerable communities[160]. By embedding mechanisms for evidence generation on cost-effectiveness and return on investment, the project also provides a replicable model for climate-resilient development aligned with national and global goals. This integrated approach enhances the proposed project's potential to deliver cost-effective outcomes and long-term benefits for vulnerable communities and ecosystems in the project area.

F. Consistency with other strategies

197. The Federal Government of Somalia's Ministry of Environment and Climate Change, established in 2022, has developed policies aligned with the proposed Shabelle River Basin project, supporting its relevance, national ownership and long-term sustainability[161] (Table 12).

Table 12. Alignment of project interventions with national and sub-national plans, policies and strategies.

Plans, policies and strategies	Alignment with the proposed project
National	
Somalia National Adaptation Plan (NAP) Framework, 2022[162]	The design and implementation of the proposed project align with several principles of Somalia's NAP framework. For example, stakeholder engagements will focus on understanding the differing needs and vulnerabilities of women and men in target communities, reflecting Principle 3 on Gender Responsiveness. Similarly — in line with Principle 5 on Participatory, Inclusive and Transparent approaches — the project design was guided by a broad range of stakeholder views, including those of women, youth, IDPs, indigenous peoples and persons with disabilities. Moreover, Principle 6 — Best Available Scientific Information and Traditional Knowledge — is addressed through the selection of interventions based on proven techniques from the NbS catalogue developed by the

[155] Ibid
[156] Climate Resilient Agriculture in Somalia (Ugbaad), Green Climate Fund, 2024
[157] U.S. Environmental Protection Agency. (2025, February 14). Mitigate flooding: Using green infrastructure for flood mitigation. https://www.epa.gov/green-infrastructure/mitigate-flooding
[158] World Bank. 2016. Nature-based solutions for resilient cities: The case of Singapore's ABC Waters program. In Green infrastructure in urban flood management: Lessons from the world (pp. 45–49). Washington, DC: World Bank Group.
[159] Liniger HP and Mekdaschi Studer R. 2019. Sustainable rangeland management in Sub-Saharan Africa – Guidelines to good practice. TerrAfrica; World Bank, Washington D.C.; World Overview of Conservation Approaches and Technologies (WOCAT); World Bank Group (WBG), Washington DC, USA and Centre for Development and Environment (CDE), University of Bern, Switzerland.
[160] Refer to Part II, Section D: Economic, social and environmental benefits
[161] Ministry of Environment & Climate Change. 2023. About us. https://moecc.gov.so/about-us/. Accessed on 24 April 2025.
[162] Federal Government of Somalia. 2022. Somalia's National Adaptation Plan (NAP) Framework. https://napglobalnetwork.org/wp-content/uploads/2022/11/napgn-en-2022-somalia-nap-framework.pdf. Accessed on: 23 April 2025.

	United Nations Environment Programme-Danish Hydraulic Institute (UNEP-DHI)[163]. Additionally, the project responds to Principle 7 on Coordination and Avoiding Duplication, as site selection will consider complementarity and the avoidance of duplication as key criteria. Based on this alignment with the NAP framework, the proposed project will likely also align with several components of the finished NAP once it is developed.
National Climate Change Policy, 2023[164]	The proposed project will align with several policy statements outlined in the National Climate Change Policy, with Output 2.2 supporting policies to "provide capacity building for livestock keepers" and "enhance livestock management systems by implementing improved livestock grazing on rangelands", while Output 2.1 will support policies to "prioritise community level water infrastructure" and incorporate "climate change into water resources infrastructure design" through constructing V-shaped weirs and sand dams with solar-powered pumped reservoirs that provide water for local communities and promote water harvesting for multiple uses. Output 3.1 will support policy review requirements by making recommendations available at federal and local levels, while Outputs 1.1–1.4 align with policies for climate-proofed settlement designs, resilient urban planning, adaptation integration into human development programmes, and spatial Land Use Planning that considers climate change predictions. Additionally, urban waste management plans under Output 2.6 will support improved water supply and waste management systems for cities, Outputs 2.1, 2.4 and 2.5 will support construction of flood reduction infrastructure and water storage systems, and the carbon crediting mechanism under Output 3.3 will promote rangeland establishment and carbon-enhancing activities including reforestation and agroforestry initiatives.
National Environment Policy (NEP), 2019[165]	The proposed project is aligned with several policy statements outlined in the NEP. Output 2.2 supports rangeland and livestock sector goals by improving grazing management and contributing to efficient feed supply chains through strengthened rangeland policies and community participation. Outputs 2.2 and 3.1 will also build institutional capacity and infrastructure in the livestock sector, while supporting range management, grazing and drought reserves and pastoralist engagement through non-formal training. Water availability and conservation policies will be advanced through the construction of V-shaped weirs and sand dams, consistent with objectives to expand rural water infrastructure and slow water flow using barriers. Output 2.6 will contribute to addressing urban waste challenges through improved waste management, while public awareness activities under Output 3.2 will promote responsible disposal practices. Climate-smart rangeland practices under Outputs 2.2 and 2.3 will help reduce soil erosion and support land recovery. Finally, Outputs 3.2 and 4.1, alongside gender mainstreaming across all activities, will contribute to NEP goals on integrating environmental issues into policies for vulnerable groups, promoting women's participation in awareness, education, and decision-making, and ensuring inclusive environmental outreach.
Somalia's Nationally Determined Contribution (NDC), 2021[166]	The project aligns closely with Somalia's NDC by supporting several climate adaptation interventions. Output 2.2 will promote sustainable rangeland management and improved livestock infrastructure, while drainage infrastructure under Output 2.5, complemented by urban Adaptation Management Plans from Output 1.3, will contribute to improved stormwater systems in urban centres such as Mogadishu, Beledweyne, Jowhar and Kismayu. Output 3.1 will deliver public health awareness campaigns in rural areas on climate-related health risks, and Outputs 1.2, 1.3 and 3.1 will further raise awareness of climate change impacts on human settlements, promoting sustainable land use and climate-sensitive development. Output 3.2 will empower women and youth by strengthening their participation in adaptation and environmental conservation activities and supporting climate change communication and education, while Outputs 4.1 and 4.2 will promote climate-resilient traditional and modern knowledge of sustainable pasture and rangeland systems. 4.1 and 4.2 will promote climate-resilient traditional and modern knowledge of sustainable pasture and rangeland systems.
Somalia's Ninth National Development Plan (NDP-9), 2020-2024[167]	Proposed project interventions align with several pillars of the most recent iteration of the National Development Plan. For example, flood control, rangeland management and water provision interventions all support the objective to "improve resilience of food production systems" under Pillar 3: Economic Development. Similarly, these interventions also support "improved access to clean water and food security" under Pillar 4: Social Development. Recurrent drought, climate change, environmental degradation and poor institutional health are identified as causes of multi-dimensional poverty, all of which are mitigated partially by proposed project interventions.
National Biodiversity Strategy and Action Plan	Rangeland restoration using improved grazing management developed under Output 2.2 will broadly align with Strategic Target 3 — elimination of negative incentives and provision of positive incentives for biodiversity conservation — of the NBSAP, as rangelands under improved management typically have greater biodiversity of native plants. Strategic Target 4 — the implementation of plans for sustainable production and consumption

[163] UNEP-DHI. 2022.Sustainable Flood Management and Risk Reduction Action. Applicability of Nature-based Solutions for Flood and Drought Management in Somalia: Final Report. https://unepdhi.org/wp-content/uploads/sites/2/2022/05/Somalia_NbS_Final_NbS_Report.pdf. Accessed on 24 April 2025.
[164] The Federal Republic of Somalia Ministry of Environment and Climate Change. 2023. Somalia National Climate Change Policy. https://moecc.gov.so/wp-content/uploads/2024/10/Somalia-National-Climate-Change-Policy-EN.pdf. Accessed on 23 April 2025.
[165] Federal Republic of Somalia. 2019. National Environmental Policy. https://faolex.fao.org/docs/pdf/som207696.pdf. Accessed on: 23 April 2025.
[166] The Federal Republic of Somalia. 2021. Updated Nationally Determined Contribution (NDC). https://unfccc.int/sites/default/files/NDC/2022-06/Final%20Updated%20NDC%20for%20Somalia%202021.pdf. Accessed on: 23 April 2025.
[167] The Ministry of Planning, Investment and Economic Development. 2020.Somalia's National Development Plan 2020 to 2024 (NDP-9). https://nwm.unescwa.org/sites/default/files/2023-06/Somali-National-Development-Plan-2020-2024.pdf. Accessed on 23 April 2025.

(NBSAP), 2015-2020[168]	of natural resources — will also be supported, as improved grazing management will reduce overgrazing. Development of a carbon crediting mechanism on climate-smart rangelands under Output 3.3 will support Strategic Target 15 — ecosystem restoration in support of increased soil carbon stocks for climate change adaptation and mitigation — by incentivising carbon sequestration projects.
National Disaster Risk Management Policy (NDRMP), 2020[169]	Output 1.1 of the proposed project will align with NDRMP Outcome 1.3: Increased capacity to undertake risk assessments and analysis of the National Disaster Risk Management policy by increasing the capacity of government stakeholders for drought and flood prevention. Similarly, Output 1.4 will align with NDRMP Outcome 2.2: Increased capacity for risk assessment, analysis and application at local level by providing capacity training to local communities. The drought- and flood-related policy recommendations made available under Output 3.1 will align with NDRMP Outcome 3.1: Policies, strategies, plans and legal frameworks are adopted and implemented to reduce risk and strengthen resilience, whilst Output 3.2 will support NDRMP Outcome 3.2: Strengthened coherence between climate change adaptation and resilience strategies and disaster risk reduction mechanisms.
Somalia National Water Resource Strategy (NWRS), 2020-2025[170]	The construction of V-shaped weirs and sand dams under Output 2.1 of the proposed project will align with several components of the NWRS, particularly Sub-strategy 17: Improve water security for irrigation and agriculture, Sub-strategy 18: Improve water security for livestock, Sub-strategy 19: Improve provision of Water & Sanitation services and Sub-strategy 20: Enhance provision of ecosystem goods and services.
Somalia National Drought Plan, 2020[171]	The proposed project aligns with several drought mitigation and preparedness measures outlined in Somalia's National Drought Plan. Output 3.1 will support legislative development on water resource management by providing recommendations and incentives to policy- and decision-makers, while Outputs 4.1 and 4.2 will contribute through the assessment and dissemination of best practices and adaptation strategies. Construction of reservoirs at V-shaped weirs and sand dams under Output 2.1 will augment water supply during dry seasons, supporting efforts to increase water storage. Output 3.3 will enable incentives for farm and business diversification through mechanisms such as carbon crediting linked to climate-smart rangeland management. In addition, Output 3.2 will deliver gender-responsive public awareness and advocacy programmes, and Output 1.4 will establish community committees — both reinforcing the drought plan's focus on public education and participation in preparedness efforts.
Technology Needs Assessment (TNA), 2022[172]	Within the water sector, identified within the TNA as a priority sector, several adaptation technologies are prioritised, including some that align with the proposed project. First, water conservation management will be implemented by restoring riverbanks, building sand dams, creating rural and urban Adaptation Management Plans (AMPs) and providing capacity-building for water management. Second, the AMPs and other Knowledge Management Products will contribute towards an Integrated Water Resources Management Strategy for Somalia. Third, although the proposed project will not build solar-powered boreholes, the implementation of solar-powered pumping systems will potentially provide valuable lessons for borehole implementation. Last, although the proposed project will not implement drinking water treatment and safe storage at the household level, it will implement this technology at the community level.
Technology Action Plan for Adaptation (TAP), 2024[173]	The TAP recommends the creation of a national database to catalogue information on climate change adaptation technologies, a function that can potentially be served by the Knowledge Management Platform. Moreover, the TAP suggests projects "strengthen knowledge in the technical aspects of managing and installing solar PV [photovoltaic] systems", which aligns with the training on operating and maintaining the solar water pumps that will be provided to rural community committees. The TAP further suggests that projects "bolster institutions and organisations that manage groundwater and renewable energy", which will be accomplished primarily by the capacity-building activities under Outcome 1 as well as the generation of knowledge management products under Outcome 3.
Sub-national	
Beledweyne Urban Resilience Plan, 2020[174]	The urban resilience plan for Beledweyne outlines several climate change adaptation measures that are well aligned with the proposed project's interventions. Output 2.1 will support the construction of solar-pumped water reservoirs alongside V-shaped weirs and sand dams, while drainage system improvements will be addressed through drainage channels under Output 2.5. Output 2.6 will enhance urban flood control through improved solid waste management and riparian planting and rehabilitation under Output 2.4 will contribute to

[168] Federal Republic of Somalia. 2015. National Biodiversity Strategy and Action Plan (NBSAP). https://www.cbd.int/doc/world/so/so-nbsap-01-en.pdf. Accessed on 23 April 2025.
[169] Federal Republic of Somalia. 2020. Revised National Disaster Risk Management Policy. https://www.preventionweb.net/media/97400/download?startDownload=20250423. Accessed on: 23 April 2025.
[170] Federal Government of Somalia Ministry of Energy and Water Resources. 2021. National Water Resource Strategy 2021 – 2025. https://www.afdb.org/sites/default/files/final-draft-strategy-book.pdf. Accessed on: 23 April 2025.
[171] United Nations Convention to Combat Desertification. 2020. National Drought Plan for Somalia. https://www.preventionweb.net/media/93175/download?startDownload=20250424. Accessed on 24 April 2025.
[172] Ministry of Environment and Climate Change (MoECC). 2022. Technology Needs Assessment for Climate Change Adaptation. https://tech-action.unepccc.org/wp-content/uploads/sites/2/2023/09/tna-somalia-adaptation-report-dec-2022.pdf. Accessed on: 9 September 2025.
[173] UNEP Copenhagen Climate Centre. 2024. Technology Action Plan for Adaptation. https://tech-action.unepccc.org/wp-content/uploads/sites/2/2024/12/tap-adaptation-somalia-sep-2024.pdf. Accessed on: 9 September 2025.
[174] UN Habitat. 2020. Working paper on flood risk and urban resilience. https://unhabitat.org/sites/default/files/2020/09/beledweyne_resilience_final.pdf. Accessed on: 24 April 2025.

	the creation of a green river buffer zone. Outputs 1.2 and 1.3 will support the development of urban adaptation and greening plans through nature-based and green infrastructure-focused policies. In addition, capacity-building measures will be advanced through Outputs 1.1 and 1.4, and community awareness programmes will be delivered under Outputs 1.4 and 3.2.
Jowhar Resilience Plan, 2021[175]	This urban resilience plan for the city of Jowhar proposes several climate change adaptation interventions that will be supported by this project. The plan proposes the creation of riparian buffer zones and urban green area, as well as hedgerow networks, which will be supported by the creation of urban greening plans and riverine vegetation establishment and rehabilitation under Outputs 1.3 and 2.4, respectively. Similarly, the creation of a sustainable urban drainage network is consistent with the proposed intervention to create drainage channels under Output 2.5. The Jowhar Resilience Plan additionally suggests waste minimisation measures which will align with those proposed under Output 2.6.

G. Project alignment with technical standards

198. The proposed project complies with the March 2016 revision of the Environmental and Social Policy (ESP) of the Adaptation Fund (AF)[176,177]. The AF-accredited Implementing Entity, the United Nations Environmental Programme (UNEP), together with the executing entity, Sadar Development and Resilience Institute (SADAR), will ensure that the project adheres to the ESP requirements. Project activities have been screened for environmental and social risks during the project development stage[178,179]. During implementation, UNEP and SADAR will be responsible for applying the Environmental and Social Management Framework (ESMF)[180] and the provisions in Part II, Section N: 'Environmental and social risks and impacts' to mitigate risks and ensure that interventions address local social and environmental challenges in an inclusive and gender-responsive manner. In accordance with AF requirements and UNEP procedures, stakeholder consultations[181] were planned, an ESMF[182] was created and a Safeguard Risk Identification Form (SRIF) was completed. If unforeseen risks arise, the project team will update the ESMF and integrate appropriate mitigation measures during implementation.

199. The project aligns with applicable national technical standards and regulatory frameworks, including the National Environmental Policy (2019), which outlines requirements for sustainable development, pollution control and natural resource management in Somalia[183]. All civil works, including sand dam and micro-irrigation system construction, will comply with Somalia's existing national and regional technical standards for water infrastructure. These include procedures established under national programmes such as Biyoole I and II[184]. Additionally, the proposed low-risk interventions align with the Somalia National Climate Change Policy[185], which prioritises climate-resilient agriculture, water security and ecosystem restoration. The project also meets requirements outlined in the Somali Environmental and Social Impact Assessment and Audit Regulations issued by the Ministry of Environment and Climate Change (MoECC)[186]. These regulations govern the screening, approval and monitoring of projects with potential environmental and social risks. Additionally, the project will adhere to applicable national labour laws, including occupational health and safety provisions.

200. Site selection and design will incorporate local zoning rules and agreements. Although Somalia does not currently have a formal national land tenure system[187], national planning frameworks — such as the National

[175] UN Habitat. 2021. Jowhar Resilience Plan. https://unhabitat.org/sites/default/files/2021/08/jowhar_resilience_plan_.pdf. Accessed on: 24 April 2025.
[176] Adaptation Fund. 2016. Environmental and Social Policy. Amended March 2016. https://www.adaptation-fund.org/wp-content/uploads/2016/04/OPG-ANNEX-3-Environmental-social-policy-March-2016.pdf
[177] Refer to Part II, Section N: Environmental and social impacts and risks
[178] Refer to Part II, Section N: Environmental and social impacts and risks
[179] Refer to Annex 4: Environmental and Social Management Framework
[180] Refer to Annex 4: Environmental and Social Management Framework
[181] Refer to Annex 3: Stakeholder Engagement Plan
[182] Refer to Annex 4: Environmental and Social Management Framework
[183] Federal Government of Somalia. 2019. National Environmental Policy (EN). Ministry of Environment and Climate Change. https://www.moecc.gov.so
[184] Ministry of Energy and Water Resources. 2021. National Water Resources Strategy 2021–2025: Roadmap to Implementation. Federal Government of Somalia. https://moewr.gov.so
[185] Federal Government of Somalia. 2020. Somalia National Climate Change Policy. Ministry of Environment and Climate Change. https://www.moecc.gov.so
[186] Federal Government of Somalia. 2024. Environmental and Social Impact Assessment and Audit Regulations. Ministry of Environment and Climate Change. https://www.moecc.gov.so
[187] Burman, J., Bowden, A., & Gole, A. 2014. Land Tenure in Somalia: A Potential Foundation for Security and Prosperity. Shuraako. https://shuraako.org

Development Plan[188] — prioritise efforts to strengthen land administration and clarify tenure arrangements. The destruction of land registries limited legal recognition of land ownership and unresolved land occupation by non-state armed actors further complicate land administration and infrastructure development. Alignment with technical standards will be incorporated explicitly into the technical designs of the different green and hybrid infrastructures and cleared by MoECC and MoEWR district technicians. Compliance with the technical standards will be reflected in the procurement documents and contracts with external service providers. The M&E Officer, SADAR engineer personnel and the international hydrologist will be responsible for monitoring project compliance with these technical standards throughout implementation. The Adaptation Management Plans (AMPs) developed under Outputs 1.2 and 1.3 and the associated Protocols on NbS/hybrid solutions developed will also require formal validation from relevant authorities — including the MoECC and MoEWR for alignment with technical standards in the plans and regulations mentioned above — or traditional leadership structures when using state or community-held land.

201. Given the low environmental footprint, community-based nature and small-scale of the proposed interventions, most activities are not expected to reach thresholds that trigger EIAs. Under the Environmental and Social Impact Assessment and Audit Regulations, EIAs are typically triggered for large-scale infrastructure or activities carried out by commercial operators that pose significant environmental risks[189]. For project-related infrastructure construction or land use changes that trigger EIAs under federal or member state regulations, the project will follow required screening, scoping, reporting and public consultation processes in line with Somali EIA Guidelines and the ESMF. For activities not requiring full EIAs, the project will conduct preliminary environmental and social safeguards assessments using UNEP tools to identify and address potential risks during project development.

H. Project duplication

202. The proposed project is designed to complement — rather than duplicate — existing climate change adaptation, resilience and natural resource management initiatives in Somalia and the wider Horn of Africa region. It builds on the technical expertise, institutional frameworks and implementation experiences of both completed and ongoing programmes, using these as a foundation for promoting more integrated, climate-resilient approaches to water, land and ecosystem management. To facilitate coherence, foster synergies and avoid duplication, the proposed project team will actively engage with ongoing programmes and partners through collaborative planning, joint assessments and regular knowledge-sharing mechanisms at national, regional and local levels. In particular, the project is designed to align closely with and complement existing UN-led initiatives in climate- and conflict-affected areas such as Beledweyne, Jowhar and Afgooye, including:

- the Jowhar Off-Stream Storage Program (JOSP), which focuses on integrated water resource management, flood and drought risk reduction, and climate-resilient infrastructure development along the Shabelle River;
- ongoing UN resilience and early recovery programmes in Beledweyne, such as the FAO flood-breaking project to strengthen community-based disaster risk reduction, natural resource management and livelihood resilience in response to recurrent flooding and displacement; and
- the UN-supported area-based programming in Afgooye, such as the WFP programme on climate-smart agriculture, which links durable solutions for displacement with ecosystem restoration and locally-led adaptation measures.

By leveraging best practices and lessons learned from these initiatives and aligning with their geographical focus, governance structures and technical approaches, the proposed project will enable resource-efficient upscaling of adaptation interventions.

[188] Federal Government of Somalia. 2016. National Development Plan 2017–2019, Section 8.8.4.2. Ministry of Planning, Investment and Economic Development: Mogadishu, Somalia. 143.
[189] Federal Government of Somalia. 2024. Environmental and Social Impact Assessment and Audit Regulations. Ministry of Environment and Climate Change. https://www.moecc.gov.so

Lessons learned from completed projects

Table 13. Lessons learned from completed projects.

Project	Lessons Learned and complementarity	Integration of lessons learned into EARNSS project interventions
Somalia Water and Land Information Management Project (SWALIM), 2003–2022[190]. **Budget:** ~US$33 million. **Funding:** European Union (EU), UK Department for International Development (DFID), United States Agency for International Development Office of Foreign Disaster Assistance (USAID OFDA), World Bank (WB), Cooperazione Italiana and the UN Children's Fund (UNICEF). **Implementing Agency (IA):** FAO. • Designed to i) support livelihoods throughout Somalia by monitoring and preserving water and land resources; and ii) enable Somali institutions to generate and manage information on these natural resources, using monitoring systems for water, flood, drought, ecosystem degradation and erosion. • Developed the Flood Risk and Response Information Management System (FRRIMS)[191] — a platform with up-to-date data on weather and river bank breakages across the Shabelle and Jubba River basins.	• SWALIM strengthened the information sector and established monitoring systems, enabling sustainable extraction of water resources through initiatives such as groundwater monitoring • Developed training material including courses on Geographic Information Systems (GIS), data analysis and management, water resources management and degradation monitoring	• SWALIM monitoring systems informed the selection of sites and methodologies for enhancing resilience to droughts and floods (Outcome 2). Data from these systems will also inform the water catchment plan (Output 1.2) and green infrastructure plan (Output 1.3), by indicating flood-prone urban areas. • Climate-smart rangeland management practices and infrastructure developed in the proposed project will be optimised using SWALIM's environmental data platforms and monitoring systems. SWALIM's early warning systems (EWS) and tools will improve climate preparedness and decision-making in the proposed project. • Training material will support capacity development programmes for flood and drought management using nature-based solutions (NbS) and hybrid technologies (Output 1.1). Training material from SWALIM will be used to strengthen local committees' skills in participatory planning, implementation and monitoring of catchment and urban greening plans (Output 1.4) [192].
Aroori Livestock Holding Ground (LHG) Project: Enhancing Livestock Exporting Systems with Infrastructure and Support Services (Aroori LHG)[193], 2014–2018. **Budget:** ~US$4.5 million. **Funding:** Somaliland Development Fund (SDF). **IA:** SDF. • Development project with the purpose of increasing income for pastoralists and improving livestock-exporting system in Somalia by providing livestock holding infrastructure such as fencing, ramps, sheds, water troughs and water pumping systems. Provided fodder and water to alleviate starvation and mortality rates among livestock	• As a part of SDF2, the LHG is being converted into a Livestock Centre of Excellence (LCE) which will provide training and extension services for animal production, fodder production and animal health for Somaliland's livestock producers. • Although the Aroori LHG project ended in 2018, the LCE continues to engage in applied research, knowledge and information dissemination.	• Best practices and lessons learned on increasing water access for pastoralists in the LHG project will inform the design, size or placement of infrastructure such as reservoirs, solar water pumping systems, elevated storage tanks and gravity distribution systems (Output 2.2). • EARNSS will leverage the operational experience of agropastoralists involved in the LHG — including infrastructure maintenance — and incorporate relevant agropastoral practices into its water and rangeland activities. Knowledge will be exchanged between EARNSS and the LCE in collaborative forums and working groups. Forums are expected to support the adoption of NbS and hybrid technologies by disseminating lessons learned and best practices from the systems of both projects (Output 3.1).
Enhancing Climate Resilience of the Vulnerable Communities and Ecosystems in Somalia[194], 2015–2022. **Budget:** ~US$18.2 million. **Funding:** Global Environment Facility (GEF) **IA:** United Nations Development Programme (UNDP). • Designed to increase adaptive capacity and resilience to climate change in vulnerable communities in Somalia. by establishing climate monitoring infrastructure, developing EWS, supporting community-based watershed	• Ecosystem restoration activities — such as reforestation and distribution of solar-powered pumps to women — complement the proposed project's work on flood buffering vegetation and energy-efficient water access (Outputs 2.1–2.4) • The project's support for community-based disaster risk structures, such as District Disaster Management Committees, aligns with participatory planning and support for local governance in EARNSS (Output 1.4).	• The project's work on climate-sensitive planning at multiple governance levels informed the proposed project's technical assessment of gaps in existing water catchment and urban area plans and policies (Activities 1.2.1 and 1.3.1). • The project's vulnerability assessments for water and agriculture sectors and its integration of climate risks into sectoral frameworks will inform gender-responsive public awareness and policy advocacy in the proposed project (Output 3.2).

[190] FAO-SWALIM. 2023. SWALIM Homepage. http://www.faoswalim.org/ . Accessed 2 May 2025.
[191] FAO. 2025. Flood Risk and Response Information Management System (FRRIMS). https://frrims.faoswalim.org/rivers/breakages. Accessed 17 April 2025.
[192] FAO-SWALIM. 2024. Training Activities. https://www.faoswalim.org/capacity-development/training-programme/training-activities
[193] Ministry of Planning and National Development. 2025. SDF1 Projects; https://somalilanddevelopmentfund.org/projects/sdf1 . Accessed 2 May 2025
[194] UNDP. 2025. Enhancing Climate Resilience of the Vulnerable Communities. https://open.undp.org/projects/00084974 . Accessed 2 May 2025

management and promoting climate-resilient agricultural practices. • Built institutional capacity for adaptation and integrated climate risks into national and sub-national planning processes. However, the project did not include the hybrid grey-green infrastructure proposed in EARNSS or a dedicated replication and scale-up strategy (Outcome 3) for NbS.	• Infrastructure, including flood routing systems, will provide technical references for sand dams, weirs (Output 2.1) and urban drainage systems (Output 2.5). • Funds for establishing tree nurseries were diverted to drought relief mid-way through the project's timeline, thereby limiting potential for the proposed project to synergise its nursery construction (Activity 2.2.1) with the GEF project.	• EARNSS will use training materials and technical guidelines developed by the project, Resources such as the Shabelle Basin Adaptation Plan will inform the design of capacity development programmes (Output 1.1), the preparation of watershed planning frameworks (Output 1.2) and efforts to support policy integration and reform (Output 3.1). In addition, these existing knowledge products will support documentation, learning and dissemination activities in the proposed project (Output 3.1).
Strengthening National Capacities for Improved Decision-making and Mainstreaming of Global Environmental Obligations — Cross-cutting Capacity Development Project (CCCD) [195], 2018–2022. **Budget: ~US$1 million.** **Funding: GEF** **IA: UNDP.** • Focused on enhancing Somalia's institutional capacity to meet and sustain obligations under the Rio Conventions. • Contributed to environmental governance through improved policy coordination, decentralisation and awareness-raising activities that promoted environmentally responsible attitudes and practices at national and local levels.	• Institutional analyses, governance frameworks and outreach materials developed by CCCD will inform policy reform activities and the public engagement strategy used in EARNSS (Outputs 3.1 and 3.2). Building on existing communications content will reduce duplication. • Synergy will be ensured through alignment with national policy frameworks supported by CCCD, including those related to Somalia's Rio Convention obligations, National Adaptation Plan (NAP) and Nationally Determined Contribution (NDC processes).	• CCCD public service announcements, youth engagement tools and educational curricula will be adapted to reinforce the proposed project's awareness campaigns and advocacy work for NbS. • CCCD's efforts to update and streamline institutional mandates provide a basis for the proposed project's policy reforms and institutional arrangements that implement NbS (Output 3.1). • Governance models developed by CCCD will support the integration of NbS into multi-level planning and regulatory frameworks. • To maintain continuity in climate governance, the proposed project will engage with government actors involved in CCCD implementation through existing environmental coordination platforms or national level working groups.
Water for Agropastoral Productivity and Resilience I Project (Biyoole I), 2019–2023. **Budget:** ~US$29.4 million. **Funding:** WB **IA:** Ministry of Planning, Investment and Economic Development (MoPIED) • Supported livelihood improvement and climate resilience for agropastoral communities in arid areas of Somalia. • Focused on increasing access to and community-level management of water resources, alongside building the capacity of government institutions to plan and implement water-related interventions. • Followed the 'Water for Agropastoralists Livelihoods Pilot' (WALP) and preceded the ongoing 'Somalia Water for Rural Resilience' project (Biyoole II), which expands the geographic scope further south in Somalia.	• Lessons learned on small-scale water infrastructure deployment in pastoral settings will support technical decisions on infrastructure placement, water user management models and climate resilience features. • Biyoole I supported rangeland restoration and soil erosion mitigation, providing relevant practices for the proposed project's work on climate-smart rangeland management (Output 2.2).	• Insights into farmer and pastoralist engagement and uptake of sustainable land management technologies will inform community mobilisation and training strategies (Outputs 2.2 and 1.4). • EARNSS will use best practices, technical designs and operational models developed by Biyoole I to inform the implementation of water infrastructure and rangeland activities (Outputs 2.1 and 2.2). This includes reviewing infrastructure performance data and community management structures established by the project. • Coordination will be through capacity-sharing with institutions and stakeholders engaged in Biyoole I, including technical staff from MoPIED and community-level actors involved in planning and managing small-scale water infrastructure. • Proposed project will participate in inter-agency forums or technical working groups linked to the WB's broader rural resilience portfolio (Output 3.1).
Somalia Water for Rural Resilience Project (Biyoole II/Barwaaqo, 2023–2028. **Funding:** WB. **IA:** Somalia's Ministry of Planning, Investment and Economic Development (MoPIED) a • Biyoole II builds on Biyoole I, improving water access and climate resilience in dryland communities by delivering low-cost, conflict-sensitive water infrastructure, including sand dams. • Promotes sustainable land and water management using an environmental catchment approach and strengthens	• Biyoole II's construction and rehabilitation of sand dams aligns with the proposed project's drought resilience infrastructure (Output 2.1), offering context-specific experience in design, siting and implementation in Somalia. Biyoole II's climate-smart agriculture complements watershed restoration and erosion interventions in Output 2.3. • Both projects promote sustainable land management and NbS. EARNSS offers a complementary model for scaling NbS across Somalia using hybrid infrastructure,	• The proposed project will coordinate with Biyoole II through joint participation in technical working groups, planning meetings and national-level dialogues on NbS, land management and dryland water infrastructure. Capacity-building activities conducted under Biyoole II —particularly on the Wadi Evaluation Tool (WET) and the World Bank's Water Harvester Explorer — will inform the proposed project's training programmes for government and community institutions (Outputs 1.1 and 1.4). • Operations and maintenance guidelines for water infrastructure being standardised under Biyoole II will be adapted to guide the proposed project's sand dam and solar pumping interventions

[195] UNDP. 2018. Strengthening National Capacities for improved Decision-making and Mainstreaming of Global Environmental Obligations, GEF, Washington DC, USA. https://www.thegef.org/projects-operations/projects/9651. Accessed on: 2 May 2025.

agricultural and livestock production via customised extension services. Project activities are expanding in South-West State and extending to Jubaland and Hirshabelle.	urban-rural integration and a replication and investment promotion strategy (Outcome 3). • Biyoole II's support to national and Federal Member State agencies includes provision of equipment, procurement design frameworks and culturally embedded implementation models. These resources will contribute to NbS implementation (Outcome 2).	(Output 2.1). Best practices from solar-powered irrigation systems will also inform the deployment of the proposed project's solar-powered water supply infrastructure.
Support for Integrated Water Resources Management (IWRM) to Ensure Water Access and Disaster Reduction for Somalia's Pastoralists (LCDFII), 2019–2024[196,197]. **Budget:** ~US$78.6 million. **Funding:** GEF Least Developed Countries Fund (LDCF) **IA:** UNDP. • Supported integrated water resources development and management across Somalia, with a focus on improving water access and reducing disaster risk in drought-prone areas for agropastoralist communities.	• LDCFII established partnerships with the River Basin Management Authorities (RBMAs) for the Juba and Shabelle rivers, which supports the proposed project's implementation of catchment-scale flood management infrastructure. • LDCFII project's investment in groundwater extraction technologies complements multi-functional water infrastructure for drought resilience (Output 2.1). • Village-level training programmes on IWRM built capacity in watershed management.	• Best practices and lessons learned from village-level training programmes will support the formation of community watershed and urban greening committees in the proposed project (Output 1.4).
Promoting Resilience Through Integrated Approach to Water, Environment and Disaster Risk Management in Somalia, 2020–2024[198,199] **Budget:** ~US$17 million. **Funding:** Swedish International Development Cooperation Agency (SIDA), UNDP, the World Meteorological Organisation (WMO) and the Government of Germany **IA:** UNDP • Supported Somali authorities and communities in advancing sustainable and resilient development through targeted interventions in IWRM, environmental governance and disaster risk reduction (DRR).	• The project's capacity-building and training programmes on IWRM and environmental strategy complement the proposed project's focus on strengthening institutional and technical capacities for NbS and hybrid infrastructure for flood and drought management (Outputs 1.1–1.3). • A skill improvement programme for DRR in this project may have introduced elements of NbS for managing flood and drought risks, supporting the development of integrated, climate-resilient planning across outputs related to training and policy (Outputs 1.1–1.3).	• GIS unit established by the project will provide information for preparation of urban catchment plans and green infrastructure protocols (Outputs 1.2 and 1.3). Spatial data and training content from the project will be reviewed when designing institutional capacity programmes (Output 1.1), urban planning outputs (Outputs 1.2 and 1.3) and monitoring of restoration sites (Outputs 2.2–2.6). • Information from the GIS unit will assist with long-term monitoring of land use and restoration within landscape-focused outputs (Outputs 2.2–2.6) • EARNSS implementation will align with broader urban resilience and DRR interventions initiated by this project and maintain institutional consistency through national and local working groups.
Support for Strengthening Climate Change Adaptation Planning for the Federal Republic of Somalia, 2020–2025[200,201]. **Budget:** ~US$2.3 million. **Funding:** Green Climate Fund (GCF) **IA:** UNDP. • Developed national and state-level capacity and coordination mechanisms for climate change adaptation planning and implementation in Somalia, as part of the broader National Adaptation Plan Support Programme (NAP-SP)	• The national adaptation framework, developed under this project, provides a foundation for the proposed project to build upon, especially in implementing policy-related components under Outcome 3.	The proposed project will use several resources developed in the NAP-SP including: • capacity-building materials such as training manuals, institutional gap assessments and inter-agency collaboration models to inform stakeholder training and institutional development (Output 1.1); • standardised methodologies and adaptation plans, to support the preparation of urban catchments and greening strategies (Outputs 1.2 and 1.3); and • the gender toolkit, which will guide community engagement strategies and gender-responsive advocacy in the EARNSS (Outputs 1.4 and 3.2).

[196] UNDP. 2024. Support for IWRM to ensure water access and disaster reduction for Somalia's pastoralists. https://www.undp.org/somalia/projects/support-integrated-water-resources-management-ensure-water-access-and-disaster-reduction-somalias-agro-pastoralists. Accessed on: 2 May 2025

[197] UNDP. 2023. Mid-term evaluation of the Integrated Water Resource Management project. https://erc.undp.org/evaluation/documents/detail/22154. Accessed on:2 May 2025.

[198] UNDP. 2020. Project proposal: Promoting Resilience Through Integrated Approach to Water, Environment and Disaster Risk Management in Somalia. https://info.undp.org/docs/pdc/Documents/SOM/20200930_UNDP_proposal_for_Sida_Final_Draft.pdf. Accessed on: 2 May 2025.

[199] UNDP. 2025. Resilience through WaterEnvDRM. https://open.undp.org/projects/00128746. Accessed on: 2 May 2025.

[200] UNDP. 2019. Support for strengthening climate change adaptation planning for the Federal Republic of Somalia. GCF, Incheon, Republic of Korea. https://www.greenclimate.fund/sites/default/files/document/readiness-proposals-somalia-undp-adaptation-planning_0.pdf. Accessed on: 2 May 2025.

[201] UNDP. 2025. Support for Strengthening Climate Change. https://open.undp.org/projects/00126073. Accessed on: 2 May 2025.

Providing long-term durable solutions to displacement affected communities in a participatory and inclusive, people-centred, government-led, context-specific, gender and resilience-oriented process in Hirshabelle Region, 2018–2021[202] **Funding:** UN Peacebuilding Fund. **IA:** UNDP, International Organisation for Migration (IOM) and UN-Habitat. • Developed to provide sustainable solutions to displacement in Hirshabelle and Galmudug — particularly the urban centres of Jowhar, Balcad and Beledweyne. Activities were structured across four components: i) community empowerment; ii) urban resilience; iii) livelihoods and employment; and iv) gender and women's empowerment.	• Under the Urban Resilience component, the project developed tools, urban profiles, base maps and city resilience plans for Jowhar[203] — with a similar process planned for Afgooye[204]. • The Somalia Disaster Management Agency — with technical support from Sadar — subsequently produced a district-level resilience plan for Jowhar, identifying several NbS measures for flood and drought mitigation. • Proposed project expands on earlier work by targeting additional geographies — including Afgooye and rural catchments — and embedding mechanisms for national policy alignment and replication (Output 3.2).	• Knowledge products, resilience plans and technical assessments will inform the plans for sub-catchment management (Output 1.2) and urban greening (Output 1.3),both of which require spatial data and participatory diagnostics. • Community planning mechanisms and governance structures established by the UNDP project will be leveraged to support the training of local committees for NbS maintenance (Output 1.4). • In collaborative platforms the proposed project's planning protocols and institutional capacity-building measures (Output 1.1) will be aligned with guidelines developed under the urban resilience component. Gender-responsive approaches from the earlier project will be reviewed and adapted to enhance the proposed project's public awareness and advocacy efforts (Output 3.2).
The Joint Programme on Local Governance and Decentralised Service Delivery in Somalia (JPLG) 2018–2024[205] **Budget: US$150 million**. **Funding:** Denmark, the EU, Norway, Sweden Switzerland, USAID, the UK and the UN Peacebuilding Fund. **IA:** UN Capital Development Fund (UNCDF), the International Labour Organisation (ILO), UNDP, UN-Habitat and UNICEF. • Supports local governance across Somalia, focusing on policy reform, institutional capacity development and citizen inclusion. • Formed District Councils, establishing local governance structures for democratic and accountable governance.	• Developed an adaptation plan for local governments that identified NbS as a suitable measure for reducing flood and drought risks in target areas[206], contributing to an enabling environment for local adaptation action. • District-level planning in the JPLG provides a foundation for integrating the proposed project's Sub-catchment Management (Output 1.2) and Urban Greening Plans (Output 1.3), ensuring alignment with broader local development objectives. • Focused on improving institutional governance capacity — rather than technical design or infrastructure delivery.	• District Councils and participatory planning mechanisms directly support institutional coordination (Output 1.1) and local committee formation (Output 1.4) within the proposed project. These mechanisms enable efficient community-led implementation and long-term management of NbS interventions within proposed project sites
Programme for Sustainable Charcoal Reduction and Alternative Livelihoods (PROSCAL), 2016–2023[207] **Budget:** US$8.9 million. **Funding:** EU, Swedish and Italian cooperation. **IA:** UNEP, UNDP and FAO • Designed to i) reduce unsustainable charcoal production, trade and use; and ii) promote energy security and sustainable livelihoods. • Built government capacity, developed alternative energy sources, established nurseries and reforestation schemes and formed Regional Economic Partnerships to support the enforcement of Somalia's charcoal export bans.	• Although the project did not explicitly focus on climate adaptation or the use of NbS for flood and drought risk reduction, it used afforestation and rehabilitation of degraded land to improve energy access and support livelihoods.	• Nurseries established under PROSCAL and its experience with vegetation restoration provide useful reference points for the proposed project's activities focused on revegetating *desheks* and topographic depressions to increase infiltration and reduce flooding (Output 2.4).

[202] UNDP. 2019. Factsheet Midnimo-II (Unity): Support for the Attainment of Durable Solutions in Areas Impacted by Displacement and Returns, in Galmuduug and Hirshabelle. https://www.undp.org/sites/g/files/zskgke326/files/migration/so/db1d5ab8d8c6485325f23fabda74854179a7d1c189091ef33fe3a47d8a1c6991.pdf
[203] UN-Habitat. 2021. Jowhar: resilience plan. https://reliefweb.int/attachments/f871b0ca-5aa5-34d0-b5cd-95a96566629b/JOWHAR_resilience_plan_.pdf
[204] Maestre PF & UN HABITAT. 2020. Beledweyne Urban Profile Working Paper and Spatial Analyses for Urban Planning Consultations and Durable Solutions for Displacement Crises.
[205] UN Somalia Joint Fund. 2024. JPLG III integrated Final Report. https://mptf.undp.org/sites/default/files/documents/2024-07/jplg_iii_integrated_final_report_02.2024.pdf
[206] 16 districts in Somaliland, 11 districts in Puntland, 5 districts in Galmudug, 3 districts in Hirshabelle, 2 districts in Jubaland, 6 districts in South West and 16 districts in Mogadishu.
[207] UNEP. n.d. Programme for Sustainable Charcoal Reduction and Alternative Livelihoods (PROSCAL). https://wedocs.unep.org/bitstream/handle/20.500.11822/27700/ProscalFactSheet.pdf

Coordination with ongoing projects

Table 14. Coordination with ongoing projects.

Project	Complementarity	Coordination with other projects
Programme to Build Resilience for Food and Nutrition Security[208] (BREFONS), 2022–2029. **Budget:** ~US$18.9 million. **Funding:** African Development Bank (AfDB). **Implementing Agency (IA):** Intergovernmental Authority on Development (IGAD) • Focuses on improving living conditions of rural communities and their livestock by increasing access to water, pasture, animal health services and markets. • Part of a broader regional resilience strategy, targeting food and nutrition security across the Horn of Africa.	• Both projects support climate-resilient water access and rangeland management. BREFONS's work on constructing and rehabilitating water mobilisation infrastructure aligns with the proposed project's use of multi-functional NbS infrastructure for drought resilience (Output 2.1). BREFONS implemented rangeland rehabilitation and management activities, which provide practical insights for the proposed project's planned interventions under Output 2.2, including community-based land stewardship and restoration of degraded areas. • The proposed project has an expanded focus on urban–rural catchment planning, hybrid grey–green infrastructure and a dedicated framework for national scaling of NbS practices (Outcome 3), distinguishing it from BREFONS's primarily rural and livestock-focused interventions.	• Coordination through technical exchanges and regional platforms hosted by IGAD, particularly those focused on gender-responsive planning, institutional capacity-building and regional knowledge sharing. • Proposed project's focus on capacity development, gender-responsive public awareness and gender-inclusive implementation will engage with capacity training materials developed by BREFONS for government and institutional staff. These materials include modules on policy integration, analysis, EWS and the Gender Action Learning System (GALS). • Proposed project will engage with BREFONS's regional coordination teams on gender and social equity to align community engagement strategies and ensure policy consistency in addressing socio-cultural barriers in agropastoral systems (Outputs 3.2). • Collaboration through shared research outputs, gender assessments and advocacy materials will strengthen the proposed project's policy and communications strategy (Output 3.2). Joint participation in IGAD-led resilience forums will facilitate cross-project learning in Output 3.1.
Promoting Inclusive Water Management in Somalia's River Basins, 2023–2026 **Budget: ~US$9.7 million.** **Funding: Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ) and the EU.** **IA: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).** • Supports climate-resilient water management in the Juba and Shabelle River basins through institutional capacity-building, coordination strengthening and implementation of water strategies. • Interventions include flood protection using NbS, piloting water storage and distribution innovations and promoting gender-transformative practices in water governance, agriculture and enterprise development.	• Geographic overlap provides opportunities for synergy and scaling up of efforts towards flood resilience and sustainable water access • Earlier project's NbS-based flood mitigation infrastructure complements the proposed project's design and deployment of V-shaped weirs, sand dams and solar-powered water systems for reducing climate-related water risks (Output 2.1). • Development and expansion of water strategies in the earlier project aligns with the proposed project's support for policy reforms and institutional frameworks promoting NbS at national and sub-national levels (Output 3.1). • Both projects promote gender-responsive planning. Proposed project introduces a broader focus on participatory greening committees and advocacy platforms that extend beyond the water sector (Outputs 1.4 and 3.2) as well as a replication and investment mobilisation component (Outcome 3), This complements Water Innovation Centre and policy pilots in the GIZ project.	• Coordination through inter-agency platforms and technical working groups focused on river basin planning, flood resilience and institutional water governance will provide opportunities for joint planning, data exchange and alignment of infrastructure design and community engagement models (Outputs 2.1 and 1.4). • Proposed project will engage with the Water Innovation Centre, which serves as a shared space for piloting, testing and disseminating water management innovations. Engagement will support the integration of the proposed project's hybrid NbS technologies and promote their uptake through Outcome 3. • Baseline survey and gender-transformative approaches being implemented under the ongoing project will directly inform the proposed project's development of a gender-responsive public awareness and policy advocacy strategy (Output 3.2). • Collaborative forums will contribute to the proposed project's documentation, knowledge-sharing and scale-up processes under Outputs 3.1–3.2.
Building Resilient Communities in Somalia (BRCiS III), 2024–2028 **IA:** Consortium of NGOs and national partners.	• Both focus on reducing community vulnerability, with different approaches to resilience. BRCiS III supports broad-based resilience and social cohesion, while the	• Using lessons from BRCiS III's participatory structures and facilitation models, the proposed project will build on BRCiS III's existing efforts in community mobilisation.

[208] IGAD. 2021. Programme to Build Resilience for Food and Nutrition Security in the Horn of Africa. AfDB, Abidjan, Côte d'Ivoir. https://projectsportal.afdb.org/dataportal/VProject/show/P-Z1-C00-073. Accessed on: 2 May 2025.

• Continuation of a long-term project to strengthen community resilience in Somalia, • Supports locally led approaches to reducing vulnerability, with an emphasis on inclusive natural resource management, community regeneration and conflict-sensitive development.	proposed project focuses on climate risk reduction through NbS and hybrid infrastructure. Both projects promote community-led natural resource management and regeneration, offering conceptual alignment despite minimal expected geographic overlap. • Proposed project introduces a more specialised emphasis on ecosystem restoration with hybrid infrastructure and urban-rural catchment planning that complements the broader, multi-sectoral scope of BRCiS III.	• Knowledge exchange through existing platforms, including the IGAD Support Platform on Durable Solutions, the Somalia NGO Consortium and peer learning forums linked to national adaptation planning. To share experiences, tools and evidence from NbS interventions, EARNSS will participate in innovation-sharing mechanisms such as the Somali Resilience Innovation Hub (RIHUB), Somali Response Innovation Lab (SomRIL) and PANORAMA. • EARNSS will leverage and adapt training tools developed by BRCiS and build on existing community committees and engagement processes to avoid duplication and reduce transaction costs (Outputs 1.4 and 4.2).
Adaptive Agriculture and Rangeland Rehabilitation Project[209] (A2R2), 2023–2028 **Budget:** ~US$40 million **Funding:** GEF **IA:** International Fund for Agricultural Development (IFAD), the GEF7–LDCF and the Global Agriculture and Food Security Program (GAFSP). Project in Southern Somalia structured around four components, namely: • adaptive climate-resilient hydraulic infrastructure and productive livelihoods; • landscape approach to integrated management of rangeland and forest ecosystems for land degradation neutrality and biodiversity conservation; • institutional strengthening for sustainable land management and biodiversity protection; and • knowledge sharing for systematisation and scaling up of effective approaches.	• Both projects focus on landscape-scale restoration, drought resilience and climate-smart land management. While A2R2 did not include V-shaped weirs or sand dams, its hydraulic infrastructure and technical assessments will inform the proposed project's water system design and drought-resilience interventions (Output 2.1). • Both projects support rangeland rehabilitation using climate-smart and community-led methods. A2R2's work on restoration planning, native species inventories, sustainable pasture management and incorporation of indigenous knowledge offers valuable reference points for interventions proposed in Outputs 2.2 and 2.3. • While A2R2 places greater emphasis on agricultural production systems and biodiversity conservation, EARNSS introduces novel hybrid infrastructure solutions and a structured plan for scaling NbS (Outcome 3), which complements A2R2's knowledge sharing component.	• The proposed project will coordinate with A2R2 through technical exchanges on rangeland planning, where outputs such as the georeferenced land use tracking system, nursery infrastructure and pasture management plans may be applied or adapted to the proposed project's landscape activities (Outputs 2.2–2.5). Agroecological field schools established by A2R2 will be engaged to support training on climate-smart land management practices and to inform the proposed project's approaches to farmer engagement and institutional learning (Outputs 2.2 and 1.4). • Lessons learned from A2R2's monitoring and evaluation plan, grievance redress mechanisms and communication strategy will be reviewed and selectively adapted to the proposed project's own operational structures (Outputs 4.1 and 4.2). • Coordination will be pursued through joint knowledge platforms, forums hosted by IFAD or GEF implementing partners and other multi-project learning initiatives related to land degradation neutrality and adaptation planning.
Building Urban Resilience and Transitioning to Green Economy in Somalia, 2024–2026. **Budget: ~**US$50.3 million **Funding:** GEF **IA:** UNDP • Supports the implementation of NbS in climate-vulnerable urban areas through integrated spatial planning that engages urban institutions, communities and IDPs. • Promotes the incorporation of NbS into national and local urban planning processes and introduces the sponge city concept, which combines engineered systems with NbS to manage stormwater, reduce flood risks, create green corridors and improve heat resilience and urban well-being.	• Thematic overlap in the projects' support for urban resilience, NbS and climate-informed spatial planning. Both projects promote the use of green infrastructure and nature-based interventions to reduce urban flooding and heat stress, and both address the integration of NbS into planning and policy frameworks. • The adaptation of the sponge city concept in the UNDP project aligns with the proposed project's implementation of green corridors, drainage systems and multifunctional green infrastructure in urban areas (Outputs 1.2 and 1.3). The proposed project, however, introduces additional innovations by embedding hybrid infrastructure models that combine NbS with solar-powered pumping and water distribution systems for both urban and rural resilience (Output 2.1). EARNSS also includes a targeted strategy for upscaling, replication and investment promotion (Outcome 3),	• Coordination with ongoing project through engagement in the multi-sectoral coordination body being established to support cross-sectoral decision-making with gender parity. This platform will be used to align institutional strengthening efforts and enable joint planning across initiatives (Outputs 1.1 and 4.2). Technical exchange between implementing agencies will ensure synergy between NbS training programmes implemented in the GEF urban resilience project — particularly those focused on women's leadership — and training content and gender-responsive engagement activities in the proposed project (Outputs 1.1, 3.2 and 4.1). • Proposed project will collaborate on the national communications strategy and knowledge-sharing platform being developed to promote NbS. These platforms will enhance the dissemination of project results, methodologies and policy lessons from both projects, feeding into awareness, advocacy and replication efforts (Outputs 3.2 and 4.1). Ongoing coordination will ensure project interventions are consistent with national urban resilience priorities

[209] IFAD. 2023. Adaptive Agriculture and Rangeland Rehabilitation Project (A2R2) — Somalia. GEF, Washington DC, USA. https://www.thegef.org/projects-operations/projects/10792

	which complements but goes beyond the scope of this urban-focused GEF initiative.	while applying NbS in rural and urban areas in the Shabelle River basin.
The Jowhar Offstream Storage Programme (JOSP, 2024–2029) **Funding:** the UK, USAID, the UN Peacebuilding Fund and the Somalia Joint Fund (SJF). **IA: FAO, UNEP, UN-Habitat, IOM and UNIDO** • Multi-partner initiative led by the Government of Somalia, particularly the Ministry of Agriculture and Irrigation (MoAI) and the Ministry of Energy and Water Resources (MoEWR). • Aims to mitigate drought and flood impacts and enhance food security and climate resilience along the Shabelle River through infrastructure rehabilitation, improved water governance and NbS. JOSP comprises four interlinked projects — RESTORE, TRANSFORM, MAAREYANTA and Youth-Act PBF — with combined interventions expected to benefit 1.65 million people across five districts in Hirshabelle and South-West States.	• The proposed project and JOSP both focus on enhancing resilience in flood- and drought-prone areas of the Shabelle River Basin, particularly through nature-based infrastructure and inclusive water governance. However, the proposed project introduces additional innovations in NbS design, hybrid infrastructure and urban–rural integration. • While JOSP prioritises the rehabilitation of major irrigation systems and conflict-sensitive resource governance, the proposed project embeds a replication and investment mobilisation strategy (Outcome 3) to scale NbS across districts and sectors. It also expands intervention sites to include Afgooye and rural catchments not directly targeted by JOSP, while aligning closely with JOSP in areas such as Jowhar.	• Coordination will be pursued through joint planning with JOSP's governance bodies and thematic working groups — including those on water governance, NbS and gender inclusion. • Proposed project will draw on resilience baselines and SHARP+ data from JOSP to inform site selection, community mobilisation and capacity development programmes (Outputs 1.1–1.4). It will engage with JOSP's youth advisory platforms and institutional mechanisms to align local committees, avoid duplication and strengthen participatory implementation of NbS. • Best practices from JOSP on infrastructure maintenance, cooperative models and integrated land–water planning will inform the proposed project's deployment of multi-functional NbS infrastructure, such as sand dams and vegetated drainage systems (Outputs 2.1–2.4). Knowledge exchange will be supported through shared monitoring frameworks and learning platforms under Output 4.1.
Local Climate Adaptive Living Facility (LoCAL), 2011–ongoing • Global programme managed by the UNCDF which began implementation in Somalia in 2022. • Supports the localisation of climate adaptation by combining Performance-Based Climate Resilience Grants (PBCRGs) with technical assistance and institutional capacity-building. • Intends to strengthen local governance systems and integrate climate risk into subnational budgeting and planning processes. • Contributes to the implementation of Nationally Determined Contributions (NDCs) and NAP by enabling decentralised delivery of climate adaptation actions and vertical integration between national and local governance structures.	• LoCAL supports climate resilience by developing the institutional and fiscal architecture required for effective local adaptation. This approach complements the proposed project's activities under Outputs 1.1 and 1.4 by supporting the enabling environment for participatory planning, local committee formation and coordination mechanisms. LoCAL's efforts to align local-level action with national adaptation priorities reinforce the proposed project's focus on policy integration, replication and the scaling up of NbS (Outputs 3.1 and 4.1). • LoCAL does not finance or implement site-based interventions, distinguishing its scope and modalities from those of the proposed project, which focuses on implementing hybrid NbS.	• Interventions under the proposed project will offer tangible pathways to integrated water resource management and resilience against droughts and floods. Those outcomes will be pursued by constructing sand dams, V-shaped weirs and solar-powered water pumps Output 2.1) as well as by developing Sub-catchment Management Plans and Urban Greening Plans (Outputs 1.2 and 1.3).

I. Learning and knowledge management

203. The proposed project embeds a Knowledge Management Plan that promotes adaptive management and supports the replication and upscaling of Nature-based Solutions (NbS) and hybrid solutions across Somalia and neighbouring countries. Evidence-based examples and lessons learned to reduce vulnerability to droughts and floods will be provided to stakeholders[210] as part of the Knowledge Management Plan. The proposed project will disseminate these examples and lessons learned to stakeholders, enabling the replication of similar interventions across the broader region. The Project Management Unit (PMU), through the M&E Officer, will oversee knowledge management efforts across all three project components. An overview of the learning and knowledge management activities across project components is provided in Table 15.

204. The Knowledge Management Plan of the proposed project will be developed by the PMU during implementation in consultation with the National Climate Fund (NCF) in the Ministry of Finance as the AF coordination entity, as well as with other line Ministries and partners. The plan will comprise: i) a results framework with target indicators tracking the gender-disaggregated number of stakeholders trained across institutions and communities, the number and type of knowledge products disseminated and the replication of NbS models in non-target areas; ii) a list of all knowledge products to be generated during implementation, including an approximate timeline for their delivery and explanation of stakeholders targeted; iii) a framework detailing which communication channels will be used to disseminate knowledge products, and how these will be used; iv) project branding ensuring compliance with UNEP's name and logo usage, and corporate communication guidelines and v) protocols on the operations and maintenance of the Knowledge Management Platform to be developed under Activity 3.1.3, including its role in supporting further NbS and hybrid solutions interventions following project completion. Regular review of the Knowledge Management Plan throughout implementation will ensure adaptive learning and refine the Plan based on feedback and evolving needs.

205. Throughout the project timeline, knowledge will be shared via radio, the knowledge management platform and social media. Knowledge products developed under Component 3 will be disseminated through platforms such as the Adaptation Learning platform, FEBA, UNEP's Global Adaptation Network and NbS knowledge platforms. Collaborations with institutions such as SWALIM and universities will provide ongoing support and information maintenance post-project, while also supporting research on effectiveness, benefit quantification and cost–benefit analysis. Collectively, these efforts ensure that knowledge generation, exchange and use are embedded across all components and stakeholder groups, enabling adaptive management and the sustained scaling of NbS.

[210] Stakeholders include government ministries and agencies, district authorities, community representatives, development partners, international and national NGOs, technical partners and the private sector in Somalia.

Table 15. Summary of learning and knowledge management activities across project components.

Component	Knowledge management outputs	Primary stakeholders	Outcome
Component 1 focuses on strengthening institutional and community capacity for the planning and implementation of NbS.	• Development of capacity development programmes that provide protocols for integrating NbS and hybrid solutions into flood and drought management (Output 1.1). • Preparation of rural and urban Adaptation Management Plans that consolidate local knowledge and climate risk information for use by governments and communities (Output 1.2–1.3). • Establishment or capacitation of six local committees to facilitate knowledge sharing and replication (Output 1.4). • Development of manuals, visual tools and training modules to address knowledge gaps among government and community stakeholders (Output 1.1). • Knowledge generated under Component 1 disseminated through peer exchange visits, radio programming and a digital Knowledge Management Platform to support sustained learning (developed under Outputs 3.1–3.2)	• Federal and state-level ministry staff including the National Climate Fund (NCF) , Ministry of Environment and Climate Change, Ministry of Water Resources and Energy and Ministry of Planning and International Cooperation. Extension officers. • Community representatives including women's groups, youth and pastoralists. • District authorities and NGOs.	• Build institutional and community capacity for the planning and implementation of NbS. • Promote replication of participatory adaptation planning and local committee structures. Improve access to and use of context-specific adaptation knowledge.
Component 2 focuses on implementing NbS and hybrid solutions interventions and generating knowledge to support the protection of productive assets and livelihoods.	• Generation of field-based knowledge through pilot implementation of V-shaped weirs, sand dams and water systems (Output 2.1). • Integration of climate-smart rangeland management practices — such as rotational grazing and reseeding — into pastoralist training (Output 2.2). • Documentation of soil bunds, revegetated embankments and urban drainage interventions as learning sites (Outputs 2.3–2.6). • Production of technical posters and visual guides to support replication of Outputs 2.1–2.6. • Delivery of awareness campaigns on waste management that draw on urban Adaptation Management Plans to demonstrate good practices in flood prevention (Output 2.6).	• Technical staff • Local communities • Urban stakeholders • Pastoralist and agropastoralist groups	• Support hands-on learning and farmer-to-farmer exchange • Generate site-based lessons for replication • Promote behaviour change in waste management
Component 3 strengthens the enabling environment for upscaling and sustaining NbS and hybrid adaptation solutions by embedding learning, evidence and policy support into project implementation.	• Lessons learned and best practices documented and disseminated (Output 3.1) • Performance and cost-effectiveness evidence shared to inform investment (Output 3.1) • Policy reform and incentive packages developed and communicated (Output 3.2) • Gender-responsive awareness campaigns delivered (Output 3.3	• Policymakers • National and sub-national institutions • Development partners • Vulnerable communities	• Inform planning and investment decisions • Support national upscaling of NbS • Foster institutional learning and public support
Component 4 functions as the core knowledge management component.	• Implementation of the Knowledge Management Plan — including gender-responsive products in English and Somali — and dissemination through both digital and in-person channels (Output 4.1). • Knowledge management and M&E systems used to track learning, performance and replication • Results shared to inform adaptive management and project reporting	• Project Management Unit • Implementing and executing entities • Government stakeholders • Development partners	• Improved quality, accessibility and uptake of knowledge products • Evidence-based adaptive management and replication

J. Consultative process

206. The consultative process for the proposed project was structured to ensure compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund. The process was led by the Sadar Development and Resilience Institute (Sadar) in partnership with the United Nations Environment Programme (UNEP), consulting a variety of stakeholders (Table 16) to ensure inclusivity, community ownership and alignment with local needs and international safeguards were prioritised.

Table 16. Distribution of stakeholder types consulted.

Categories of participants	Number of participants	Women (%)	Men (%)
Community Committee members, elder and other local leaders	14	14	86
National, state, district and municipal authorities	32	22	78
Women and youth group members	14	79	21
Farmers and agropastoralists	17	47	53
Private sector/businesspeople	5	0	100
Development organisations and NGOs	19	10	90
Other	40	50	50
Total	141	35	65

Summary of consultations

207. The proposed project interventions were presented to representatives of the Federal Government of Somalia, including the Ministries of Environment and Climate Change (MoECC) and Energy and Water Resources (MoEWR) at an Inception Workshop in Mogadishu on 5 May 2025. Following this, key informant interviews (KIIs) were held in Mogadishu and online with representatives from FAO, Sadar and other regional development agencies to inform site selection and guide the development of the proposed interventions.

208. Following the Inception Workshop, National Consultants (NCs) attended district consultations in Beledweyne Town, Jowhar Town and Afgooye Town. District Consultations were organised by Sadar and included representatives of appropriate departments and agencies within district governments. These were undertaken to identify high-level priorities for climate adaptation and obtain information on: i) district and community policy and strategy integration; ii) technical capacity of institutions; iii) monitoring and evaluation; and iv) knowledge management. The NCs subsequently visited proposed project sites in the Beledweyne, Jowhar and Afgooye districts to assess: i) gender considerations; ii) conflict risks and risk management approaches; iii) current adaptation interventions implemented or under implementation and their benefits and challenges; iv) recommendations for project activities; v) the presence and vulnerability of differential groups; and vi) the preferred methodology for ongoing engagement during implementation. The community consultations were restructured as focus group discussions (FGDs) targeted at a broad variety of community stakeholders, including farmers, pastoralists, community-based organisations (CBOs) and women and youth groups. These FGDs used a combination of structured and open-ended discussion points.

209. Prior to dissemination of questionnaires and commencement of FGDs and KIIs, stakeholders were informed about: i) who the consultants were; ii) what the project is about; iii) what the timeline will be; iv) any uncertainties related to the project; v) the reason the consultants are undertaking the interview; and vi) the next steps following the consultations. To mitigate potential stakeholder fatigue and enable community members to share their perspectives during consultations, an adaptive approach was used that targeted specific subsets of questions appropriate to each stakeholder group. For example, questions regarding the roles of and potential impacts on women in the proposed interventions were allocated more time in discussions with exclusively female groups.

210. A final Validation Workshop was held in Mogadishu on 7 July 2025, attended by stakeholders including ministry representatives at the national, federal member state and district level as well as Sadar and UNEP to confirm alignment of the project design with stakeholder priorities. The results of these consultations were used to: i) further revise and update project design and interventions; ii) assess possible environmental and social impacts; and iii) adapt intervention design to minimise negative impacts on local stakeholders. Refer to Annex 2: Stakeholder Engagement Plan for: i) descriptions of consultation techniques; and ii) a summary of the points raised by stakeholders during all consultations.

Incorporation of stakeholder guidance in project design

211. Overall, consultations during the project development influenced the design of the project in several important ways. First, stakeholders in the Inception Workshop gave guidance on some of the technical aspects of the project, including which innovative NbS were best suited in the context of each target district in the Shabelle bassin. Inception Workshop attendees also noted the logistical challenges in districts. Second, key informants (KIs), particularly FAO, were helpful in identifying how the proposed project could avoid duplication with other projects. FAO also assessed the feasibility of several proposed solutions, provided useful contacts for further interview and gave guidance on the preliminary site selection of interventions. Other KIs, such as representatives from the Berghoff Foundation and International Organization for Migration (IOM), gave useful guidance the social dynamics and conflict-avoidant project design that resulted in the formulation of community committees and informed their function. In addition, both IOM and City University of Mogadishu noted the scarcity of a national seed bank in Mogadishu — which resulted in the consideration of the use of the seed bank being hosted by the university, although this has been excluded from the project description given the uncertainty of the seed bank's completion date — and gave guidance that informed the inclusion of the nurseries under Output 2.2. Last, community consultations confirmed the adaptation priorities for communities in each of the target districts, which aligned well with the project design at that stage. In addition, communities identified the social hierarchy structures predominating in each district and gave specific information on what groups already existed that could function as community committees.

Consultation during implementation

212. During the project implementation phase, further consultations and discussions will be held with all community stakeholder groups included in the first set of community consultations, as well as potential further consultations at the federal state and district level[211]. This iterative approach to the consultative process will enable appropriate stakeholders to provide specific perspectives and details to guide implementation while also keeping stakeholder informed of the potential benefits and risks of the project and maintaining lines of communication, thereby increasing community ownership of and commitment to project interventions.

K. How the project draws on multiple perspectives on innovation

Researchers

213. The project relies on research undertaken by two groups of researchers: i) the Ministry of Energy and Water Resources (MoEWR) with technical assistance from the UNEP-DHI; and ii) UN-Habitat's urban profiles and urban resilience plans developed in partnership with the local governments (LGs) of Beledweyne[212,213] and Jowhar[214,215]. The MoEWR research focused on flood management strategies, flash flood risk assessments, and NbS for flood and drought mitigation. This research yielded a catalogue of tested NbS measures, identified V-notch weirs and sand dams as highly effective for aquifer recharge and flood mitigation and developed prioritisation indicators for NbS based on flood mitigation potential. The findings in the MoEWR research have informed the proposed project's selected NbS measures.

214. UN-Habitat conducted risk analyses for Beledweyne and Jowhar in their urban resilience plans, focusing on flood-prone areas, including IDP areas. The resilience plans recommended short, medium and long-term interventions to reduce vulnerabilities and increase resilience at various scales — from peri-urban areas to neighbourhoods. The project's Component 2 interventions are designed according to the short-term recommendations.

215. Technical staff from partner organisations, including line ministries, development partners, SWALIM, and NGOs like Sadar, provided inputs based on their knowledge of climate change challenges and adaptation in Somalia. These views were obtained during the consultation process of project design. The conclusion from these discussions was that NbS indeed provides a 'low risk' option for climate change adaptation in the country.

[211] Refer to Part III, Section A: Implementation Arrangements for details on the framework for stakeholder feedback during implementation.
[212] UN-Habitat. 2020. Beledweyne Urban Profile 2020. https://unhabitat.org/beletweyne-urban-profile-2020.
[213] UN-Habitat. 2020. Beledweyne Working Paper on Flood Risk and Urban Resilience. https://unhabitat.org/sites/default/files/2020/09/beledweyne_resilience_final.pdf.
[214] UN-HABITAT. 2020. Jowhar Urban Profile. https://unhabitat.org/sites/default/files/2020/12/jowhar_urban_profile_1.pdf.
[215] UN-Habitat. 2021. Jowhar Resilience Plan. https://unhabitat.org/jowhar-resilience-plan.

Lessons from other projects

216. The project has been informed by several lessons from similar initiatives (Table 14), particularly focusing on generating carbon credits from soil carbon. It will leverage experiences from initiatives such as the Northern Rangeland Trust of Kenya[216], and Boomitra[217], during the project's formulation and implementation phases. The carbon credit scheme has two objectives: i) to empower resource-poor pastoralists and agropastoralists by enabling them to build and sell carbon assets in a manner that regenerates land and soils while providing financial incentives for sustainable practices; and ii) to assist the Ministry of Environment and Climate Change (MoECC), along with other relevant institutions, in establishing the necessary conditions and policies for effective carbon trading regulation. Given the long-term nature of soil carbon projects (typically more than 30 years), the project will primarily focus on assessing the feasibility of the scheme and facilitating stakeholders to develop a forward-looking strategy.

Communities

217. Vulnerable communities played a significant role in identifying innovative adaptation measures that have in turn informed the design of this project. Draft community resilience plans will be formulated with technical support from Sadar during the project implementation phase to guide the development of watershed and catchment plans under Component 1 once intervention areas are identified.

218. The project design has particularly been informed by the Building Resilient Communities in Somalia (BRCiS) program, which emphasises a learning-by-doing approach and community-led interventions. BRCiS has committed to a bottom-up decision-making model, empowering existing community structures to ensure that programming addresses the needs of vulnerable populations. By the end of its second Phase in 2022, BRCiS had established 194 Community Resilience Committees (CRCs) across 34 districts[218]. These CRCs serve as the core for volunteer committees and associations, representing community members in decision-making processes.

219. This approach has made the program flexible and responsive to community needs and experiences. This project will adopt this bottom-up, learning-by-doing model wherever relevant, thereby providing further opportunities for empowered communities to continue to innovate adaptation. As such, community consultations and training will occur throughout project implementation to form communities of NbS best practices, empower them to adopt NbS and educate community members on NbS protocols. In addition, the proposed project will involve communities in the implementation of several interventions and validate project planning with them to ensure important community data are captured and improve community buy-in.

L. Justification for funding request

220. Climate change impacts — combined with limited fiscal and technical capacity at all government levels — necessitate external support to implement Nature-based solutions (NbS) and hybrid adaptation solutions under the proposed project.

Baseline

221. Under the baseline scenario, technical and institutional capacity to plan and implement NbS remains inadequate, particularly in Hirshabelle, where instability has diverted resources toward humanitarian needs (Component 1)[219]. Agricultural productivity and water availability are declining as climate hazards worsen, while urban centres such as Beledweyne, Jowhar and Afgooye suffer from unmanaged flood risk due to infrastructure deficits, urban expansion and displaced populations (Component 2)[220]. The enabling environment for NbS remains constrained by fragmented policies, weak governance and limited financial incentives, deterring private sector engagement and long-term investment (Component 3). Additionally, a lack of systematic monitoring and evaluation impedes learning and limits the evidence base required to

[216] Northern Rangeland Trust of Kenya projects include: i) Northern Kenya Rangelands Project; and ii) Northern Kenyan Rangelands Carbon Project.
[217] Boomitra. 2023. AI-powered soil carbon project launched in Kenya to support smallholder farmers. https://boomitra.com/soil-carbon-removal-project-kenya-smallholder-farmers/.
[218] Norwegian Refugee Council, 2022: End Term Evaluation Report for – Building Resilient Communities in Somalia, Phase 2.
[219] World Bank Group. 2023. Somalia Climate Risk Review. https://documents1.worldbank.org/curated/en/099062923035034613/pdf/P17624603756190c409e570193ea2ae944d.pdf.
[220] Federal Government of Somalia. 2022. Somalia's National Adaptation Plan Framework. https://napglobalnetwork.org/wp-content/uploads/2022/11/napgn-en-2022-somalia-nap-framework.pdf.

support replication and scaling (Component 4)[221,222].

Additionality

222. The requested US$5 million will enable climate adaptation in the three target districts across three project Components[223][224]. Capacity will be strengthened through inclusive training for communities, institutions and civil society, alongside the development of local governance frameworks and action plans (US$432,387). Climate-resilient infrastructure — including sand dams, weirs, restored embankments and sustainable urban drainage systems — will be established to protect productive assets and reduce flood and drought risks, while rangelands will be placed under climate-smart management practices (US$2,879,733). Structural barriers to NbS investment will be addressed by policy reform, the establishment of a soil carbon credit mechanism and cross-sector collaboration (US$566,451). Last, evidence on the performance, cost-effectiveness and sustainability of NbS and hybrid solutions will be generated and disseminated to inform future investment and policymaking (US$330,901).

Justification of adaptation benefits

223. Unlike a development project that would prioritise service delivery, income and productivity, the proposed project is purpose-built to reduce climate risk and maintain functional social and economic systems under hotter, drier and more variable projected climate conditions. Interventions have been selected and sized through hydrological analysis. These interventions will be further tailored to the geography and hydrology of each specific site during implementation — and detailed in Adaptation Management Plans — to attenuate peak flows, buffer drought and reduce exposure to hazards.

224. In this way, combined sand dams and V-shaped weirs, soil bunds, revegetated embankments and SUDs will deliver avoided damages and reliability under the projected climate. Governance and capacity investments will target adaptive capability, not just service provision: i) ministries, universities and community committees will be trained to plan, operate and maintain NbS to defined climate performance standards; ii) monitoring and modelling will track flood attenuation, infiltration and rangeland recovery so that designs can be adjusted as conditions change; and iii) the cost-recovery mechanism and policy measures will incorporate climate-responsive O&M into budgets and guidelines, including in the Adaptation Management Plans. Social inclusion measures will lower sensitivity by ensuring women and other vulnerable groups can access and help govern water, rangeland and drainage assets during stress periods. Economic development gains — cash-for-work, time savings due to reduced water collection times, improved pasture productivity and opportunities from waste reuse — will follow. However, these benefits are specifically designed based on the adaptation needs identified through consultations with communities as well as other stakeholders during the development process (see Part II, Section J). In addition to these benefits, the proposed interventions are more cost-effective than grey alternatives that would be implemented in a without-project scenario where public resources were available (see Part II, Section E).

225. The project's adaptation advantage is ensured by risk-informed siting and sequencing, performance monitoring tied to climate metrics and institutional reforms that embed learning and replication, so benefits persist and scale even as climate hazards intensify. Finally, the adaptation benefits are made explicit to communities and to government through awareness raising, policy recommendations and knowledge generation under Component 3. The capacitation of government to plan and implement NbS, as well as the promotion of NbS rationale in communities, is expected to contribute to the adoption and upscaling of adaptation interventions in Somalia.

M. Project sustainability

226. The long-term benefits of the proposed project will depend on its outcomes being sustained beyond the funding period. To support the sustainability of the proposed interventions, they will need to be embedded in institutional structures and have sustainable financing mechanisms. Additionally, interventions will need to be technically reliable, environmentally appropriate and aligned with the social and economic conditions of the target communities. The project is therefore structured to facilitate sustainability across four interrelated aspects: institutional, financial, environmental and technical, as well as social and economic.

[221] AfDB. 2023. Country Focus Report 2023 Somalia. https://www.afdb.org/sites/default/files/documents/publications/somalia_cfr_2023_web_.pdf.
[222] UNEP. 2022. Nature-based Solutions: Opportunities and Challenges for Scaling Up. https://wedocs.unep.org/bitstream/handle/20.500.11822/40783/nature_based_solutions.pdf
[223] Refer to Part II, Section A: Project components for details on the proposed project Components, Outputs and Activities
[224] Refer to Part III, Section E: Results framework for detailed adaptation benefit indicators, including direct and indirect beneficiaries.

Institutional sustainability

227. Institutional sustainability will be achieved by strengthening the capacities of local institutions, communities and governance systems to implement and maintain the project's outcomes. Output 1.1 will deliver capacity development programmes to federal government stakeholders on integrating innovative nature-based solutions (NbS) and hybrid technologies for flood and drought management into rural and urban planning and policy development. These training workshops will provide high-level government stakeholders with the knowledge and skills to implement and manage adaptation interventions independently. Moreover, Output 1.4 will support the training of six community committees — comprising both men and women — in participatory planning, implementation and monitoring of catchment, watershed and urban greening plans. These community-based structures provide institutional support to sustain local interventions beyond the project's lifespan.

228. Knowledge management and long-term learning mechanisms will further strengthen institutional sustainability, as Output 3.1 will facilitate the systematic collection and dissemination of lessons learned and best practices to support future implementation of NbS across the country. This knowledge management will be supported by continuous collaboration with national and regional institutions, enabling institutions to provide technical support and embed project outcomes in institutional frameworks and policies.

229. A detailed project exit strategy will be developed during the development of the Adaptation Management Plans (Outputs 1.2 and 1.3) in the first and second years of implementation. This strategy will: i) take stock of all project interventions for which operations and maintenance will be required in the long-term; ii) identify which stakeholders will continue operations and maintenance of specific interventions post-implementation, and sign agreements with them if not already done during implementation; iii) develop long-term management plans for the identified interventions, if not already developed during implementation; iv) develop a scaling up and replication strategy for project interventions; and v) identify funding sources of long-term operations and maintenance.

Financial sustainability

230. Financial sustainability will be supported by policy integration, investment mobilisation and local revenue generation from water fees, as wells as additional income expected to be generated with improved natural resource access (see Part II, Section E). For example, Outputs 1.2 and 1.3 will produce three water catchment plans and three urban green infrastructure plans, each with detailed protocols for planning and implementing NbS and hybrid technologies. These outputs will provide frameworks for inclusion of NbS and hybrid solutions in local and national budgeting and development planning, while also decreasing economic losses to flooding and droughts, thereby creating fiscal space.

231. In addition to these city-level plans, Output 3.1 will make recommendations for policy reforms and incentive packages available at national, Federal Member State and local levels. These will support the replication and upscaling of NbS and hybrid solutions, while also guiding budget allocation and securing external funding from development partners. Demonstrating the cost-effectiveness of NbS will therefore be a necessary component of financial sustainability efforts. Similarly, Output 2.6 will demonstrate how improved waste management reduces flooding to strengthen the case for public and private sector investment.

232. The institutional frameworks developed as part of Output 3.1 will sustain a policy environment that supports investments into NbS. For example, in rural sites the implementation of a carbon credit mechanism for climate-smart rangeland management practices — such as VM0042[225] — will be explored under Output 3.1[226] to generate local revenue streams. These and other incentive mechanisms will provide communities with long-term incentives and income opportunities from sustainable land management.

Environmental and technical sustainability

233. Technical sustainability will be provided by the design and implementation of context-appropriate, evidence-based adaptation infrastructure and practices. The majority of NbS — including climate-smart agriculture and climate-smart rangeland management practices, soil bunds and revegetated embankments — will be simple and cost-effective to implement, maintain and replicate by local stakeholders. Appropriate training will be provided to community committees of local stakeholders under Output 1.4. The project will apply NbS approaches proven to be appropriate for the Shabelle River Basin context, informed by the UNEP-DHI NbS

[225] VM0042 refers to Verra's Methodology for Improved Agricultural Land Management. This methodology provides a framework for quantifying greenhouse gas emission reductions and removals achieved through the adoption of improved agricultural land management practices, including improved grazing management on rangelands.
[226] This carbon mechanism will be modelled after the successful Northern Kenya Rangelands Carbon Project.

catalogue[227]. Moreover, Outputs 1.2 and 1.3 will serve as technical guides for the implementation of flood and drought control systems at catchment and urban scales, integrating protocols that maintain infrastructure resilience and functionality over time.

234. The project will also improve ecosystem function using several restoration and conservation interventions, informed by an Environmental and Social Management Framework (ESMF)[228]. Under Output 2.3, at least 200 ha of soil bunds will be developed to reduce soil erosion and water runoff, whilst Output 2.4 will establish or restore at least 130 ha of flood control forests and hedgerows in riparian areas. The restoration of rangelands under Output 2.2 will also support soil regeneration and climate-smart land use. These interventions will strengthen the resilience of ecosystems to climate change hazards such as drought and flooding by increasing soil moisture retention, regulating local water cycles and reducing landscape degradation. More resilient ecosystems will consequently increase local biodiversity by creating or rehabilitating habitats for native flora and fauna, supporting ecological connectivity[229] and further restoring ecosystem resilience[230]. All infrastructure and ecosystem restoration efforts will be supported by technical capacity-building and embedded maintenance systems, supporting their continued function and environmental benefit beyond project implementation.

Social and economic sustainability

235. Social and economic sustainability will be advanced by inclusive planning, equitable resource distribution and livelihood support interventions, to be achieved by the development of a Gender Mainstreaming Plan[231], Stakeholder Engagement Plan (SEP)[232] and ESMF[233] prior to project implementation. These documents will guide implementation to ensure appropriate participation of marginalised groups, including IDPs, women, youth and people with disabilities.

236. The project will apply social procurement principles, particularly by using Cash-for Work (CfW) in the construction of NbS and hybrid infrastructure. These interventions will generate short-term employment and build community assets while contributing to local economic sustainability by providing skills development and temporary livelihoods. Moreover, these CfW programmes will be designed to promote gender equity and social inclusion, supported by monitoring to ensure fair, safe and representative labour conditions and maintain transparency in cash transfers. The CfW programme will thereby contribute to the representation and empowerment of marginalised groups within local social structures, which will have long-term benefits for community stability and complement the project's benefits of increased livelihood resilience.

237. Socially cohesive and resilient communities will be further supported by Outputs 3.1 and 3.3 — as Output 3.1 will promote the dissemination of inclusive practices and lessons learnt, whilst Output 3.1 will develop strategies for efficient, gender-responsive and equitable use of project resources. These outputs will sustain behavioural change and enable communities to continue adapting to climate variability and socio-political challenges.

N. Environmental and social risks and impacts

238. The proposed project's interventions were evaluated against both the United Nation Environment Programme's (UNEP) Environmental and Social Sustainability Framework (ESSF) and the Adaptation Fund's (AF) environmental and social principles (ESPs) to identify potential adverse impacts and risks on ecosystem functioning, biodiversity, local livelihoods and social structures that may emerge as a result of project activities. Although most project impacts on are projected to be positive, specific interventions generate limited risks and will potentially result in environmental and social impact. An evaluation of the project against each of the 15 AF ESPs is summarised in Table 17. Further information on this evaluation, including the screening against the UNEP ESSF is included in the ESMF[234] and Part III, Section C: Environmental and social risk management.

[227] UNEP-DHI. 2022. Sustainable Flood Management and Risk Reduction Action. Applicability of Nature-based Solutions for Flood and Drought Management in Somalia: Final Report. https://unepdhi.org/wp-content/uploads/sites/2/2022/05/Somalia_NbS_Final_NbS_Report.pdf. Accessed on: 23 April 2025.
[228] Refer to Annex 4: Environmental and Social Management Framework.
[229] The degree to which organisms and natural resources can move between environments and consequently facilitate ecosystem services across broad areas.
[230] Biodiversity has positive feedback on ecosystem resilience through, *inter alia*, ecological processes such as pollination, herbivore control, maintenance of food webs, control of vegetation and increased genetic diversity.
[231] Refer to Annex 5: Gender assessment and action plan (GAAP)
[232] Refer to Annex 3: Stakeholder Engagement Plan (SEP)
[233] Refer to Annex 4: Environmental and Social Management Framework (ESMF)
[234] Refer to Annex 4: Environmental and Social Management Framework (ESMF)

239. Based on the environmental and social screening, the Enhancing Adaptation and Resilience through nature-based solutions (EARNSS) project is classified as Category B under the AF ESP. This classification reflects the expectation that most project impacts will be positive, with any potential adverse impacts expected to be site-specific, reversible and readily mitigated.

Table 17. Checklist for compliance with environmental and social principles.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	X	While the project is designed to comply with Somali law and international commitments — such as International Labour Organisation (ILO) conventions — weak regulatory systems and informal land-use practices may result in inadvertent non-compliance or ambiguous legal interpretation. In order to mitigate these risks, all project activities will be screened to identify legal obligations regarding land use, environmental impacts and labour. UNEP and Sadar will oversee screening to verify compliance with national laws and safeguard obligations, and ensure alignment with ILO standards and Somalia's Labour Code in all cash-for-work (CfW) and contracted work arrangements.
Access and Equity	X	The project promotes equitable access to benefits; however, risks include potential gatekeeping by clan structures, exclusion of certain groups from CfW opportunities or infrastructure benefits, and limited accessibility of grievance mechanisms. Adaptive management and participatory planning will ensure inclusive stakeholder engagement, quota-based representation, and the operation of accessible GRM structures at district level.
Marginalised and Vulnerable Groups	X	There is a moderate risk of exclusion of Somali Bantu, minority clans, IDPs, women and persons with disabilities due to structural inequality and discriminatory norms. The project's Stakeholder Engagement Plan ensures targeted outreach, representation thresholds, and culturally appropriate engagement to promote inclusion. Continuous monitoring will verify participation equity through adaptive management.
Human Rights	X	Risks include exclusion from participation or benefits due to discrimination based on clan affiliation, gender, displacement status or ethnicity. Weak trust in formal accountability mechanisms may suppress grievances from vulnerable groups. Mitigation measures include Inclusive engagement practices designed to mitigate discrimination, training for community facilitators on non-discrimination , implementation of a grievance redress mechanism GRM).
Gender Equity and Women's Empowerment	X	Gender norms may limit women's participation in CfW and decision-making. Risks of SEAH exist if safeguards are not applied. Mitigation measures include quotas for women in governance structures, gender-responsive recruitment, use of female facilitators, and SEAH prevention and response protocols. Monitoring and adaptive management will ensure sustained gender mainstreaming.
Core Labour Rights	X	Risks include lack of written contracts for CfW or community labour, inadequate health and safety protections, possible child labour, and discrimination in hiring. . During hiring and CfW activities, gender-responsive and non-discriminatory recruitment practices, age verification and spot checks will be applied to prevent child labour. During CfW activities, occupational health and safety measures will be implemented, such as the provision of training, and protective equipment will be provided.
Indigenous Peoples	X	No risk. No groups meeting the criteria for Indigenous Peoples are present in the project areas. Somali Bantu and other minority groups are included under "Marginalised and Vulnerable Groups." FPIC principles will be respected where communities self-identify as Indigenous.
Involuntary Resettlement		Moderate risk of economic displacement due to potential restriction of access to land or resources. The project will avoid involuntary resettlement. Screening using UNEP's SRIF and Livelihood Action Plans will mitigate risks, ensuring community-led validation, negotiated access, and compensation where necessary. Adaptive management will enable activity redesign or relocation if displacement risks emerge.
Protection of Natural Habitats		Risks include localised disturbance to ecosystems if interventions are poorly sited or timed. Site-level environmental screening will be used to put in place specific measures such as seasonal timing, management of waste and sediment generated and avoidance of protected or sensitive areas. Implementation will include erosion control and buffer measures.
Conservation of Biological Diversity		Nature-based interventions may temporarily affect vegetation or fauna. The project will implement biodiversity-sensitive design, use indigenous species, and exclude protected or high-value biodiversity zones. Ecosystem and biodiversity safeguards will be integrated into Adaptation Management Plans, with site-level monitoring.
Climate Change	X	While the project is designed to increase resilience, there is residual risk of maladaptation if infrastructure is not designed for future climate scenarios. Technical guidelines will be developed to improve infrastructure resilience, and will be integrated into rural and urban Adaptation Management Plans. The emphasis on

		nature-based and low-carbon solutions in this project are expected to reduce the likelihood of the project exacerbating climate change.
Pollution Prevention and Resource Efficiency	X	Minor risks of solid and liquid waste, poor water efficiency or pollution from construction materials. These are short-term risks and can be managed through established environmental management practices. Construction guidelines, siting and design of infrastructure will avoid contamination of water sources, while environmental clauses will be incorporated into service contracts. In addition, community training will feature water conservation and water distribution system maintenance.
Public Health	X	Moderate risk of waterborne disease near water structures and occupational health risks in labour activities. The project will apply OHS protocols, safe siting of water infrastructure, sanitation campaigns, and coordination with local health services. SEAH prevention and protection measures will be integrated into implementation.
Physical and Cultural Heritage	X	While no physical or cultural heritage sites have been formally identified in the target areas, there remains a potential risk of disturbing undocumented heritage during excavation or other ground-disturbing activities. . Overall, known or suspected heritage areas will be excluded during project implementation unless unavoidable and approved. In addition, pre-activity screening of all interventions using UNEP's SRIF will reduce this risk. To account for unknown heritage sites, chance-find procedures will be included in contractor guidance.
Lands and Soil Conservation		Risks of erosion, fertility loss, or altered hydrology from sand dam development, earthworks or bunding. The site level technical assessments and environmental screening will identify such risks to consider them in the final site selection and design, along with additional measures to mitigate residual risks such as soil and slope stability measures will be built into design. Training for local implementers on soil and water conservation, and monitoring under adaptive management, will prevent degradation.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Arrangements for project management and implementation

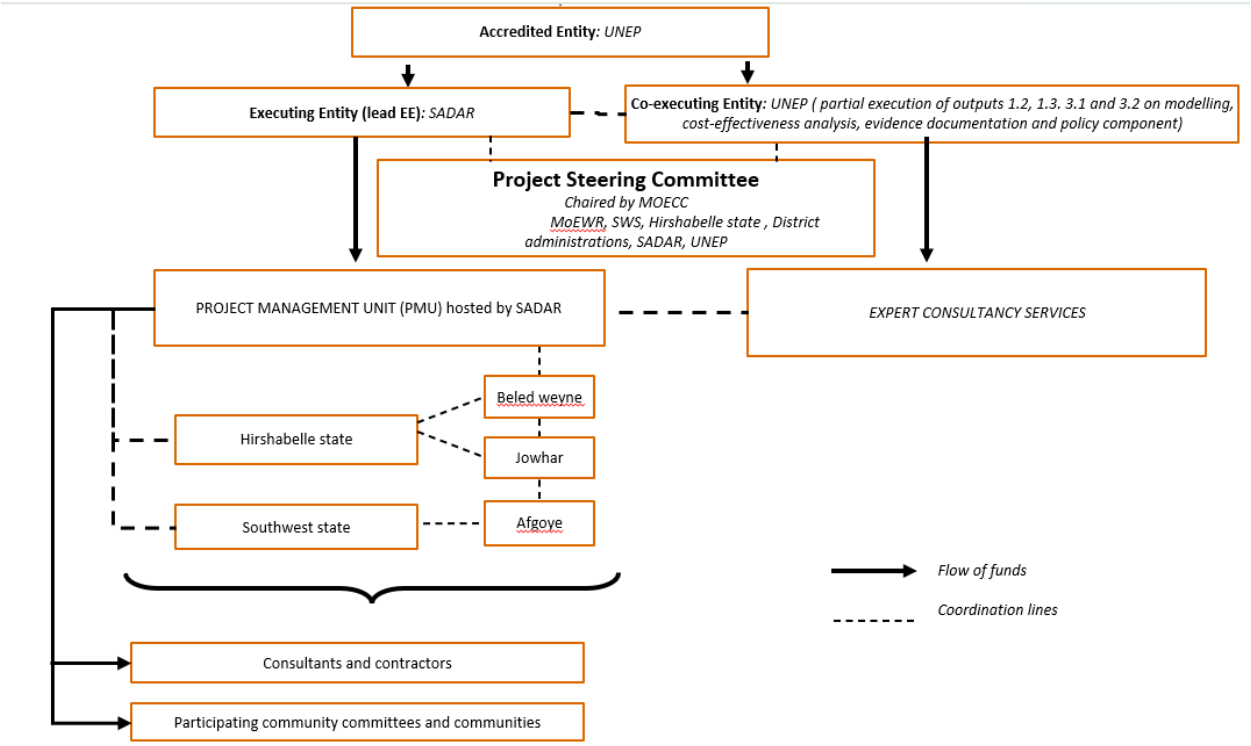

Figure 8. Implementation arrangements organogram.

Multilateral Implementing Entity

240. The United Nations Environment Programme (UNEP) will be the Multilateral Implementing Entity (MIE) for the proposed project. UNEP has implemented more than 90 projects on climate change adaptation at global, regional and national levels in more than 50 countries[235], including Least Developed Countries (LDCs) such

[235] UNEP. 2025. Adaptation and resilience. https://www.unep.org/topics/climate-action/adaptation. Accessed on: 5 June 2025.

as Somalia. These projects have developed innovative nature-based solutions (NbS) to adapt to the current and projected impacts of climate change and built the capacity of national and sub-national governments and local communities in ecosystem-based adaptation planning and implementation.

241. UNEP's knowledge base is derived from completed and ongoing projects supporting: i) methods and tools for decision-making; ii) prioritising, designing and implementing adaptation interventions; iii) enhancing climate resilience by restoring vulnerable ecosystems that underpin community livelihoods; and iv) monitoring the socio-economic and environmental benefits of adaptation interventions. As the MIE, UNEP will draw upon previous experiences and lessons learned during the implementation of the proposed innovation project, including the AFCIA project with CTCN.

242. UNEP's advantage over other accredited entities is its ability to provide robust scientific and technical advice regarding sustainable national planning and development processes. These skills are supplemented by UNEP's strong capacity in the field of climate change through implementation of climate change adaptation projects at global, regional and national levels. As a global lead on Nature-based Solutions (NbS) for climate adaptation, UNEP is currently supporting over 45 ecosystem-based adaptation (EbA) projects worldwide. Combined, these initiatives aim to restore approximately 241,000 hectares of ecosystems while benefiting 3.5 million people. UNEP's technical leadership in ecosystem restoration, climate-smart agriculture, resilient livelihoods, and sustainable land and natural resource governance represents a clear comparative advantage for this project. UNEP also has extensive experience in strengthening climate risk governance and institutional systems, including conducting climate risk assessments, supporting multi-hazard early warning systems, advancing national adaptation planning and embedding climate adaptation into sector policies and planning frameworks.

243. UNEP's leadership in regional climate security initiatives in the Horn of Africa also brings expertise in fragile contexts. In Somalia specifically, UNEP has been providing science-based policy advice and technical support to Somalia's Ministry of Environment and Climate Change, and the Ministry of Energy and Water Resources, among others. UNEP is also a key operational partner in several transformative programmes in Somalia. These include: Programme for Sustainable Charcoal Reduction and Alternative Livelihoods (PROSCAL, 2016–2023), implemented jointly with UNDP and FAO, which promoted energy security and resilient livelihoods by reducing unsustainable charcoal production, trade, and use. UNEP also led the Sustainable Flood Management and Risk Reduction Action project (2021–2022), which supported the implementation of Somalia's National Water Resource Strategy (2021–2025). Under this initiative, UNEP delivered essential data and tools for flash flood risk assessment, conducted research on NbS, and produced key outputs, including a catalogue of NbS measures, modelling of effective options, and indicators for prioritizing NbS with high flood mitigation potential. UNEP also leads the environmental component of the ongoing Jowhar Offstream Storage Programme (JOSP), implemented in collaboration with FAO, IOM, and World Vision International. The 140 million programme aims to reduce flood risk, mitigate drought, and establish a climate-resilient irrigation system for over 1.5 million people along the Shabelle River. Building on these efforts, UNEP is also supporting the development of EARNSS, an Adaptation Fund innovation project to replicate and upscale proven NbS for adaptation in the Shabelle basin, including Hirshabelle state, where the proposed project will take place. UNEP will work closely with other relevant actors, including FAO, IOM, and members of the Resilience Consortia in Somalia (BRCiS and SOMREP), with whom strong relationships are already established, to coordinate initiatives and build on best practices on agropastoral resilience and rangeland restoration in Somalia

244. For the proposed project, the Climate Change Adaptation Unit in the Adaptation and Resilience Branch (Climate Division) will be responsible for the implementation and will oversee the efficient and effective delivery of the project's objectives drawing from the expertise on adaptation, Nature-based Solutions. The Conflict and Disaster Branch, with a track record of operations and policy advisory in Somalia will play a key role in the implementation of the policy activities under Component 3, in mobilizing experts and facilitating coordination with ongoing initiatives and the Ministry of Environment and Climate Change. The Regional Office for Africa (ROA) will ensure country-level coordination and linkages with the UN Country Team. Lastly, UNEP's in-house policies and expertise on gender mainstreaming and social and environmental safeguards will ensure gender-responsive and environmentally sound project implementation.

245. The following implementation services under the MIE modality will be provided by UNEP for the proposed project:

- overall coordination and management of UNEP's MIE functions and responsibilities, and the facilitation of interactions with the AF Board and related stakeholders;
- oversight of portfolio implementation and reporting on budget performance;
- quality assurance and accountability for outputs and deliverables at the project development phase, during implementation and on completion;
- receipt, management and disbursement of AF funds in accordance with the financial standards of the AF;
- information and communication management — including maintaining specific project databases to track and monitor financial and substantive progress — of project implementation; and
- incorporation of lessons learned and best practices into future UNEP projects in the region to support replication and upscaling.

Executing Entity

246. Sadar Development and Resilience Institute (SADAR) will be the lead executing entity (EE) for the proposed project, responsible for delivering the project outputs and activities. SADAR's comparative advantage lies in its extensive local presence, staffing capacity, and in-depth knowledge of the target areas in Somalia. With a team of 86 national staff across Somalia, SADAR has established strong institutional relations and access to key stakeholders at Federal, Federal member states and district levels, facilitating effective coordination and implementation in Somalia. Its proven track record includes successfully managing and executing a range of climate resilience and adaptation projects, such as Response Initiative for Somalia Emergencies, Food Security and Sustainability in Climate Fragile Situations and Investing in Climate-Smart Technologies in Somalia, Resilient Livelihood Action Against Covid-19 (RLAC-19) project all funded by International Fund for Agriculture Development (IFAD) and the World Bank. Additionally, SADAR's ongoing implementation of the GEF-funded Adaptive Agriculture and Rangeland Rehabilitation Project (A2R2), along with planned implementation of the Adaptation Fund's Green and Resilient Ecosystems for Somali Livelihoods Project (Hal-Abuur) approved in April 2025, demonstrates its capacity for managing climate adaptation and mitigation projects. Its expertise in multidisciplinary research and innovations addressing livelihoods, food security, and climate resilience and adaptation in fragile contexts further underscores its suitability as the lead executing entity for this project.

247. UNEP will enter into a contractual agreement with the Sadar Development and Resilience Institute (Sadar), reflecting the responsibilities of each party in accordance with the applicable UNEP and AF standards and procedures. As the lead EE, Sadar will be responsible for the execution of the project, including *inter alia*:
- establish and manage the Project Management Unit (PMU);
- coordinating and managing the overall quality and timely delivery of project outputs and activities in accordance with the approved project document;
- managing national-level procurements of goods and services for project activities;
- recruitment of personnel and consultants for project implementation;
- providing technical advice on project activities and overseeing the work and performance of staff, consultants and contractors involved in project delivery;
- monitoring project outcomes and activities and documenting lessons learned;
- delivering quality, complete and timely technical and financial reports;
- knowledge management, communications and awareness raising;
- management of project environmental and social safeguards and the grievance redress mechanism; and
- development and implementation of the project stakeholder engagement plan.

248. SADAR will execute the project through a combination of its personnel, external consultants, and contracted service providers. The engagement of downstream NGO partners for implementation is not foreseen under the current arrangements. Through agreements with executing entity, SADAR, the Ministry of Environment and Climate Change (MOECC_ will play a role in the implementation of certain institutional activities, including supporting the development of the Adaptation Management Plans in the three districts (activities 1.2.3 and 1.3.2), the hosting of validation workshops on final sites and NbS/hybrid solutions (activities 1.2.3 and 1.3.3), the dissemination of knowledge products to government stakeholders to promote the integration of NbS and hybrid measures into planning instruments (activity 3.1.3) and the meetings related to the soil carbon credit viability assessment and policy recommendations (activities 3.2.3 and 3.2.4). The Ministry will also play a convening and oversight role in the implementation of the Stakeholder Engagement Plan, Gender Action Plan and Environmental and Social Management Framework, M&E Plan and Knowledge Management Plan.

249. District governments will have a coordination and monitoring role but will not hold direct implementation responsibilities. Community committees will be actively involved in the planning, implementation, and monitoring of project activities; however, they will not be responsible for the management or administration of project funds.

250. In the specific context of this project, UNEP will assume a limited and targeted execution role, focusing on selected activities related to evidence generation and policy development, where UNEP offers a clear comparative advantage, as outlined below:

1) Hydrological modelling and evidence generation

251. UNEP will lead the implementation of hydrological modelling to assess:
- the flood attenuation potential and groundwater infiltration potential of Nature-based Solutions (NbS) in the project area,
- the cost-effectiveness analysis of proposed interventions; and
- the documentation and dissemination of results.

252. This work will build on UNEP-DHI's established experience in Somalia, notably their development of the Catalogue of NbS Measures and modeling of effective NbS options and indicators for flood mitigation under the Somalia National Water Resource Strategy (NWRS), launched by the Ministry of Energy and Water Resources (MOEWR) in April 2021.

2) Technical quality control and validation

253. UNEP's Senior Water Resources Management Specialist based in Somalia will be responsible for conducting independent quality control and validation of site assessments and technical designs prepared by national engineers. This will ensure technical rigor, alignment with international standards, and quality assurance in the project's infrastructure and NbS interventions.

3) Policy Recommendations and Incentive Packages

254. UNEP will oversee the development of recommendations for policy reforms and incentive mechanisms to support the uptake, replication, and upscaling of NbS and hybrid adaptation measures.

255. This work will be undertaken by a team of international and national expert consultants recruited by UNEP through a competitive tender process. UNEP policy experts will provide oversight and technical guidance to ensure the relevance and alignment of recommendations. The process will be conducted in close collaboration with the Ministry of Environment and Climate Change (MoECC), the Ministry of Energy and Water Resources (MOEWR), and the Somalia Disaster Risk Management Agency (SADAR) to ensure ownership, institutional alignment, and policy coherence. These targeted execution activities complement the primary implementation arrangements and leverage UNEP's expertise, ensuring high-quality evidence generation, robust technical oversight, and policy-level support for sustainable and scalable adaptation outcomes.

Project Steering Committee

256. A Project Steering Committee (PSC) will be established to provide strategic guidance for the implementation of the entire proposed project. The Federal Ministry of Environment and Climate change (MoECC) will chair the Project Steering Committee (PSC). The PMU will serve as the PSC secretariat, preparing the agenda, meeting minutes, and submitting reports and annual planning documents for PSC consideration. The PSC will be comprised of representatives of:
- Federal MoECC;
- Federal Ministry of Energy and Water Resources (MoEWR)[236];
- UNEP;
- Sadar;
- Southwest state government;
- Hirshabelle state government; and
- District administrations from Beledweyne, Jowhar and Afgooye.

257. As the project's primary decision-making entity, the PSC will meet at least once per year to: i) evaluate progress on outcomes to maintain a high standard of technical quality; ii) approve the annual workplan and budget, as well as the progress reports and project reports; iii) strengthen linkages between this project and

[236] These Ministry representatives will serve as Focal Points on behalf of their respective institutions to ensure their involvement in high-level project oversight.

other relevant ongoing projects and programmes; iv) ensure the achievement of the main outcomes of the project, including sustainability, replication and upscaling; and v) coordinate the work of implementing partners within the framework of this project. In addition to scheduled annual meetings, *ad hoc* sessions will be organised and held virtually as required at the discretion of the MoECC.

258. The PSC will monitor the implementation progress to anticipate risks and factors that will potentially cause delays. If delays occur, the PSC will evaluate the barriers and constraining factors and will provide solutions that will be endorsed collectively. Moreover, the PSC will be responsible for ensuring that SADAR carries out timely reporting of project implementation progress to UNEP, who will report to the Adaptation Fund using the Fund's reporting tools.

The Project Management Unit

259. A Project Management Unit (PMU) will be established within SADAR led by the Project Manager who will report to SADAR Programmes Director. The PMU's main functions are to facilitate project management, coordination and implementation based on PSC-approved annual work plans and budgets. It will also: i) establish activity planning processes; ii) formulate and monitor budgets; iii) provide the terms for procurement and hiring procedures; iv) establish contracts and oversee performance and deliverables of contractors and consultants, v) establish guidance tools for administration, financial and budget management, monitoring and evaluation (M&E) procedures; and vi) carry out reporting and M&E of project interventions[237].

260. The PMU will be based in Mogadishu and will be led by a Project Manager. In addition, the PMU will include a Finance Officer, Procurement Officer, M&E Officer, Environmental and Social Safeguards (ESS) and Gender Officer as well as district- level technical personnel. The responsibilities of these specialists are listed in Table 18.

Table 18. Responsibilities of Project Management Unit (PMU) personnel.

PMU member	Responsibilities
Project Manager	• Oversee the implementation of all project interventions • Coordinate and manage the other PMU members • Guide the development of the annual workplan, budget and report • Deliver annual progress reports to the PSC
PMU technical staff (one per district)	• Liaise with local authorities, community committees and stakeholders. • Facilitate project planning, implementation and monitoring at district level. • Support community-based activities, including cash-for-work and training sessions. • Report district-level progress and challenges to the Project Manager.
Finance Officer	• Maintain accurate financial records and manage project disbursements. • Support financial reporting to UNEP and the PSC. • Ensure compliance with AF financial standards. • Coordinate audit readiness and documentation.
Procurement Officer	• Prepare procurement documentation including specifications and bid evaluations. • Ensure transparency and compliance with UNEP and AF procurement guidelines. • Coordinate contracts for goods, works and services. • Maintain procurement records.
M&E Officer	• to be presented to the PMU • Lead ongoing monitoring, including potential community consultations during implementation, to evaluate progress on project outcomes • Identify potential risks and factors that are likely to cause delays in implementation and inform the PMU of these • Prepare mid-term and terminal evaluations
ESS & Gender Officer	• Support implementation of project activities to ensure their design is appropriate to the local environmental and social contexts and is gender-responsive • Evaluate progress reports by the M&E Officer to ensure that environmental and social impacts are within the scope of predicted risks • Evaluate progress reports by the M&E Officer on equitable benefit distribution to women • Advise on adjustments to implementation in the case of harmful projects impacts on the environment, local livelihoods or social cohesion, or potential inequitable distribution of project benefits and harmful impacts of project activities on women

B. Financial and project risk management

261. Risk management is viewed as an ongoing process integrated throughout the project lifecycle, from design

[237] Refer to Part III, Section D: Monitoring and Evaluation.

to implementation and evaluation, ensuring that risk identification and mitigation are continuously updated and responsive to changing circumstances. All aspects of the project approach, including risk management, are designed to be participatory, gender-responsive and inclusive. This is expected to contribute to mitigating certain social and operational risks and includes actively engaging women, youth and marginalised groups in decision-making processes at all stages. Table 19 below summarises some key risks identified in the EARNSS project and provides a qualitative assessment of their potential likelihood, impact and overall seriousness based on the information presented.

Table 19. Financial and project risks.

Risk description	Risk rating	Mitigation measures
Security: The presence of insurgent groups such as Al-Shabaab, as well as recurring tensions between clans as well as between settled farmers/agropastoralists and nomadic pastoralists lead to intermittent periods of conflict in the Shabelle River Basin. Although currently the security situation is relatively stable in the specific target areas, the potential exists for such conflict to disrupt implementation, particularly of field activities such as ground-truthing, construction and consultations.	Moderate	The risk that social or political conflict could impede the implementation of project interventions cannot be avoided entirely. However, adaptive management incorporated into project design will enable for potential re-scheduling or even re-siting of interventions should specific areas become too unsafe for implementation. Moreover, the inclusion of elders — traditionally responsible for local conflict resolution — in community committees will provide opportunities to de-escalate conflict potentially jeopardising implementation.
Insufficient adoption of NbS and hybrid solutions: As NbS and hybrid solutions are relatively novel in the context of the Shabelle River Basin, local farmers and agropastoralists will potentially be hesitant to adopt these techniques.	Moderate	The proposed project will demonstrate the benefits of NbS interventions using demonstration plots and a targeted awareness campaign featuring case studies and interviews with successful adopters. Moreover, the project will provide expertise and inputs to potential adopters using the community committees, nurseries and awareness materials. This combination of incentives and long-term support will make adoption of NbS interventions likely. The economic sustainability of project interventions will be verified by technical assessments and cost-benefit analysis.. As NbS and hybrid solutions generate adaptation benefits at lower costs than traditional 'grey' infrastructure, it is likely that all NbS interventions will be cost-effective. In addition, by reducing the currently severe impacts of droughts and floods on communities in the target districts, the proposed project is expected to result in reduced economic losses.
Climate change: There exists a risk that climate change impacts in the Shabelle River Basin will become more severe than current IPCC projections show, such that NbS and hybrid solutions interventions implemented under the proposed project will not perform adequately to achieve the expected benefits.	Low	The risk of climate change impacts more severe than those predicted by IPCC models cannot be avoided entirely, as project modelling of NbS benefits will use these models. However, the project's focus on upscaling of NbS will, to a degree, enable adaptation to more severe climate change impacts by increasing implementation of successful NbS interventions. More severe climate change impacts would further incentivise NbS adoption and would potentially result in additional funding being provided by the Government of Somalia to upscale interventions to offset increased impacts. The NbS implementation protocols developed during project implementation will incorporate adaptive management principles, enabling their continued use under more severe climate change scenarios. For example, should temperature increases exceed the tolerances of native plants used for rangeland and riverine revegetation, it will be possible to instead select more temperature-resistant species.
Insufficient adoption of policy recommendations: There exists the risk that policy recommendations generated under the proposed project will not be adopted by government policy- and decision-makers as NbS and hybrid solutions are relatively novel in the context of Somalia.	Moderate	This risk cannot be mitigated entirely; however, the combination of evidence-based reporting, provision of incentive mechanisms and demonstration of adaptation benefits, including economic sustainability, will strongly incentivise adoption.
Governance: The coexistence of formal and informal governance systems with overlapping mandates results in disjointed planning and implementation pathways. This has the potential to delay project activities. At the district level, overlap in the authority of formal and traditional leadership may reduce coherence in project activities. The allocation of land, resources and administrative resources is typically mediated through dominant clan networks, making it subject to clan-related conflict.	Moderate	Roles and responsibilities will be formalised with key ministries (MoECC, MoEWR, MoAI and MoLFR). Regional Committees with clear terms of reference will be established, comprising officials, NGOs, CBOs and community groups.
Coordination and Communication: Weak	Moderate–	The roles of the different institutions have been defined in coordination

coordination among institutions may result in fragmented or duplicated activities. Poor communication may hinder stakeholder engagement and feedback loops.	High	with the lead Ministry (MoECC) and it's expected that the existing institutional relationships will support alignment and coordination. The PSC meetings will facilitate institutional coordination and engagement in the project governance, while the PMU will ensure coordination with stakeholders implementing initiatives in the target areas to facilitate synergies and avoid duplication of efforts. Communication tools (e.g. newsletters, SMS, radio) and the dissemination of key project documents will facilitate information sharing and facilitate engagement.
Local Ownership: If project interventions do not reflect community priorities or exclude local actors from management roles, sustainability and impact may be undermined. Local ownership may also be limited if project information is inaccessible to marginalized groups, such as minority clans, or does not facilitate participation from women and youth.	Moderate	Project design included engagements with communities at all target sites to ensure their priorities and concerns were identified. Additionally, structured community engagements will inform intervention design and ensure alignment with local needs. To ensure inclusivity, stakeholder engagement will include translation services and will be monitored based on the participation of vulnerable or marginalised groups. A grievance redress mechanism (GRM) will be operationalised to facilitate accessible feedback.
Financial: Mismanagement of funds at sub-national levels could affect accountability and delivery of activities.	Low	The management of project funds will be the responsibility of SADAR and UNEP as co-executing entity, No transfer of funds to downstream partner is envisioned, hence the risk of mismanagement of funds at sub-national level is low. Financial Audits will be conducted by an independent audit authority on an annual basis. The audit report and recommendations shall include such comments as the auditor may deem appropriate in respect of AF-funded operations and in particular, shall clearly indicate that in their opinion: (i) AF funds were covered by the scope of the audit; (ii) Proper books of account have been maintained; (iii) All project expenditures are supported by vouchers and adequate documentation; (iv) Expenditures have been incurred in accordance with the objectives outlined in the project document; (v) The expenditure reports provide a true and fair view of the financial condition and performance of the project.
Financial: Exchange rate or inflation volatility may increase project costs.	Low–Moderate	Financial reviews will be conducted to adjust budget allocations as needed

C. Environmental and social risk management

262. Environmental and social impacts and risks have been identified for the proposed project in line with the Adaptation Fund's (AF) Environmental and Social Policy. Table 20 presents a summary of risks against each of the 15 Environmental and Social Principles, including associated mitigation measures. A full environmental and social screening was conducted using UNEP's Environmental and Social Safeguards procedures. The proposed project is classified as Category B (moderate risk) under both the UNEP Environmental, Social and Sustainability Framework (ESSF) and the AF ESP.

263. Risks identified during the design phase include: i) potential exclusion of vulnerable groups; ii) conflict over access to land and resources; iii) minor biodiversity and soil disturbance during construction; iv) risks related to labour conditions and benefit sharing; and iv) economic displacement. No significant or irreversible impacts are anticipated and the project does not have activities affecting Indigenous Peoples as defined by the ESP.

264. The Environmental and Social Management Framework (ESMF) serves as the primary mechanism for incorporating environmental and social risk management measures into the project. The ESMF includes:
- a structured screening process for Unspecified Sub-Projects (USPs);
- a Livelihood Action Framework (LAF) to guide mitigation of any access-related or economic displacement risks;
- a Grievance Redress Mechanism (GRM) with district-level focal points;
- safeguards oversight by UNEP and the Project Management Unit (PMU); and
- integration of cross-cutting strategies such as stakeholder engagement, gender responsiveness and adaptive management.

265. These measures are embedded in the project's implementation arrangements and budget. Ongoing safeguards monitoring will be conducted by safeguards focal points at the national and district level, with oversight and periodic review by UNEP. Risks will be re-assessed as site-level planning proceeds and mitigation measures will be adjusted accordingly to ensure compliance with the ESP throughout implementation.

Table 20. Summary of environmental and social risks, screening outcomes and mitigation measures.

AF Environmental and Social Principle[238]	Triggered by the Project?	Assessment of Risks	Mitigation Measures Proposed in the Project
Principle 1: Compliance with the Law. Projects/programmes supported by the Fund shall be in compliance with all applicable domestic and international law.	Yes	While the project is designed to comply with Somali law and international commitments — such as International Labour Organisation (ILO) conventions — weak regulatory systems and informal land-use practices may result in inadvertent non-compliance or ambiguous legal interpretation.	• Screening of all project activities to identify legal obligations regarding land use, environmental impacts and labour • Oversight by UNEP and Sadar to verify compliance with national laws and safeguard obligations. • Alignment with ILO standards and Somalia's Labour Code in all cash-for-work (CfW) and contracted work arrangements.
Principle 2: Access and Equity. Projects/programmes supported by the Fund shall provide fair and equitable access to benefits in a manner that is inclusive and does not impede access to basic health services, clean water and sanitation, energy, education, housing, safe and decent working conditions and land rights. Projects/programmes should not exacerbate existing inequities, particularly with respect to marginalised or vulnerable groups.	Yes	There is a risk that CfW opportunities or shared infrastructure — such as sand dams and water tanks — may be inequitably distributed given existing social hierarchies or power imbalances. Gatekeeping by local elites or clan-based structures may limit participation by marginalised groups. Inaccessible or mistrusted grievance mechanisms may further entrench exclusion from project benefits.	• Inclusive stakeholder mapping and quota-based representation of women, internally displaced persons (IDPs) and ethnic minorities in committees (Output 1.4). • Participatory planning for infrastructure site selection and labour allocation. • Culturally appropriate engagement strategies such as gender-segregated consultations and providing resources in the Somali-language. • Operational GRM with district-level focal points to address access-related complaints.
Principle 3: Marginalised and Vulnerable Groups. Projects/programmes supported by the Fund shall avoid imposing any disproportionate adverse impacts on marginalised and vulnerable groups including children, women and girls, the elderly, indigenous people, tribal groups, displaced people, refugees, people living with disabilities and people living with HIV/AIDS. In screening any proposed project/programme, the implementing entities shall assess and consider particular impacts on marginalised and vulnerable groups.	Yes	Groups such as the Somali Bantu, minority clans, IDPs and women may face exclusion from project benefits due to structural inequality, weak representation or discriminatory norms. Participatory processes risk reinforcing elite control or ignoring customary needs unless safeguards are deliberately applied.	• Targeted outreach through civil society, IDP committees and community elders to ensure participation of historically excluded groups. • Minimum representation thresholds for marginalised groups in local governance structures. • Training for facilitators on navigating power dynamics and inclusive dialogue. • Screening for exclusion risks integrated into site-level planning and implementation oversight. • Engagement with these groups will apply approaches consistent with the principles of Free, Prior and Informed Consent (FPIC)
Principle 4: Human Rights. Projects/programmes supported by the Fund shall respect and where applicable promote international human rights.	Yes	Risks include exclusion from participation or benefits due to discrimination based on clan affiliation, gender, displacement status or ethnicity. Weak trust in formal accountability mechanisms and local gatekeeping may suppress participation or grievances from vulnerable groups.	• Inclusive engagement practices designed to mitigate discrimination, including quota-based representation and culturally appropriate consultation. • Training for community facilitators on non-discrimination, respectful dialogue and inclusion. • GRM designed to be accessible, confidential and responsive to rights-related complaints, including protection from retaliation. • Oversight by UNEP and Sadar to ensure adherence to human rights principles during implementation.
Principle 5: Gender Equality and Women's Empowerment. Projects/programmes supported by the Fund shall be designed and implemented in such a way that both women and men: i) have equal opportunities to participate as per the AF gender policy; ii) receive	Yes	Gender norms may restrict women's participation in CfW initiatives, community planning or leadership roles. Women may also face increased time burdens or exposure to sexual exploitation, abuse and harassment (SEAH) risks during	• Minimum representation thresholds for women in all local governance committees under Output 1.4. • Gender-responsive consultation approaches such as holding gender-disaggregated meetings with dedicated female facilitators. • Gender-responsive labour recruitment,

[238] Adaptation Fund. (n.d.). Guidance document for Implementing Entities on compliance with the Adaptation Fund Environmental and Social Policy https://www.adaptation-fund.org/wp-content/uploads/2016/07/ESP-Guidance_Revised-in-June-2016_Guidance-document-for-Implementing-Entities-on-compliance-with-the-Adaptation-Fund-Environmental-and-Social-Policy.pdf

comparable social and economic benefits; and iii) do not suffer disproportionate adverse effects during the development process.		implementation if gender-responsive safeguards are not applied.	with attention to fair access for women and protection from discrimination. • SEAH awareness incorporated into orientation for workers and community members, with GRM referral pathways for survivors.
Principle 6: Core Labour Rights. Projects/programmes supported by the Fund shall meet the core labour standards as identified by the International Labour Organisation (ILO).	Yes	Risks include lack of written contracts for CfW or community labour, inadequate health and safety protections and possible child labour. Discrimination in hiring may arise due to hierarchical clan-based practices.	• Written contracts and basic labour terms applied for all CfW and community-based implementation arrangements. • Compliance with Somalia's Labour Code and ILO standards. • Age verification protocols and spot checks to prevent child labour. • Occupational health and safety measures, such as the provision of training, protective equipment and supervision. • Gender-responsive and non-discriminatory recruitment practices monitored by safeguards focal points.
Principle 7: Indigenous Peoples. The Fund shall not support projects/programmes that are inconsistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples.	No	Not Applicable	• The project operates in areas where no groups meeting the criteria of Indigenous Peoples (IPs) — as defined under UNEP's ESSF[239] — have been identified. While the project includes marginalised groups such as Somali Bantu, occupational castes and displaced persons, these do not qualify as Indigenous Peoples under applicable standards. Their inclusion is addressed under Principle 3 on Vulnerable Groups. As such, while true a FPIC process is not triggered, project engagement will strive to reflect FPIC principles for specific groups that self-identify as having indigenous peoples characteristics (refer to Annex 3: Stakeholder Engagement Plan.
Principle 8: Involuntary Resettlement. Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids or minimises the need for involuntary resettlement. When limited involuntary resettlement is unavoidable, due process should be observed so that displaced persons shall be informed of their rights, consulted on their options and offered technically, economically and socially feasible resettlement alternatives or fair and adequate compensation.	Yes	There is a risk of economic displacement where project activities — such as catchment planning and infrastructure site selection — restrict access to land or resources used by agropastoralist or displaced communities. Risk is context-dependent and varies by site.	• Participatory planning and site validation with affected communities. • Site-level safeguards screening using the UNEP Safeguard Risk Identification Form (SRIF). • Development of Livelihood Action Plans (LAPs) where restriction of access is identified. • Exclusion of activities which would require involuntary physical displacement of communities. • Avoidance of contested areas or sites where consent cannot be assured.
Principle 9: Protection of Natural Habitats. The Fund shall not support projects/programmes that would involve unjustified conversion or degradation of critical natural habitats, including those that are: i) legally protected; ii) officially proposed for protection; iii) recognised by authoritative sources for their high conservation value, including critical habitats; or iv) recognised as protected by traditional or indigenous local communities.	Yes	Interventions may cause localised disturbance to ecosystems or habitats if not implemented with adequate siting, timing and protection measures. Uncertainty about site conditions or land use increases the risk.	• Pre-implementation screening of all interventions using UNEP's SRIF and participatory validation processes. • Ecosystem sensitivity will be assessed through catchment planning and stakeholder consultation. • Use of indigenous or non-invasive species for restoration. • Exclusion of identified protected areas and key biodiversity zones.
Principle 10: Conservation of Biological Diversity. Projects/programmes supported by the	Yes	Landscape interventions — including embankment revegetation, climate-smart rangeland management, soil	• Biodiversity considerations integrated into all site screening. • Avoidance of ecologically sensitive areas unless supported by ecological

[239] UNEP. 2020. Environmental and Social Sustainability Framework (ESSF). https://wedocs.unep.org/bitstream/handle/20.500.11822/32022/ESSFEN.pdf.

Fund shall be designed and implemented in a way that avoids any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species.		bunds and V-shaped weirs — may alter vegetation patterns or disturb fauna if biodiversity considerations are not incorporated into design and siting. Risks are site-specific but manageable with proper planning.	assessments. • Restoration works use native species and avoid monoculture approaches. • Monitoring of vegetation cover and key indicator species in target areas. • Training of implementing partners on NbS principles.
Principle 11: Climate Change. Projects/programmes supported by the Fund shall not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change	Yes	While the project is designed to increase resilience, there is residual risk of maladaptation if infrastructure is not designed for future climate scenarios if, *inter alia*, culverts are undersized, or interventions are located on sites with high erosion potential.	• Technical guidelines developed to ensure infrastructure resilience — including considerations of drainage capacity and slope stability. • Integration of adaptation planning into rural and urban Adaptation Management Plans. • Emphasis on nature-based and low-carbon solutions.
Principle 12: Pollution Prevention & Resource Efficiency.	Yes	Minor risks of solid and liquid waste, poor water efficiency or pollution from construction materials. These are short-term risks and can be managed through established environmental management practices.	• Construction guidelines include protocols for waste management and material handling. • Siting and design of infrastructure avoids contamination of water sources. • Community training on water conservation and system maintenance. • Procurement procedures encourage low-emission and resource-efficient technologies. • Environmental clauses incorporated into work contracts.
Principle 13: Public Health. Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids potentially significant negative impacts on public health.	Yes	Risks relate to community exposure to waterborne diseases arising from stagnant water near sand dams or drainage systems, as well as occupational health risks during labour-intensive works. Somalia's limited public health infrastructure compounds these vulnerabilities.	• Site design ensures effective drainage and avoids stagnant water pooling. • Occupational health and safety (OHS) protocols applied to all worksites. • Awareness campaigns on hygiene, sanitation and water safety. • Engagement with local health actors where feasible to coordinate early warning and referral.
Principle 14: Physical and Cultural Heritage. Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids the alteration, damage or removal of any physical cultural resources, cultural sites and sites with unique natural values recognised as such at the community, national or international level. Projects/programmes should also not permanently interfere with existing access and use of such physical and cultural resources.	Yes	While no physical or cultural heritage sites have been formally identified in the target areas, there remains a potential risk of disturbing undocumented heritage during excavation or other ground-disturbing activities.	• Pre-activity screening of all interventions using UNEP's SRIF and participatory validation processes. Ecosystem sensitivity assessed through catchment and urban planning, as well as stakeholder consultation. • Chance-find procedures included in contractor guidance. • Avoidance of known or suspected heritage areas in project implementation unless unavoidable and approved.
Principle 15: Lands and Soil Conservation. Projects/programmes supported by the Fund shall be designed and implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services.	Yes	Sand dams, earthworks, grazing enclosures or poorly designed bunds could result in localised erosion, reduced soil fertility or disruption of natural hydrology if not appropriately managed.	• Sand dams and V-weir site selection and designs are informed by hydrological and sediment assessments. • Design of restoration and water infrastructure incorporates soil stability and slope considerations. • Use of vegetation cover and erosion control techniques • Training of local implementers in soil and water conservation methods. • Site monitoring to ensure early detection of erosion or degradation.

D. Monitoring and evaluation

266. The proposed project will comply with formal guidelines, protocols and toolkits issued by the Adaptation Fund (AF), United Nations Environment Programme (UNEP) and the Government of Somalia (GoS). The

Monitoring and Evaluation (M&E) of progress in achieving project results will be based on targets and indicators established in the Project Results Framework (Part III, Section E). Additionally, the Environmental Social Risks Management Framework (ESMF) (Annex 3), Gender Action Plan (Annex 4) and the financial and project risk management (Part III, Section B) will be monitored throughout the proposed project, using bi-annual progress reports, annual project performance reports, mid-term review and terminal evaluation report. Moreover, UNEP will oversee project implementation to ensure that the proposed project is conducted in accordance with AF standards and requirements and the Sadar Development and Resilience Institute (Sadar), as the Executing Entity (EE), will ensure the timeliness and quality of project implementation. The Project Management Unit (PMU) will implement project activities as the primary coordinating unit that will be responsible for project implementation and M&E activities discussed below while UNEP will have an oversight and quality assurance role for all M&E activities, undertake supervision missions and undertake external evaluations at mid-term and endline. The M&E budget and breakdown of how MIE fees will be used for M&E-related activities are presented in the detailed budget in Part III, Section G. The related targets and indicators are available in the project proposal results framework (Part III, Section E).

267. Project M&E will be conducted under the oversight of the Project Manager. In addition, M&E will be led by the M&E officer who will work closely with UNEP and Sadar to develop an M&E system, the functions of which will include: i) collecting data to assess progress against the result framework indicators as described in Part III, Section E: Results Framework, ii) collecting gender-disaggregated data to monitor the gender targets described in the Gender Action Plan; iii) producing, organising and disseminating information required for the strategic and adaptive management of the project; iv) documenting project results and lessons learned; iv) ; and v) providing inputs to the annual progress reports, independent result verification exercises and external evaluations.

268. In addition to formal M&E structures, community committees will support Participatory Monitoring and Evaluation (PME) of project interventions, building local capacity in data collection, planning, resource management and collaborative decision-making. Data generated through PME will inform adaptive management and be consolidated by the M&E Officer to support ongoing learning and replication.

M&E Plan activities:

Project Inception Workshop

269. One national workshop will be held within three months of the commencement of project implementation with a variety of stakeholders from the target communities and the GoS. This inception workshop will ensure ownership by these stakeholders in the M&E process and achievement of project results and will be used to develop the first-year annual work plan. In addition, the inception workshop will emphasise the: i) project implementation modalities; ii) M&E arrangements; and iii) expected results of project activities. Following the inception workshop, a report will be produced for submission to the UNEP. This report will include: i) a work plan detailing the activities and progress indicators that will guide implementation during the first year of the proposed project across four quarters; ii) a detailed project budget for the first full year of implementation, in line with the Annual Work Plan; iii) detail on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project-related partners; iv) information on progress to date on project establishment and start-up activities; and v) any changed external conditions that will potentially influence project implementation.

270. Establishment of indicator baseline values
UNEP will be responsible for preparing and financing the Baseline Data Report to document, where relevant, the baseline values of the Results Framework and the Gender Action Plan.,

Field monitoring and community consultations

271. The ESS & Gender Officer and the M&E Officer of the PMU will undertake regular Field Monitoring Missions in the project districts. These will involve follow-up consultations with a variety of stakeholders — including women, youth, IDPs and indigenous peoples — in rural and urban communities in the Beledweyne, Jowhar and Afgooye Districts. The objectives of these consultations will be to capture public perceptions of the project's implementation and effectiveness and evaluate the effectiveness of awareness-raising interventions. The missions will also serve to monitor the effective implementation of the Grievance Redress Mechanism. For additional information on the proposed consultation methodology during implementation, refer to Part II, Section H: Consultative Process and Annex 2: Stakeholder Engagement Plan.

272. Progress reports will be generated by the PMU quarterly. These progress reports will: i) ensure continuous monitoring of project activities and the identification of corrective measures where challenges are identified, thereby enabling adaptive management of project interventions; and ii) assist with the verification of the project targets outlined in the Results Framework. In addition, these reports will include progress and financial reporting, project revisions, technical assistance and risk management information to assist with ongoing M&E.

Annual Performance Reports

273. The project team will prepare an Annual Performance Report (APR) to document progress towards the proposed project's Annual Work Plan and assess performance towards its intended outcomes through outputs and partnerships[240]. The APRs will be presented to the PSC and will include[241]: i) an overview of project performance over the reporting period, including project milestones; ii) current financial information; iii) procurement data, Gender Policy compliance; vii) separate performance ratings by the implementing entity (IE) and EE; viii) the status of project indicators; ix) lessons learnt; and x) the AF results tracker. This reporting will be done at: i) inception, where baseline-related information will be submitted, as well as planned targets at project/programme completion; ii) at mid-term; and iii) at project completion, when the final APR will serve as a project completion report.

274. Capacity development for the implementation of the M&E plan and results measurement
Expert consultants will provide capacity development and support to the M&E Officer in the development of the data gathering plan at inception and the refinement of the plan at mid-term. Results measurement will be undertaken by the monitoring officer at mid-term and endline to verify on the ground actual project results as reported against the project's results framework indicators and targets.

Mid-term Review (MTR)

275. UNEP will be responsible for managing an interim evaluation Mid-Term Review (MTR) at the mid-point of the project's duration. UNEP will oversee the process of hiring an external consultant to carry out the MTR, which will provide an assessment of project performance at the project's mid-point. This will be a formative exercise and will include analysing whether the project is on track, what problems and challenges the project is encountering, and which corrective actions are required so that the project can achieve its intended outcomes by project completion in the most efficient and sustainable way. The Project Steering Committee will participate in the MTR process and develop a management response to the review's recommendations along with an implementation plan.

Terminal Evaluation

276. An independent ex-post Terminal Evaluation (TE) will take place once the project has reached operational completion. and typically initiated after the project's operational completion. The TE will include the project completion survey and will be undertaken in accordance with UNEP's Evaluation Policy and AF guidelines[242]. The Evaluation Office of UNEP will be responsible for the TE, which is a summative evaluation, and will liaise with the UNEP Task Manager and relevant stakeholders throughout the process. An independent assessment of project performance against standard evaluation criteria — such as strategic relevance, effectiveness, efficiency and likelihood of impact and sustainability — will be made based on documentary evidence, stakeholder interviews and the results of independent results verification mission in the field. Each evaluation criterion will be rated using a six-point rating scheme and a weighted average will be determined to provide an overall performance rating for the project as a whole. Where there are any differences in ratings between the evaluation team and the Evaluation Office a final determination will be made by the Evaluation Office when the evaluation report is finalised.

277. Details on responsible parties, timeframes and M&E budgeting are given in Table 21.

[240] The project completion report (PPR) should be submitted on a rolling basis one year after the start of project implementation and PPRs shall be submitted no later than two months after the end of the reporting year. The last PPR should be submitted six months after project completion. In addition to the final PPR, implementing entities are requested to prepare a project completion summary.
[241] Adaptation Fund. 2020. Guidance Document to complete Project Performance Report (PPR) For Projects funded by the Adaptation Fund. https://www.adaptation-fund.org/wp-content/uploads/2020/03/Guidance-Document-to-Complete-PPR-2.pdf. Accessed on: 7 May 2025.
[242] Adaptation Fund. 2015. Guidelines for project/programme final evaluations. https://www.adaptation-fund.org/wp-content/uploads/2015/01/Guidelines%20for%20Proj_Prog%20Final%20Evaluations%20final%20compressed.pdf

Table 21. Proposed budget for Monitoring and Evaluation[243].

Type of M&E Activities	Responsible Parties	Time Frame	Reporting Format	Budget (US$) and budget line reference
Inception workshop and training	PMU (Project Manager)	Within 3 months of project commencement	Inception workshop report	19,031 (D3 and D5) (+Project Manager time)
Development of data gathering plan	PMU (M&E Officer) with consultant support	Within 3 months of project commencement	Data gathering plan	4,000 (D7) (+ M&E Officer's time
Baseline Data Report	UNEP	prior to the first PPR	Baseline Data report	20,000 (MIE fee)
Field monitoring missions	M&E Officer ESS & Gender Officer	At least once a year to each district	Field visit report	68,800 (D1 and D2) (+Project Manager and M&E Officer time
Annual and semi-annual Progress Reports	PMU drafts UNEP revised PSC is informed	Annually	Annual project progress and performance reports	8,975 (D5 and D9) (+Project Manager and M&E Officer time
Project Performance Workshops	PMU UNEP PSC	Every six months, in the PSC meetings	Workshop report	Included under PSC costs in E9
Refinement of data gathering plan and mid-point results measurement	PMU contracts independent monitoring services.	At mid-point of the project cycle.	Data gathering plan and mid-point monitoring report	19,050 (D7) (+M&E Officer time
Endline results measurement	PMU contracts independent monitoring services	Upon project technical completion	Final monitoring report	19,050 (D7) (+M&E Officer time
Evaluations				
Mid-term Evaluation	UNEP (findings presented to PSC)	At mid-point of the project cycle	Review Report	60,000 (MIE fee)
Terminal Evaluation	UNEP	End of project	Terminal evaluation report	60,000 (MIE fee)
			M&E officer total	30,000
			PM total	42,476
			Total Component 4	**211,382**
			Total Component 4+MIE fee)	**351,382**

[243] This budget excludes specialist and consultant fees, travel expenses and free, prior and informed consent (FPIC) process costs. For a full breakdown of the M&E budget, refer to Part III, Section G: Budget.

E. Results framework

Table 22. Results framework for the proposed project according to AF core indicators.

Adaptation Fund Core Impact Indicators		
Project Title	Enhancing Adaptation and Resilience through Nature-based Solutions in Somalia (EARNSS)	
Country	Somalia	
Implementing Agency	United Nations Environment Programme (UNEP)	
Project Duration	2026–2030	
	Baseline *(absolute number)*	Target at project approval *(absolute number)*
Adaptation Fund Core Impact Indicator "Number of Beneficiaries"		
Direct beneficiaries supported by the project	0	20,840[244,245,246,247,248]
Female direct beneficiaries[249]	0	4,564
Youth direct beneficiaries	0	11,748
Indirect beneficiaries supported by the project	0	1,351,223
Female indirect beneficiaries[250]	0	293,710
Youth indirect beneficiaries	0	766,143
Adaptation Fund Core Impact Indicator "Assets Produced, Developed, Improved, or Strengthened"		
Sector: *Water management*		
Targeted Asset: physical asset produced	0 assets produced	6 sand dams with V-shaped weirs, protected wells, solar pumping systems, elevated storage tanks and gravity distribution systems produced
Changes in Asset	No sand dams in target catchments providing water supply	Increase in water supply in the targeted areas to withstand impacts of climate change (6,000 people gain access to a minimum of 20L during the two dry seasons (180 days)).
Sector: *Rural development*		
Targeted Asset: physical asset produced	0 assets produced	3 nurseries producing seeds and saplings for revegetation produced
Changes in Asset	No tree nurseries in the target rural areas	3 community managed tree nurseries operational and collectively providing seeds and saplings to ~2,000 agricultural, pastoral or agropastoral households to support revegetation of 4,000 ha of degraded rangelands.
Sector: *Urban development*		
Targeted Asset: physical asset produced	0 assets produced	SUDs (ditches, vegetated swales, detention basins and/or retention ponds) developed

[244] This includes 30 ministerial and NGO/CSO representatives receiving training, 90 community committee members receiving training, 8,520 beneficiaries of improved water supply and 12,200 beneficiaries of improved rangeland management, soil bunds and riverine restoration.

[245] Assumes each of the six sand dams fills to capacity twice per year and stores ~10.8 million L of abstractable water twice each year (total dam volume of 36,000 m³ and porosity of 30%). During the two dry seasons (90 days each = 180 days total), 20 L/person/day can be abstracted (or 120 m^3/day in total). Minimal losses are assumed due to subsurface storage and use of plastic liners. This enables 6,000 person years of water annually. It is further assumed that the full water supply will be abstracted; therefore, 6,000 direct beneficiaries will receive direct benefits through improved water supply from sand dams. Further assumes that low-flow pipes installed in restored embankments will supply water to surrounding farms at seven breakage sites each restored in Jowhar and Afgooye. A low-flow pipe at each restored breakage will provide water to 18 farms (10 residents/household) based on average canal length of 1,700 m and assumed 2 ha farms measuring 200 m along the river. These pipes will supply water to an additional 2,520 beneficiaries, for a total of 8,520 beneficiaries with improved water supply.

[246] The number of training beneficiaries includes ministry, CSO and NGO representatives (30), six community committees each comprised of 15 people (90) and 2,000 beneficiaries of training on demonstration plots (Outputs 2.2, 2.3 and 2.4) for a total of 2,120. The 12,200 direct beneficiaries receiving training on demonstration plots were calculated based on the target of 4,000 ha of rangelands to be brought under climate-smart management and average household land ownership of 2 ha (Adaption Fund, 2025). As a result, ~2,000 ha will benefit from improved rangeland management, comprising 12,200 people at 6.1 persons per household (National Bureau of Statistics, 2023). It is assumed that the beneficiaries of soil bunds and restored riverine areas will be included among these 12,200, so no additional beneficiaries are included to prevent double counting. Of these 12,200 direct beneficiaries, 2,000 will be counted under the Project Objective Indicator (one person per household across 2,000 households).

[247] Adaptation Fund. 2025. Green and Resilient Ecosystems for Somali Livelihoods (Hal-abuur). Retrieved from: https://www.adaptation-fund.org/wp-content/uploads/2025/03/3_AFB.PPRC_.35.17-Proposal-for-Somalia-1.pdf. Accessed on 27 June 2025.

[248] National Bureau of Statistics. 2023. 2022 Somalia Integrated Household Budget Survey (SIHBS). Retrieved from: https://nbs.gov.so/wp-content/uploads/2023/07/SOMALIA-INTEGRATED-HOUSEHOLD-BUDGET-SURVEY.pdf. Accessed on: 26 June 2025.

[249] Comprising adult women; girls are included under Youth beneficiaries.

[250] Ibid.

Changes in Asset	No tree SUDs in the target urban area	SUDs improve floodwater drainage in three urban areas for at least 100 households and serve as demonstration sites.
Adaptation Fund Core Impact Indicator "Natural Assets Protected or Rehabilitated"		
Natural Asset or Ecosystem: *Agropastoral land*		
Change in state (ha rehabilitated)	0	4,000
Natural Asset or Ecosystem: *Riverine areas*		
Change in state (ha rehabilitated)	0	130
Natural Asset or Ecosystem: *Erosion-prone slopes*		
Change in state (ha rehabilitated)	0	200
Total number of natural assets or ecosystems protected/rehabilitated	0	4

Table 22. Results framework according to project components.

Project strategy	Project objective indicators	Baseline	Target
Project objective: To increase the resilience and adaptive capacity of rural and urban communities in the Shabelle River basin through the effective replication and upscaling of established NbS and hybrid measures.	0.1 Number of people, disaggregated by gender, benefitting from innovative NbS and hybrid adaptation technologies and practices	0 individuals benefitting from innovative NbS and hybrid adaptation technologies and practices	20,840 individuals benefitting from innovative NbS and hybrid adaptation technologies and practices, of which at least 4,564 are adult women
	0.2 Number of innovative NbS and hybrid adaptation technologies and practices replicated in the target areas and surroundings with protocols and knowledge products developed for upscaling	0 innovative NbS and hybrid adaptation technologies and practices replicated in the target areas and surroundings with protocols and knowledge products developed for upscaling	At least four innovative NbS and hybrid adaptation technologies and practices replicated in the target areas and surroundings with protocols and knowledge products developed for upscaling
Component 1. Capacity building for the replication and upscaling of innovative nature-based solution (NbS) and hybrid technologies in Somalia			
Outcome 1. Strengthened institutional capacity to use innovative NbS/hybrid solutions to reduce flood and drought risks.	1.1. Percentage change in the capacity of ministry staff to implement NbS solutions disaggregated by gender	• Capacity score baseline value to be determined during inception phase	• At least 20% average increase in capacity scores of ministry staff, including women
Output 1.1. Capacity development programmes for flood and drought management, integrating innovative NbS and hybrid technologies, developed and delivered for institutional stakeholders.	1.1.1 Number of government, state and district-level authorities as well as NGO/CSO representatives trained through programmes developed and delivered, ,disaggregated by gender 1.1.2 Number of undergraduate and Masters modules in Sustainable Water Resources Management and Climate Change Adaptation developed	• 0 government, state and district-level authorities as well as NGO/CSO representatives trained through programmes developed and delivered • 0 undergraduate and Masters modules in Sustainable Water Resources Management and Climate Change Adaptation developed	• 20 (including at least five women) ministry and NGO/CSO representatives at the state level and 10 (including at least three women) at the national level trained, for a total of 30 representatives • One undergraduate and one Masters module in Sustainable Water Resources Management and Climate Change Adaptation developed .
Output 1.2. Three Adaptation Management Plans in prioritised sub-catchment and floodplain area, with protocols for planning and implementing NbS and hybrid technologies for adaptation generated.	1.2.1Number of Adaptation Management Plans (AMPs) developed in sub-catchment and floodplain areas and validated including gender-responsive NbS and hybrid technology protocols .	• 0 Adaptation Management Plans in the target sub-catchment and floodplain areas	• Three Adaptation Management Plans developed and validated for the target sub-catchment and floodplain areas including gender-responsive NbS and hybrid technology protocols .

Project strategy	Project objective indicators	Baseline	Target
Output 1.3. Three Adaptation Management Plans in prioritised urban areas, with protocols for planning and implementing urban green infrastructure technologies in flood-prone areas generated.	1.3.1 Number of Adaptation Management Plans (AMPs) developed in urban areas and validated including gender-responsive urban green infrastructure technology protocols	• 0 Adaptation Management Plans in the target urban areas	• Three Adaptation Management Plans developed and validated for the target urban areas including gender-responsive urban green infrastructure technology protocols
Output 1.4. Six local community committees established or capacitated and trained on participatory planning, implementation and monitoring of rural and urban Adaptation Management Plans.	1.4.1 Number of local community committees established or capacitated and trained on participatory planning, implementation and monitoring of Adaptation Management Plans 1.4.2 Number of community training workshops on implementation of catchment and urban greening plans developed and delivered	• 0 local community committees established or capacitated • 0 training workshops delivered	• Six local community committees established or capacitated, composed of at least 50% women with at least two women in decision-making positions • Two training workshops developed and delivered, attended by at least 50% women participants with documented application of skills by female committee members in AMP implementation and monitoring within 12 months of training.
• **Component 2. Protection of productive assets and livelihoods by innovative and proven adaptation NbS and hybrid technologies**			
Outcome 2. Enhanced resilience of vulnerable rural and urban populations to droughts and floods through the adoption of innovative adaptation practices, tools and technologies.	2.1 Number of individuals, disaggregated by gender, with access to improved water supply and flood and drought protection thanks to innovative NbS/hybrid solutions achieved through the project	• 0 community members with access to improved water supply and flood and drought protection thanks to innovative NbS/hybrid solutions achieved through the project	• 20,810[251] community members with access to improved water supply and flood and drought protection thanks to innovative NbS/hybrid solutions achieved through the project, of which at least 4,557 are adult women
Output 2.1. Six combined V-shaped weirs and sand dams built and equipped with solar pumps, elevated storage tanks, and gravity distribution systems in Beledweyne.	2.1.1. Number of fully equipped sand dams and V-shaped weirs built and equipped with solar water supply systems.	• 0 sand dams and V-shaped weirs built and equipped with solar water supply systems in the target areas	• Six sand dams and V-shaped weirs built and equipped with solar water supply systems
Output 2.2. Rangelands brought under climate-smart management practices through community empowerment in the three target districts.	2.2.1 Hectares of rangelands brought under climate smart management practices by the project in the target areas 2.2.2 Number of community members including women with a demonstrated understanding of climate-smart rangeland management gained through demonstration plot training .	• 0 ha of rangelands brought under climate smart management practices by the project in the target areas. • 0 community members including women trained and supported to implement climate-smart rangeland practices across the 4,000 ha target area	• At least 4,000 ha of rangelands brought under climate smart management practices • Women make up at least 50% of participants in nursery operations and rangeland management training, with documented evidence of women-led climate-smart practices adopted on at least 30% of the targeted rangeland area.
Output 2.3. Soil bunds constructed to reduce soil erosion and water run-off at the watershed level in Beledweyne.	2.3.1 Hectares of soil bunds constructed 2.3.2 Percentage of trained participants and tool recipients disaggregated by gender with post-training assessments showing improved knowledge and engagement in bund construction and maintenance.	• 0 ha of soil bunds constructed with support of the project in the target areas • 0 participants in soil bund construction activities are women	• 200 ha of soil bunds constructed by a workforce consisting of at least 50% women • At least 50% of participants in soil bund construction activities are women, with documented evidence of their sustained involvement in watershed restoration and decision-making on land management at the community level.

[251] Considers 90 community committee members receiving training, 8,520 beneficiaries of improved water supply and 12,200 beneficiaries of improved rangeland management, soil bunds and riverine restoration.

Project strategy	Project objective indicators	Baseline	Target
Output 2.4. River embankments restored and riverine areas revegetated or restored for the reinforcing of river embankments and retention and infiltration of flood water in Jowhar and Afgooye.	2.4.1Number of embankment breakage sites restored or strengthened 2.4.2 Hectares of riverine areas revegetate 2.4.3Number of community members including women employed and trained in embankment restoration and revegetation activities in Jowhar and Afgooye	• 0 breakage sites restored in the target areas with support of the project • 0 ha of riverine areas revegetated in the target areas with support of the project • Women constitute at least 0% of the restoration workforce	• 20 breakage sites restored or strengthened by a workforce consisting of at least 50% women • At least 130 ha of riverine areas revegetated • Women constitute at least 50% of the restoration workforce, with documented skills development and increased household income among female participants, contributing to long-term community resilience and ownership of flood protection infrastructure.
Output 2.5. Sustainable urban drainage systems (SUDs) improve urban drainage network.	2.5.1Number of households benefiting from SUDs	• 0 households benefiting from SUDS supported by the project in the target areas.	• At least 100 households benefiting from SUDs with 50% of direct beneficiaries being women.
Output 2.6. Waste management and its flood reduction benefits demonstrated in urban neighbourhoods.	2.6.1Number of waste management demonstration sites established 2.6.2 Number of community members including women trained and actively leading or participating in community-led waste collection drives	• 0 waste management demonstration plots in the target areasl • 0 women trained and actively leading or participating in community-led waste collection drives	• 10 waste management demonstration plots established in each district by a workforce consisting of at least 50% women • Women constitute at least 50% of trained participants and lead at least three high-visibility waste management initiatives (one per town), with documented reductions in localised flooding and improved community awareness of the gendered benefits of waste management.
• **Component 3. Improved enabling environment for investment in the replication and upscaling of adaptation NbS and hybrid solutions in Somalia**			
Outcome 3. Enhanced policies, incentives and guidelines to promote the use of proven innovative NbS measures and soil carbon trading.	3.1 Number of incentive guidelines, policy recommendations and carbon credit viability assessments validated by government stakeholders.	• 0 incentive guidelines, policy recommendations and carbon credit viability assessments validated by government stakeholders.	• At least one gender-responsive incentive guideline and policy recommendations provided for each relevant policy and one carbon credit viability assessment.
Output 3.1. Lessons learned and best practices are codified and disseminated to promote investment in NbS..	3.1.1 Number of knowledge products and reports generated and shared by the project that incorporate gender-specific insights and recommendations;	• 0 knowledge products and reports generated by the project that incorporate gender-specific insights and recommendations	• All project reports and dissemination materials include a gender-responsive section, with at least three gender-informed best practices documented.
Output 3.2. Recommendations for policy reforms and incentive packages are available at federal, member state, and local government levels to promote the development, replication and upscaling of NbS and hybrid measures.	3.2.1Number of relevant policies analysed and policy recommendations generated to promote NbS and hybrid adaptation that include gender responsive provisions.	• 0 climate change, land planning and water management policies with recommendations generated to promote NbS and hybrid adaptation that include gender-responsive provisions.	• At least three gender-responsive climate change, land planning and water management policies with recommendations generated to promote NbS and hybrid adaptation that include gender-responsive provisions. .

Project strategy	Project objective indicators	Baseline	Target
Output 3.3: Gender-responsive public awareness programmes developed and implemented.	3.3.1 Number of community awareness events, SMS and radio programmes disseminated. 3.3.2 Number of men and women reached through tailored awareness campaigns.	• 0 community awareness events. • 0 SMS sent. • 0 bi-weekly radio programmes broadcast across two years. • 0 men and 0 women reached through tailored awareness campaigns, via SMSs.	• Six community awareness events. • 500,000 SMS sent. • One bi-weekly radio programme broadcast across two years, with gender-differentiated programming. • 10,000 men and 10,000 women reached through tailored awareness campaigns messages sent by SMSs [252].
• **Component 4: Monitoring & Evaluation and Knowledge Management**			
Outcome 4: Effective monitoring and evaluation and knowledge management implemented.	4.1 Number of project evaluations completed (providing lessons learned and corrective actions).	• 0 project evaluations completed.	• Two project evaluations completed (one Mid-term Evaluation (MTE) and one Terminal Evaluation (TE)).
Output 4.1: Implementation of the Stakeholder Engagement Plan, Gender Action Plan, Environmental and Social Management Framework, Monitoring and Evaluation Plan and Knowledge Management Plan.	4.1.1 Presence of an ESS & Gender Officer formally integrated into the M&E and Knowledge Management team, with documented inputs in M&E reports, progress reviews, and knowledge products.	• 0 ESS & Gender Officers appointed and actively engaged throughout the project implementation period.	• One ESS & Gender Officer is appointed and actively engaged throughout the project implementation period, with gender-specific data, analysis, and recommendations included in all M&E reports.

F. Alignment with Adaptation Fund results framework

278. The EARNSS project aligns with the Adaptation Fund's Strategic Results Framework (AF SRF) by strengthening climate resilience through NbS and combined approaches in the three target districts of the Shabelle watershed: Beledweyne, Jowhar and Afgooye. It contributes to both of the Fund's impact-level results: i) increased adaptive capacity of communities to respond to the impacts of climate change; and ii) increased ecosystem resilience in response to climate change-induced stresses. At the outcome level, the project supports three of the Fund's eight outcomes, including 2, 7 and 8. In particular, the Project addresses vulnerability to floods, droughts and associated climate risks in the Shabelle River basin, focusing on strengthening resilience, improving water security and developing institutional capacity. The project outcomes ensure alignment with the AF SRF by contributing to enhanced adaptive capacity, reduced exposure to climate risks and improved resilience of built and natural assets. Accordingly, Table 23 below indicates the alignment of the Project's objectives and outcomes with the Adaptation Fund's outcomes and outputs.

Table 23. Alignment of project outcomes with the Adaptation Fund Results Framework.

Project Objective(s)	Project Objective Indicator(s)	Adaptation Fund Outcome	Adaptation Fund Outcome Indicator	Grant Amount (USD)[253]
Increase the resilience and adaptive capacity of rural and urban communities in the Shabelle River basin through the effective replication and upscaling of established NbS and hybrid measures.	Number of people disaggregated by gender benefitting from innovative NbS and hybrid adaptation technologies and practices	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1 Capacity of staff to respond to, and mitigate impacts of climate-related events from targeted institutions increased	1,034,029
	Number of innovative NbS and hybrid adaptation technologies and practices replicated in the target areas and surroundings with protocols and knowledge products developed for upscaling	Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	8.1. No. of new, adapted or improved adaptation solutions developed contextually and with the inclusion of the communities most vulnerable to climate change	3,175,643
Total outcome-level grant amount				**4,209,672**

[252] Since 500,000 SMSs are intended to be sent to notify subscribers in the target districts of upcoming radio shows (which take place over two implementation years), consultations, waste collection drives and other project-related events (see budget note C29 in Annex 2), it is assumed that SMSs will be sent out once per month over two years, resulting in 20,833 recipients, half of which (10,417) should be women, which is rounded to 10,000.
[253] Outcome 2: Outputs 1.1–1.4, 2.6, 3.1, 3.3 and 4.1; Outcome 8: Outputs 2.1–2.5 and Output 3.2

Project Outcome(s)	Project Outcome Indicator(s)	Adaptation Fund Output	Adaptation Fund Output Indicator	Grant Amount (USD)
Outcome 1: Strengthened institutional capacity to use innovative NbS/hybrid solutions to reduce flood and drought risks	Percentage change in the capacity of ministry staff to implement NbS solutions, disaggregated by gender	Output 2.1. Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)	444,106
Outcome 2: Enhanced resilience of vulnerable rural and urban populations to droughts and floods through the adoption of innovative adaptation practices, tools and technologies	Number of individuals, disaggregated by gender, with access to improved water supply and flood and drought protection thanks to innovative NbS/hybrid solutions achieved through the project	Output 8: Viable innovations are rolled out, scaled up, encouraged, accelerated, and/or evidence base generated at regional, national, and/or subnational level	8.1 No. of innovators supported (disaggregated by gender (male/female/other) and youth status (youth/non-youth)	2,987,733
Outcome 3: Enhanced policies, incentives and guidelines to promote the use of proven innovative NbS measures and soil carbon trading.	Number of incentive guidelines, policy recommendations and carbon credit viability assessments validated by government stakeholders	Output 8: Viable innovations are rolled out, scaled up, encouraged, accelerated	8.2.1 No. of key findings generated from an innovation practice, tool, and/or technology	566,451
Outcome 4: Effective monitoring and evaluation and knowledge management implemented	Number of project evaluations completed providing lessons learned and corrective actions			211,382
Total output-level grant amount				**4,209,672**

G. Budget

Table 24. Detailed budget (see budget notes description in Annex 2)

Activity	Category code	Category	Budget line code	Total	Y1 in $US	Y2 in $US	Y3 in $US	Y4 in $US	Y5 in $US	Implementing party	Budget note
Component 1: Capacity building for the replication and upscaling of innovative nature-based solution (NbS) and hybrid technologies in Somalia											
Outcome 1: Strengthened institutional capacity to use innovative NbS/hybrid solutions to reduce flood and drought risks											
Output 1.1: Capacity development programmes for flood and drought management, integrating innovative NbS and hybrid technologies, developed and delivered for institutional stakeholders.											
Activity 1.1.1: Develop and implement a capacity-building programme for Federal, State, and District level institutions on NbS and hybrid solutions planning and implementation based on capacity assessment findings.	1200	Consultants	1201	24,300	16,650	7,650				Sadar	A1
	3300	Meetings/conferences	3301	1,380	630	750				Sadar	A2
	5200	Reporting costs	5201	6,780	1,800	4,980				Sadar	A3
	1600	Travel on official business	1601	6,900		6,900				Sadar	A4
Activity 1.1.2: Develop protocols for NbS and hybrid solutions applicable to the context of Somalia.	1200	Consultants	1202	21,000	13,500	7,500				Sadar	A5
	5200	Reporting costs	5202	2,160	1,080	1,080				Sadar	A6
Activity 1.1.3: Develop university modules in collaboration with the Somali national universities to disseminate NbS knowledge captured in Activity 1.1.2.	1200	Consultants	1203	10,500	5,250	5,250				Sadar	A7
	3300	Meetings/conferences	3302	500	250	250				Sadar	A8
	5300	Sundry	5301	60,000			30,000	30,000		Sadar	A9

Total Output 1.1				**133,520**	**39,160**	**34,360**	**30,000**	**30,000**	**0**		
Output 1.2: Three Rural Water Management Plans, with protocols for planning and implementing NbS and hybrid technologies for adaptation generated											
Activity 1.2.1: Conduct technical assessments and cost-effectiveness analysis to guide the development of three Adaptation Management Plans in prioritised sub-catchment and floodplain areas incorporating NbS and hybrid solutions.	1200	Consultants	1204	40,250	20,125	20,125				Sadar	A10
	1200	Consultants	1205	36,000	18,000	18,000				UNEP	A11
	1200	Consultants	1206	4,200	4,200					Sadar	A12
	3303	Meetings/conferences	3303	4,600	4,600					Sadar	A13
	5200	Reporting costs	5203	1,890	1,890					Sadar	A14
	5300	Sundry	5302	48,235	48,235					Sadar	A15
	1600	Travel on official business	1602	2,000	1,000	1,000				Sadar	A16
	1600	Travel on official business	1603	1,029	1,029					Sadar	A17
Activity 1.2.2: Develop three Adaptation Management Plans in prioritized sub-catchment and floodplain areas to guide the planning and implementation of NbS and hybrid measures in target districts.	1200	Consultants	1207	9,000	4,500	4,500				Sadar	A18
	5200	Reporting costs	5204	1,770	885	885				Sadar	A19
Activity 1.2.3: Host a validation workshop to assess the plans developed under Activity 1.2.2 and validate priority sites for implementing NbS and hybrid solutions.	1200	Consultants	1208	7,500		7,500				Sadar	A20
	3300	Meetings/conferences	3304	3,300		3,300				Sadar	A21
	5200	Reporting costs	5205	3,480		3,480				Sadar	A22
	1600	Travel on official business	1604	1,029		1,029				Sadar	A23
Total Output 1.2				**164,283**	**104,464**	**59,819**	**0**	**0**	**0**		
Output 1.3: Three Urban Area Plans, with protocols for planning and implementing urban green infrastructure technologies in flood-prone areas generated											
Activity 1.3.1: Conduct technical assessments and cost-effectiveness analysis to guide the development of three Adaptation Management Plans in prioritised urban areas incorporating NbS and hybrid solutions.	1200	Consultants	1209	40,250	20,125	20,125				Sadar	A24
	1200	Consultants	1210	36,000	18,000	18,000				UNEP	A25
	5300	Sundry	5303	6,005	6,005					Sadar	A26
	1600	Travel on official business	1605	2,000	1,000	1,000				Sadar	A27
Activity 1.3.2: Develop three Adaptation Management Plans in prioritised urban areas for the implementation of green infrastructure and waste management in the target districts based on the gaps identified under Activity 1.1.1.	1200	Consultants	1211	7,500	3,750	3,750				Sadar	A28
	5200	Reporting costs	5206	720	360	360				Sadar	A29
Activity 1.3.3: Host a validation meeting to assess the plans developed under Activity 1.3.2 and confirm priority urban areas for urban green infrastructure and waste management.	1200	Consultants	1212	7,500		7,500				Sadar	A30
	3300	Meetings/conferences	3305	1,800		1,800				Sadar	A31
	5200	Reporting costs	5207	2,760		2,760				Sadar	A32
	1600	Travel on official business	1606	474		474				Sadar	A33

Total Output 1.3				**105,009**	**49,240**	**55,769**	**0**	**0**	**0**		
Output 1.4: Six local community committees established or capacitated, and trained on participatory planning, implementation and monitoring of Rural Water Management Plans and Urban Area Plans.											
Activity 1.4.1: Capacitate existing community committees and establish new committees to ensure capacity in each district to consolidate their participation in the Adaptation Management Plans, ensuring the presence of one rural and one urban committee in each district.	3200	Group training	3201	8,400		4,200	4,200			Sadar	A34
	3300	Meetings/conferences	3306	5,730		2,865	2,865			Sadar	A35
	1100	Project personnel	1101	7,500		3,750	3,750			Sadar	A36
	5200	Reporting costs	5208	180		90	90			Sadar	A37
	1600	Travel on official business	1607	4,501		2,250	2,251			Sadar	A38
Activity 1.4.2: Host training workshops in the three target districts for six community committees — including agropastoral and water-user groups — on the planning, implementation and monitoring of catchment and urban Adaptation Management Plans.	1200	Consultants	1214	4,200		2,100	2,100.00			Sadar	A39
	3200	Group training	3202	5,550		2,775	2,775			Sadar	A40
	1100	Project personnel	1102	3,000		1,500	1,500			Sadar	A41
	5200	Reporting costs	5209	855		427	428			Sadar	A42
	1600	Travel on official business	1608	1,378		689	689			Sadar	A43
Total Output 1.4				**41,294**	**0**	**20,646**	**20,648**	**0**	**0**		
		Sum (Component 1)		**444,106**	**192,864**	**170,594**	**50,648**	**30,000**	**0**		
Component 2: Protection of productive assets and livelihoods by innovative and proven adaptation NbS and hybrid technologies											
Outcome 2: Enhanced resilience of vulnerable rural and urban populations to droughts and floods through the adoption of innovative adaptation practices, tools and technologies											
Output 2.1: Six combined V-shaped weirs and sand dams built and equipped with solar pumps, elevated storage tanks, and gravity distribution systems in Beledweyne.											
Activity 2.1.1: Construct six combined V-shaped weirs and sand dams in five wadi catchments in Beledweyne.	1200	Consultants	1215	59,100	33,700	3,700	21,700			Sadar	B1
	4200	Non-expendable materials	4201	20,000		20,000				Sadar	B2
	1100	Project personnel	1103	46,465		19,482	26,983			Sadar	B3
	5200	Reporting costs	5210	1,440		1,440				Sadar	B4
	2300	Sub-contracts for commercial purposes	2301	964,800		934,800	30,000			Sadar	B5
	1600	Travel on official business	1609	3,450		3,450				Sadar	B6
Activity 2.1.2: Install one protected well in the throwback of each combined V-shaped weir and sand dam equipped with solar pumping system, elevated water storage tank, and a gravity-based water distribution system for domestic use and livestock for each sand dam in Beledweyne.	1200	Consultants	1216	20,400			18,900	1,500		Sadar	B7
	3200	Group training	3203	925				925		Sadar	B8
	3300	Meetings/conferences	3307	250			125	125		Sadar	B9
	1100	Project personnel	1104	7,500			3,750	3,750		Sadar	B10
	5200	Reporting costs	5211	240			240			Sadar	B11
	2300	Sub-contracts for commercial purposes	2302	630,000			567,000	63,000		Sadar	B12
	1600	Travel on official business	1610	1,475			830	645		Sadar	B13

Total Output 2.1				**1,756,045**	**33,700**	**982,872**	**669,528**	**69,945**	**0**		
Output 2.2: Rangelands brought under climate smart management practices through community empowerment in the three target districts											
Activity 2.2.1: Construct and stock one small-scale nursery in each of the three target districts for growing young plants for enrichment planting under Activity 2.2.3.	1200	Consultants	1217	3,000			3,000			Sadar	B14
	4100	Expendable materials	4101	7,125		3,562	3,563			Sadar	B15
	3200	Group training	3204	5,550			5,550			Sadar	B16
	4200	Non-expendable materials	4202	4,700		2,350	2,350			Sadar	B17
	5100	Operation and maintenance of equipment	5101	10,800			10,800			Sadar	B18
	1100	Project personnel	1105	20,000		2,500	17,500			Sadar	B19
	5300	Sundry	5304	16,200			16,200			Sadar	B20
	1600	Travel on official business	1611	1,878			1,878			Sadar	B21
Activity 2.2.2: Based on the Adaptation Management Plans in prioritised sub-catchment and floodplain developed under Output 1.2, build the capacity of agro-pastoralist and pastoralist to sustainably manage 4,000 ha of rangeland and demonstrate climate-smart management practices incorporating traditional knowledge and innovative practices.	1200	Consultants	1218	18,000			13,500	4,500		Sadar	B22
	3200	Group training	3205	41,465			24,765	16,700		Sadar	B23
	1100	Project personnel	1106	24,500			24,500			Sadar	B24
	1600	Travel on official business	1612	8,153			7,214	939		Sadar	B25
Total Output 2.2				**161,371**	**0**	**8,412**	**130,820**	**22,139**	**0**		
Output 2.3: Soil bunds constructed to reduce soil erosion and water run-off at the watershed level in Beledweyne.											
Activity 2.3.1: Provide training to community committees and distribute digging tools, including spades and hoes, to communities.	3200	Group training	3206	3,255			3,255			Sadar	B26
	4200	Non-expendable materials	4203	10,500			10,500			Sadar	B27
	1100	Project personnel	1107	35,000			35,000			Sadar	B28
Activity 2.3.2: Implement soil bunds on selected slopes in the target districts.	3200	Group training	3207	37,970			37,970			Sadar	B29
	1100	Project personnel	1108	2,500			2,500			Sadar	B30
	1600	Travel on official business	1613	3,546			3,546			Sadar	B31
Total Output 2.3				**92,771**	**0**	**0**	**92,771**	**0**	**0**		
Output 2.4: River embankments restored and riverine areas revegetated or restored for the reinforcing of river embankments and retention and infiltration of flood water in Jowhar and Afgooye											
Activity 2.4.1: Restore embankments with gabions and low-flow pipes in areas where breakages are anthropogenic.	1200	Consultants	1219	30,000		30,000				Sadar	B32
	1100	Project personnel	1109	32,000		16,000	16,000			Sadar	B33
	5200	Reporting costs	5212	90		90				Sadar	B34
	2300	Sub-contracts for commercial purposes	2303	300,000			300,000			Sadar	B35

	1600	Travel on official business	1614	1,059		1,059				Sadar	B36
Activity 2.4.2: Revegetate river embankments, banks of irrigation canals in Jowhar and Afgooye, and vegetate the paleochannel north of Jowhar town.	1200	Consultants	1220	2,700			900	900	900	Sadar	B37
	3200	Group training	3208	61,150			22,260	32,440	6,450	Sadar	B38
	1100	Project personnel	1110	77,000			21,000	18,000	38,000	Sadar	B39
	1600	Travel on official business	1615	5,079			4,170	285	624	Sadar	B40
Total Output 2.4				**509,078**	**0**	**47,149**	**364,330**	**51,625**	**45,974**		
Output 2.5: Sustainable urban drainage systems (SUDs) improve urban drainage network.											
Activity 2.5.1: Establish strategically placed ditches, detention basins and retention ponds in Beledweyne town, Jowhar town and Afgooye town.	1200	Consultants	1221	31,000			17,500	7,500	6,000.00	Sadar	B41
	3200	Group training	3209	5,640			2,820	2,820		Sadar	B42
	1100	Project personnel	1111	34,500			17,250	17,250		Sadar	B43
	2300	Sub-contracts for commercial purposes	2304	333,110			171,555	161,555		Sadar	B44
	1600	Travel on official business	1616	6,202			3,490	2,712		Sadar	B45
Total Output 2.5				**410,452**	**0**	**0**	**212,615**	**191,837**	**6,000**		
Output 2.6: Waste management and its flood reduction benefits demonstrated in urban neighbourhoods.											
Activity 2.6.1: Host training workshops in community buildings in Beledweyne, Jowhar and Afgooye Towns to present the importance and methods of waste collection in reducing flood impacts to local district authorities responsible for urban management.	1200	Consultants	1222	1,500		1,500				Sadar	B46
	3200	Group training	3210	1,980		1,980				Sadar	B47
	4200	Non-expendable materials	4204	6,000		6,000				Sadar	B48
	1100	Project personnel	1112	12,500		12,500				Sadar	B49
	1600	Travel on official business	1617	4,489		4,489				Sadar	B50
Activity 2.6.2: Conduct community-led waste collection drives to demonstrate, and involve community members in waste collection and proper disposal —to reduce flood impacts based on the plans developed under Output 1.3 — in Beledweyne, Jowhar and Afgooye town.	3200	Group training	3211	9,387		2,300	2,300	2,300	2,487	Sadar	B51
	4200	Non-expendable materials	4205	14,700		3,675	3,675	3,675	3,675	Sadar	B52
	1100	Project personnel	1113.5	6,500		1,625	1,625	1,625	1,625	Sadar	B53
	5200	Reporting costs	5213	960		240	240	240	240	Sadar	B54
Total Output 2.6				**58,016**	**0**	**34,309**	**7,840**	**7,840**	**8,027**		
			Sum (Component 2)	**2,987,733**	**33,700**	**1,072,742**	**1,477,904**	**343,386**	**60,001**		
Component 3: Improved enabling environment for investment in the replication and upscaling of adaptation NbS and hybrid solutions in Somalia											
Outcome 3: Enhanced policies, incentives and guidelines to promote the use of proven innovative NbS measures and soil carbon trading.											
Output 3.1: Lessons learned and best practices are codified and disseminated to promote investment in NbS.											
	1200	Consultants	1223	1,800	150	150			1,500	Sadar	C1

Activity 3.1.1: Document lessons learned and best practices during project implementation.	3200	Group training	3212	12,300	2,460	2,460	2,460	2,460	2,460	Sadar	C2
	3300	Meetings/conferences	3308	225	125	100				Sadar	C3
	5200	Reporting costs	5214	1,800	240	240	240	240	840	Sadar	C4
	1600	Travel on official business	1618	4,779	1,000	1,000	1,000	1,000	779	Sadar	C5
Activity 3.1.2: Develop and publish reports on the performance and cost-effectiveness of NbS and hybrid solutions implemented in the project.	1200	Consultants	1224	123,750			108,750	15,000		UNEP	C6
	5200	Reporting costs	5215	46,630			23,315	23,315		UNEP	C7
Activity 3.1.3: Disseminate knowledge products developed under Activities 3.2.1 and 3.2.2 to government stakeholders to promote the integration of NbS and hybrid measures into planning instruments.	5200	Reporting costs	5216	1,860			930	930		Sadar	C8
	2300	Sub-contracts for commercial purposes	2305	4,500	2,250	2,250				Sadar	C9
Total Output 3.1				**197,644**	**6,225**	**6,200**	**136,695**	**42,945**	**5,579**		
Output 3.2: Recommendations for policy reforms and incentive packages are available at federal, member state, and local government levels to promote the development, replication and upscaling of NbS and hybrid measures.											
Activity 3.2.1: Review relevant climate change, land planning and water management policies across to identify gaps and opportunities for integrating NbS and hybrid measures.	1200	Consultants	1225	88,000	44,000	44,000				UNEP	C10
	5200	Reporting costs	5217	720	360	360				UNEP	C11
	1600	Travel on official business	1619	10,000	5,000	5,000				UNEP	C12
Activity 3.2.2: Identify and evaluate community incentive mechanisms for uptake of NbS in consultation with local communities and key stakeholders and develop proposed incentive mechanism guidelines.	1200	Consultants	1226	3,300		1,650	1,650			Sadar	C13
	3200	Group training	3213	1,800		900	900			Sadar	C14
	1600	Travel on official business	1620	3,460		1,730	1,730			Sadar	C15
	1200	Consultants	1227	14,000		7,000	7,000			UNEP	C16
	5200	Reporting costs	5218	2,640		1,320	1,320			UNEP	C17
Activity 3.2.3: Develop and present viability assessment and business case for the development of a soil carbon credit scheme in Somalia to the Federal Government.	1200	Consultants	1228	86,500			23,500	43,250	19,750	UNEP	C18
	3300	Meetings/conferences	3309	325				162	163	UNEP	C19
	5200	Reporting costs	5219	7,020			2,550	3,510	960	UNEP	C20
	1600	Travel on official business	1621	16,378			5,000	8,189	3,189	UNEP	C21
Activity 3.2.4: Present recommendations for climate change, land planning and water management policy reforms based on the policy review (Activity 3.2.1), incentive mechanisms (Activity 3.2.2) and feasibility assessments (Activity 3.2.3) to federal government stakeholders in a workshop.	1200	Consultants	1229	10,500				5,250	5,250	UNEP	C22
	3300	Meetings/conferences	3310	800				400	400	UNEP	C23
	5200	Reporting costs	5220	480				240	240	UNEP	C24
Total Output 3.2				**245,923**	**49,360**	**61,960**	**43,650**	**61,001**	**29,952**		
Output 3.3: Gender-responsive public awareness programmes developed and implemented.											
	1200	Consultants	1230	45,000				22,500	22,500	Sadar	C25

Activity 3.3.1: Develop tailored awareness-raising strategies using educational resources, events, and media, including SMS, radio programmes and paper media (such as flyers and posters).	3200	Group training	3214	21,290				10,645	10,645	Sadar	C26
	1100	Project personnel	1115	30,000				15,000	15,000	Sadar	C27
	5200	Reporting costs	5221	6,270				3,135	3,135	Sadar	C28
	5300	Sundry	5305	11,000				5,500	5,500	Sadar	C29
	1600	Travel on official business	1622	9,324				4,662	4,662	Sadar	C30
Total Output 3.3				**122,884**	**0**	**0**	**0**	**61,442**	**61,442**		
			Sum (Component 3)	**566,451**	**55,585**	**68,160**	**180,345**	**165,388**	**96,973**		
Component 4: M&E and Knowledge Management											
Activity 4.1.1: Deliver training, implement and monitor the Stakeholder Engagement Plan, Gender Action Plan and Environmental and Social Management Framework.	1600	Travel on official business	1623	68,550	13,710	13,710	13,710	13,710	13,710	Sadar	D1
	3200	Group training	3215	250	250					Sadar	D2
	3300	Meetings/conferences	3311	6,031	6,031					Sadar	D3
	1100	Project personnel	1116	42,476	40,476	500	500	500	500	Sadar	D4
	5200	Reporting costs	5222	4,080	1,200	1,440	1,440			Sadar	D5
	1600	Travel on official business	1623	13,000	13,000					Sadar	D6
Activity 4.1.2: Implement the Monitoring and Evaluation Plan and Knowledge Management Plan.	1200	Consultants	1232	42,100	4,000		19,050		19,050	Sadar	D7
	1100	Project personnel	1117	30,000	6,000	6,000	6,000	6,000	6,000	Sadar	D8
	5200	Reporting costs	5223	4,895	979	979	979	979	979	Sadar	D9
			Sum (Component 4)	**211,382**	**85,646**	**22,629**	**41,679**	**21,189**	**40,239**		
			Sub-total (A)	**4,209,672**	**367,795**	**1,334,125**	**1,750,576**	**559,963**	**197,213**		
Project Execution costs (EE fee)											
Project Manager				238,159	47,632	47,632	47,632	47,632	47,631	Sadar	E1
M&E Officer				-	-	-	-	-	-	Sadar	E2
Procurement Officer				-	-	-	-	-	-	Sadar	E3
Finance Officer				75,000	15,000	15,000	15,000	15,000	15,000	Sadar	E4
ESS & Gender Officer				-	-	-	-	-	-	Sadar	E5
Technical Staff				-	-	-	-	-	-	Sadar	E6
Office Rent				60,000	12,000	12,000	12,000	12,000	12,000	Sadar	E7
Travel budget				2,464	495	495	495	495	484	Sadar	E8
PSC annual meeting				5,000	1,000	1,000	1,000	1,000	1,000	Sadar	E9
Office equipment				8,000	1,600	1,600	1,600	1,600	1,600	Sadar	E10
Annual audits				10,000	2,000	2,000	2,000	2,000	2,000	Sadar	E11

Sum (B)	**398,623**	**79,727**	**79,727**	**79,727**	**79,727**	**79,715**		
Sub-total (A+B)	**4,608,295**	**447,522**	**1,413,852**	**1,830,303**	**639,690**	**276,928**		
Implementing Entity fee	**391,705**	**78,341**	**78,341**	**78,341**	**78,341**	**78,341**		
Total	**5,000,000**	**525,863**	**1,492,193**	**1,908,644**	**718,031**	**355,269**		

The detailed budget notes are provided in Annex 2.

Table 25. MIE fee breakdown

MIE fee use is described in the table below.

Description	% Allocation	Amount (USD)
Staff costs for project coordination and project oversight, technical support, implementation support, and finance and budget support	60%	215,023
Baseline data report, External mid-term and terminal evaluation costs, M&E advice and oversight of project evaluations	31%	140,000
UNEP monitoring visits to Somalia	4%	15,000
Environmental and social safeguards expert support	6%	21,682
Legal support		
Audit and inspection support		
Total		**391,705**

H. Disbursement schedule

	Upon signature of Agreement	One Year after Project Start	Year 2	Year 3	Year 4	Total
Scheduled date	**June 2026**	**June 2027**	**June 2028**	**June 2029**	**June 2030**	
Project funds (US$)	367,795	1,334,125	1,750,576	559,963	197,213	4,209,672
Execution cost (US$)	79,727	79,727	79,727	79,727	79,715	398,623
Implementing Entity Fees (US$)	78,341	78,341	78,341	78,341	78,341	391,705
Total (US$)	525,863	1,492,193	1,908,644	718,031	355,269	5,000,000

PART IV: ENDORSEMENT BY GOVERNMENTS AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government

Mr. Liban Obsiye Executive Director, National Climate Fund, Ministry of Finance Federal Republic of Somalia	January 30, 2026

B. Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing Somalia National Adaptation Plan (NAP) 2025, National Climate Change Policy (2023) and National Transformation Plan (NTP) 2025–2029 and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
Mirey Atallah Implementing Entity Coordinator	
Date: 6 March 2026	Tel. and email: mirey.atallah@un,org
Project Contact Person: Jessica Troni	
Tel. And Email: 0795751072 jessica.troni@un.org	

Jamhuuriyadda Federaalka Soomaaliya
Wasaaradda Maaliyadda
Sanduuqa Qaran Ee Cimilada
Xafiiska Agaasimaha Fulinta

جمهورية الصومال الفيدرالية
وزارة المالية
الصندوق الوطني للمناخ
مكتب المدير التنفيذي

Federal Republic of Somalia
Ministry of Finance
National Climate Fund (NCF)
Office of The Executive Director

REF: NCF/003/2026 **January 30, 2026**

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for Enhancing Resilience through Nature-based Solutions(EARNSS) in Somalia.

In my capacity as designated authority for the Adaptation Fund in Somalia, I confirm that the above national project proposal is in accordance with the government's national priorities in implementing adaptation priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Somalia.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by United Nation Environment Program (UNEP) and executed by SADAR Development and Resilience Institute.

Sincerely,

Mr. Liban Obsiye
Executive Director,
National Climate Fund, Ministry of Finance
Federal Republic of Somalia

Enhancing Adaptation and Resilience through Nature-based Solutions in Somalia (EARNSS)

Annexes to the Adaptation Fund Full Proposal Programme on innovation: large grants projects

6 March 2026

Table of Contents

Annex 1: Endorsement letter

Jamhuuriyadda Federaalka Soomaaliya
Wasaaradda Maaliyadda
Sanduuqa Qaran Ee Cimilada
Xafiiska Agaasimaha Fulinta

جمهورية الصومال الفيدرالية
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Sincerely,
Liban
Mr. Liban Obsiye
Executive Director,
National Climate Fund, Ministry of Finance
Federal Republic of Somalia

Address: Office of the President, Villa Somalia, Mogadishu, Somalia
Website: www.ncf.gov.so | **Email:** ednef@mof.gov.so | **Phone:** +252 61 0997293

Annex 2: Budget notes

Budget note	Budget note description
Component 1: Capacity building for the replication and upscaling of innovative nature-based solution (NbS) and hybrid technologies in Somalia	
A1	Capacity analysis consultant to conduct FGDs/KIIs, review reports and develop and present a gap analysis and training manuals for ministerial technical and management staff, budgeted @US$300/day for 81 days.
A2	Costs for FGDs/KIIs and workshops with ministerial and academic/research stakeholders, including catering budgeted @US$15/person for 50 persons, printing of meeting materials @US$4/copy for 40 copies, stationery @US$6/set for 50 sets (where one set consists of a notebook and pen). Moreover, equipment including a projector @US$50, a voice recorder @US$50 and two flash drives @US$15/flash drive will be procured for use in all consultations during project implementation. Of the total cost of this budget note, 20% contributes to the GAAP budget.
A3	Consultant to write workshop report, budgeted @US$300/day for 10 days. Translation of documents, including gap analysis report, training manuals and workshop report, budgeted @US$30/hour for 52 hours. Printing and, where appropriate, binding of documents budgeted @US$9.5/copy for 180 copies. Mailing document hardcopies to ministerial stakeholders, budgeted @US$5/parcel for 90 parcels.
A4	Travel for state ministerial representatives to Mogadishu to attend workshops, budgeted @US$250/return flight and @US$220/return flight for 10 return flights each from Hirshabelle and South West, respectively. Accommodation for these ministerial representatives, budgeted @US$50/person night for 20 person nights. Food for ministerial representatives, budgeted @US$30/person day for 40 person days.
A5	NbS specialist consultant to i) assess best practices and lessons learned for NbS, hybrid solutions in Somalia and other countries that could be applied in the context of Somalia, collecting evidence that supports the effectiveness of solutions; ii) assess the hydrological and geospatial data, and hydrological modelling required for effective planning and implementation of NbS and hybrid solutions; and iii) develop technical protocols for the design and implementation of the identified NbS and hybrid solutions, including the data analyses and modelling required, as well as an outline of effective knowledge management, budgeted @US$300/day for 60 days. Hydrologist to assess the hydrological and geospatial data, and hydrological modelling required for effective planning and implementation of NbS and hybrid solutions, budgeted @US$300/day for 10 days.
A6	Translation of documents, including protocols for NbS and hybrid solutions applicable to the context of Somalia, budgeted @US$30/hour for 48 hours. Printing and, where appropriate, binding of documents budgeted @US$9.5/copy for 60 copies. Mailing document hardcopies to ministerial stakeholders, budgeted @US$5/parcel for 30 parcels.
A7	NbS specialist consultant to i) develop one undergraduate and one Masters module for the course 'Master of Arts in Sustainable Water Resources Management and Climate Change Adaptation' that outline the protocols for planning and implementing NbS, a hydrological modelling component, as well as the development and operation of an online knowledge management platform, based on the protocols developed in Activity 1.1.2; and ii) develop an introductory short course on the hydrological and geospatial data analytic skills that are identified as necessary in Activity 1.1.2., budgeted @US$300/day for 35 days.
A8	Costs for KIIs with academics and researchers, including catering budgeted @US$15/person for 20 persons, stationery @US$6/set for 20 sets and printing of meeting materials @US$4/copy for 20 copies. Of the total cost of this budget note, 15% contributes to the GAAP budget.
A9	Tuition fees to enrol 12 ministerial and NGO/CSO representatives in master's module developed under Activity 1.1.3, budgeted @US$5,000 per person.
A10	National hydrologist to conduct hydrological, topographical and land use assessment for the identification of the NbS and hybrid solutions in the sub-catchment and floodplain areas and ground-truth the required rural data, budgeted @US$200/day for 50 days. Financial specialist to conduct projected cost-effectiveness analysis of NbS solutions based on modelling in Sub-activity 1.2.1.1, budgeted @US$1,512.50/day for 20 days.
A11	International hydrologist to conduct hydrological, topographical and land use assessment for the identification of the NbS and hybrid solutions in the sub-catchment and floodplain areas and ground-truth the required rural data, budgeted @US$400/day for 90 days.
A12	Civil engineer to assess Operations and Maintenance costs and develop cost recovery mechanism, budgeted @US$300/day for nine days. NbS specialist consultant to validate cost recovery mechanism details with stakeholders in project districts, budgeted @US$300/day for five days.
A13	Costs to host validation workshop, including catering budgeted @US$15/person for 100 persons, printing of meeting materials @US$4/copy for 100 copies, stationery @US$6/set for 100 sets and venue hire @US$12.5/hour for 24 hours. Consultant to write validation workshop report, budgeted @US$300/day for six days.
A14	Translation of documents, including cost recovery mechanism/Operations & Maintenance reports, budgeted @US$30/hour for 15 hours. Printing and, where appropriate, binding of documents budgeted @US$9.5/copy for 60 copies. Mailing document hardcopies to ministerial stakeholders, budgeted @US$5/parcel for 30 parcels.
A15	Procurement of hydrological, topographical and land use assessment data from the World DEM2 datasets for the identification of the NbS and hybrid solutions in the sub-catchment and floodplain areas in rural Beledweyne and Afgooye, budgeted @US$25,450 for Beledweyne and @US$22,785 for Afgooye.
A16	Travel for hydrologist to ground-truth these data in Beledweyne and Afgooye, budgeted @US$2,000 (lump sum).
A17	Travel to validate cost recovery mechanisms in Beledweyne, Jowhar and Afgooye towns to stakeholders, including local authorities and communities, including one return flight each to Beledweyne and Jowhar budgeted @US$250 and US$220, respectively, as well as petrol costs to drive to Afgooye @US$0.15/km for 60 km. Costs for a security guard/fixer to accompany consultant to Afgooye, budgeted @US$300/day for one day. Accommodation and food during visits to target districts budgeted @US$35/person night and @US$15/person day for 2 person nights and 12 person days, respectively.
A18	NbS specialist consultant to develop and publish three Adaptation Management Plans in prioritized sub-catchment and floodplain areas identifying suitable NbS and hybrid solutions for flood and drought risk reduction to be implemented under Outputs 2.1 to 2.4, based on the modelling and technical assessments in Activity 1.2.1, and incorporating social and land-use data from community consultations conducted during project development, as well as the protocols developed under Activity 1.1.2, budgeted @US$300/day for 30 days.
A19	Translation of documents, including Adaptation Management Plans in prioritised sub-catchment and floodplain areas to guide the planning and implementation of NbS and hybrid measures in target districts, budgeted @US$30/hour for 35 hours. Printing and, where appropriate, binding of documents budgeted @US$9.5/copy for 60 copies. Mailing document hardcopies to ministerial stakeholders, budgeted @US$5/parcel for 30 parcels.
A20	NbS specialist to i) host a validation workshop in Beledweyne, Jowhar and Afgooye towns to present the three Adaptation Management Plans in prioritized sub-catchment and floodplain areas to district-level stakeholders, including local authorities and communities; ii) write and publish a validation workshop report summarising discussion points and recommendations for revisions of the three Adaptation Management Plans in prioritised sub-catchment and floodplain areas; and iii) integrate the recommendations of the validation workshop report three Adaptation Management Plans in prioritized sub-catchment and floodplain areas, budgeted @US$300/day for 25 days.
A21	Costs to host validation workshop, including catering budgeted @US$15/person for 60 persons, printing of meeting materials @US$4/copy for 60 copies, stationery @US$6/set for 60 sets and venue hire @US$12.5/hour for 24 hours. Consultant to write validation workshop report, budgeted @US$300/day for 5 days. Of the total cost of this budget note, 20% contributes to the GAAP budget.
A22	Translation of documents, including draft Adaptation Management Plans, a validation workshop report and final Adaptation Management Plans integrating workshop feedback, budgeted @US$30/hour for 68 hours. Printing and, where appropriate, binding of documents budgeted @US$9.5/copy for 120 copies. Mailing document hardcopies to ministerial stakeholders, budgeted @US$5/parcel for 60 parcels.

A23	Travel to host a validation workshop in Beledweyne, Jowhar and Afgooye towns to present the three Adaptation Management Plans in prioritized sub-catchment and floodplain areas to district-level stakeholders, including local authorities and communities, including one return flight each to Beledweyne and Jowhar budgeted @US$250 and US$220, respectively, as well as petrol costs to drive to Afgooye @US$0.15/km for 60 km. Costs for a security guard/fixer to accompany consultant to Afgooye, budgeted @US$300/day for one day. Accommodation and food during visits to target districts budgeted @US$35/person night and @US$15/person day for 2 person nights and 12 person days, respectively.
A24	National hydrologist to ground-truth urban World DEM2 data, budgeted @US$200/day for 50 days. Financial specialist to conduct projected cost-effectiveness analysis of NbS solutions based on technical assessments in Sub-activity 1.3.1.1. and technical design options, budgeted @US$1,512.50/day for 20 days.
A25	International hydrologist to conduct a household survey in Beledweyne, Jowhar and Afgooye to collect perceptions of urban flooding to adjust project indicators, budgeted @US$400/day for 90 days.
A26	Procurement of hydrological, topographical and land use assessment data from the World DEM2 datasets for the identification of the NbS and hybrid solutions in the sub-catchment and floodplain areas in urban Beledweyne and Afgooye, budgeted @US$1080 for Beledweyne and @US$925 for Afgooye. Ground-truthing at survey points, budgeted @US$2,000/district in Beledweyne and Afgooye.
A27	Travel for national hydrologist to ground-truth urban World DEM2 data and survey results in Beledweyne and Afgooye, budgeted @US$2,000 (lump sum).
A28	Nature-based Solutions (NbS) specialist consultant budgeted @US$300/day for 25 days to develop and publish three Adaptation Management Plans in prioritised urban areas identifying urban NbS and hybrid solutions, including waste management, to be implemented under Outputs 2.1 to 2.4, based on the modelling and analysis.
A29	Printing and binding of the Adaptation Management Plans in prioritised urban areas — identifying urban NbS and hybrid solutions, including waste management, to be implemented under Outputs 2.1 to 2.4, based on the modelling and technical assessments in Activity 1.3.1, and incorporating social and land-use data from community consultations conducted during project development, as well as the protocols developed under Activity 1.1.2 and the resilience plans for Beledweyne and Jowhar, and Afgooye (latter under development) — budgeted @US$9.5/copy for 60 copies. Mailing parcels containing two copies of the documents to ministerial stakeholders, budgeted @US$5/parcel for 30 parcels.
A30	Nature-based Solutions (NbS) specialist consultant budgeted @US$300/day for 25 days to present a validation workshop, write validation workshop report and integrate validation workshop feedback into Adaptation Management Plans.
A31	Costs to host a validation workshop in the target districts to validate the Adaptation Management Plans in prioritised urban areas. This includes catering budgeted @US$15/person for 60 persons (20 per district), stationary @US$6/set for 60 sets and printing meeting materials @US$4/copy for 60 copies and venue hire for 24 hours @US$12.5/hour (8 hours per district). Of the total cost of this budget note, 20% contributes to the GAAP budget.
A32	Translation of documents — including a validation workshop report and integration of workshop feedback into Adaptation Management Plans in prioritised urban areas, budgeted @US$30/hour for 44 hours. Printing and, where appropriate, binding, these documents — budgeted @US$9.5/copy for 120 copies. Mailing parcels containing two copies of the documents to ministerial stakeholders, budgeted @US$5/parcel for 60 parcels.
A33	Travel costs for validation workshops in the target districts to validate the Adaptation Management Plans in prioritised urban areas. These costs include travel to Afgooye for one NbS specialist consultant and one security staff budgeted @US$0.15/km for 60 km. These workshops will be held immediately following the validation workshops for prioritised sub-catchments and floodplain area Adaptation Management Plans; consequently, no travel costs are allocated to return flights to Beledweyne or Jowhar. Moreover, accommodation is budgeted @US$35/person night for 3 person nights and food @US15/person day for 4 person days. A security consultant/fixer will accompany the NbS specialist consultant to Afgooye, budgeted @US$300/day for 1 day.
A34	Venue hires to conduct a participatory mapping and assessment of existing committees (e.g. resilience committees, natural resources management committees, VSLAs, cooperatives, water-user groups, traditional councils, women/youth associations and conflict resolution committees) across rural and urban contexts in Beledweyne, Jowhar and Afgooye, recording the number of members in each committee, their hierarchy, leaders and contact details, budgeted @US$12.5/hour for 48 hours (16 hours per district). Catering, printing of meeting materials and stationery for these mapping and assessment consultations is budgeted @US$15/person, @US$4/copy and @US$6/set for 90 persons, respectively. Costs to host a capacity-building workshop in the target districts to capacitate the community committees. This includes catering budgeted @US$15/person for 90 persons (15 per committee), stationary @US$6/set for 90 sets and printing meeting materials @US$4/copy for 90 copies. Moreover, venues will be hired for 48 hours @US$12.5/hour (16 hours per district). The community committees in each district will receive US$450/committee/day. Of the total cost of this budget note, 15% contributes to the GAAP budget.
A35	Costs of focus group discussions between district-level government and community committees in each district to collect inputs on the Adaptation Management Plans and incorporate inputs into these plans. These include catering, budgeted @US$15/person for 120 persons (60 per district), printing of meeting materials @US$4/copy for 120 copies and venue hire @US$12.5 for 24 hours (8 hours per district). A consultant will collate feedback into a report, budgeted @US$300/day for 1.5 days. The community committees in each district will receive US$450/committee (US$30/person, with ~15 persons per committee) per day. Of the total cost of this budget note, 20% contributes to the GAAP budget.
A36	PMU ESS & Gender Officer to conduct participatory mapping and assessment of existing committees, host a training workshop to capacitate community committees and host group discussions between district government and community committees, budgeted @US$500/day for 15 days.
A37	Translation of documents, including the incorporation of feedback from group discussions with district-level government and community committees into Adaptation Management Plans, budgeted @US$30/hour for six hours.
A38	Travel costs to attend participatory mapping and assessments, as well as training workshops and group discussions in the target districts. These include four return flights to Beledweyne (conflict analysis specialist and ESS & Gender Officer, for i) the participatory mapping and assessment; and ii) the capacity-building workshop and group discussions in the same trip), budgeted @US$250/return flight, as well as four return flights to Jowhar @US$220/return flight. Moreover, three trips to Afgooye are budgeted @US$60/km for 180 km. During the Afgooye trips, a security services personnel member will accompany the conflict analysis specialist and ESS & Gender Officer, budgeted @US$300/day for five days. Accommodation during all trips is budgeted @US$25/person night for 16 person nights, and food is budgeted @US$15/person day for US$15/person day for 35 person days.
A39	Nature-based Solutions (NbS) specialist consultant budgeted @US$300/day for 14 days to develop workshop learning material on the planning, implementation and monitoring of the Adaptation Management Plans and host these workshops.
A40	Costs to host a training workshop in the target districts for six local community committees on the planning, implementation and monitoring of Adaptation Management Plan. This includes catering budgeted @US$15/person for 90 persons (15 per committee), stationary @US$6/set for 90 sets and printing meeting materials @US$4/copy for 90 copies. Moreover, venues will be hired for 48 hours @US$12.5/hour (16 hours per district). The community committees in each district will receive US$450/committee/day. Of the total cost of this budget note, 15% contributes to the GAAP budget.
A41	PMU ESS & Gender Officer to design workshops and develop learning material on the planning, implementation and monitoring of the Adaptation Management Plans, budgeted @US$500/day for six days.
A42	Printing and, where appropriate, binding of workshop learning material on the planning, implementation and monitoring of the Adaptation Management Plans, budgeted @US$9.5/copy for 90 copies.
A43	Travel costs to attend participatory mapping and assessments, as well as training workshops and group discussions in the target districts. These include one return flight to Beledweyne for the NbS specialist consultant, budgeted @US$250/return flight, as well as to Jowhar @US$220/return flight. Moreover, two daytrips to Afgooye are budgeted @US$60/km for 120 km. During the Afgooye trips, a security services personnel member will accompany the conflict analysis specialist and ESS & Gender Officer, budgeted @US$300/day for two days. Accommodation during all trips is budgeted @US$25/person night for four person nights, and food is budgeted

	@US$15/person day for US$15/person day for 10 person days.
Component 2: Protection of productive assets and livelihoods by innovative and proven adaptation NbS and hybrid technologies	
B1	Several consultant costs, including: i) contracting an Environmental and Social Safeguards consultancy at a lump sum cost of US$30,000 to conduct an Environmental and Social Impact Assessment of combined V-shaped weir and sand dam construction in Beledweyne; ii) national hydrologist (MoEWR), budgeted at US$300/day for 20 days per year over three years, as well US$700 per year over three years for travel; and iii) a civil engineer to supervise construction of sand dams and weirs, budgeted at US$300/day for 60 days.
B2	Procuring a pressure transducer at a lump sum cost of US$20,000 to support construction and monitoring of combined V-shaped weirs and sand dams in Beledweyne.
B3	Project Management Unit costs for procurement support, based on 15 days of procurement officer time @US$500/day, to facilitate contracting and delivery of materials for combined V-shaped weir and sand dam construction in Beledweyne. A portion of Project Manager salary for site visits, supervision and provision of Operations & Maintenance support to community committees, budgeted at US$48,283.
B4	Developing documentation, including technical reports and supporting materials, for the ground truthing and validation of combined V-shaped weir and sand dam designs in Beledweyne, based on 56 hours of consultant time @US$30/hour.
B5	Subcontracting an independent civil engineering firm @US$1,000/day for 30 days to ground truth the sites selected in Activity 1.2.1 and to prepare and validate technical designs for the combined V-shaped weirs and sand dams in Beledweyne. Contracting a construction firm @US$154,000 per combined dam to procure the necessary materials, build six combined V-shaped weirs and sand dams in Beledweyne and conduct necessary repairs on these during the project's duration. A two-year warranty for the combined dams will be requested and is included in the cost per dam given above.
B6	Travel costs for consultants and engineers. This includes daily subsistence allowance, as well as return flights at US$250 each, to support ground truthing and technical design of combined V-shaped weirs and sand dams in Beledweyne, monitoring the construction of protected wells, the installation of solar pumps, storage tanks, community taps, livestock troughs and pipe networks, and iii) training the communities to operate and manage water resources provided.
B7	Civil engineer to : i) train the community committees established in Output 1.4 to operate and manage the water resources provided in Output 2.1, with support from the MoEWR, budgeted @US$300/days for 2 days; ii) monitor the construction of wells and water distribution systems, budgeted @US$300/days for 6 days; and iii) monitor the construction of the wells and water distributions systems, budgeted at US$300/day for 60 days.
B8	Costs for training community committees on the basic operation and management of all water infrastructure installed under Output 2.1. Costs include: i) community committee fee for training attendance, at US$450/day for one day; ii) catering at US$225 for 15 people; iii) venue hire at US$100; and iv) stationery and printing costs at US$150. Of the total cost of this budget note, 15% contributes to the GAAP budget.
B9	Inspection meeting for the monitoring of construction, including catering and venue hire costs, budgeted at US$125/meeting for two meetings. Of the total cost of this budget note, 20% contributes to the GAAP budget.
B10	Procurement Officer fee to oversee contracting of construction firm for the installation of wells and water distribution systems, at US$7,500.
B11	Translation of ground-truthing reports, budgeted at US$30/hour for 8 hours.
B12	Subcontracting an independent civil engineering firm @US$1,000/day for 30 days and an engineer @US$300/days for 8 days to i) monitor the construction of protected wells, and the installation of solar pumps, storage tanks, community taps, livestock troughs and pipe network; and ii) train the community committees established in Output 1.4 to operate and manage the water resources provided in Output 2.1, with support from the MoEWR. In addition, a construction firm will be contracted to install wells and water distributions systems and conduct necessary repairs on these for the project's duration, budgeted at US$600,000. A two-year warranty for the water infrastructure will be requested and is included in the cost given above.
B13	Travel costs for the civil engineer. This includes: i) return flights at US$250/ticket for 3 flights; ii) accommodation at US$35/person night for 13 nights; and iii) food at US$15/day for 18 days.
B14	Consultant fee for 10 days @US$300/day for an NbS specialist to instruct community committees on the operation and maintenance of nurseries, appointing committee members to certain roles.
B15	Procurement of the following expendable materials for 3 sites: i) polythene seedling bags, hand tools (hoes, watering cans, shovels), seed trays and nursery tables costed @US$2,000/site; ii) seeds, seedlings and saplings costed @US$200/site; iii) packaging materials/containers for seedling transport and storage costed @US$100/site; and iv) organic compost/fertiliser @US$75/site.
B16	Group training cost for instructing community committees on the operation and maintenance of nurseries, appointing committee members to certain roles. Costs include a committee fee of US$450/day for 6 days, catering @US$15/person for 90 persons, venue hire @US$12,5 for 48 days, 90 sets of notebooks and pens @US$6/set of stationery and printing costs @US$4/copy for 90 copies. Of the total cost of this budget note, 15% contributes to the GAAP budget.
B17	Non-expendable materials for 3 sites include: i) transport of materials to each site for a lump sum of US$2,000; ii) timber, nails, corrugated roofing sheets, and fasteners for storage shed costed @US$375/site; iii) safety equipment and protective clothing for nursery workers (gloves, boots) costed @US$300/site; iv) shade netting, poles, wire mesh, and fencing materials for nursery enclosure costed @US$ 150/site; and v) 1,000-liter plastic or ferrocement water tank from a certified supplier costed @US$75/site.
B18	Operations and maintenance of nursery during project lifespan @300/month for 36 months.
B19	Project personnel costs include: i) procurement officer fee of US$500/day for 10 days to procure materials for building an open nursery, storage shed and small (~1,000 L) water tank, as well as consumables required for nursery operation, in each district; and ii) PMU technical staff fee of US$500/day for 30 days for the construction of one nursery and storage shed, and install an adjacent water tank in each district using a cash-for-work modality
B20	Sundry costs associated with nursery construction include: i) a committee fee costed @US$450/day for 30 days; ii) local labour/artisans fee costed @US$80/day for 30 days; and iii) food provided to labourers costed @US$10/day for 30 days.
B21	Travel costs for training workshops including i) 2 return flights to Beledweyne and 2 return flights to Jowhar @US$250/return flight; ii) local travel in Afgooye @US$0.15/km for 120 km, iii) security services @US$300/day for 10 days; iv) accommodation for the extension officer over 4 person nights @US$35/ person night; and v) food for the extension officer and security personnel @US$15/person day for 12 person days.
B22	Consultant costs include: i) an agricultural specialist for 15 days @US$300/day to design and implement a capacity building programme on climate smart rangeland management practices; and ii) an agricultural extension officer will be hired @US$300/day to establish demonstration plots over 30 days, then revisit and assess each plot to develop a second round of plots over 15 days.
B23	Costs of training workshops on climate smart rangeland management practices that incorporate traditional knowledge and innovative practices. These workshops include catering budgeted @US$15/person for 45 persons, printing of meeting materials @US$4/person for 45 persons, stationery @US$6/set for 45 sets, venue hire @US$12.5/hour for 12 hours and a committee fee @US$450/day for 1.5 days. Costs for developing demonstration plots including i) basic field tools, gloves, watering cans and protective gear, field signage, site monitoring forms and community logbooks @US$1,405/site for 3 sites; ii) transport of seedlings from community hubs to demo plot sites @US$10/hour for 160 hours, iii) transport of committee members to plots @US$10/hour for 160 hours; iv) committee fees @US$450/day for 60 days; v) local labour/artisans fee @80/day for 60 days and food @US$10/person days for 30 person days. Of the total cost of this budget note, 15% contributes to the GAAP budget.
B24	Project personnel costs include: i) a PMU M&E Officer costed @US$1,000/day to monitor the design and implementation of climate smart rangeland management practices for 22 days; ii) a PMU Procurement Officer costed @US$500/day to manage the development of demonstration plots 5 days.
B25	Travel costs include: i) security services for 1 day costed @US$300/day; ii) 2 return flights to Beledweyne costed @US500; iii) 2 return flights to Jowhar costed @US440; iv) food provided to the agricultural specialist and

	security costed @US$15/day for 6 person days; v) accommodation for the agricultural specialist costed @US$35/night for 2 nights; vi) travel to Afgooye costed @US$0.15/km for 120 km; vii) travel costs for PMU to visit plots for a lump sum of US$3546,8; viii) accommodation for the agricultural extension officer and security costed @US$35/night for 30 nights; and ix) food provided to the agricultural extension officer and security costed @US$15/day for 60 person days.
B26	Costs of training workshops to train the rural community committees on soil bund construction and maintenance. These workshops include catering budgeted @US$15/person for 45 persons, printing of meeting materials @US$4/person for 45 persons, stationery @US$6/set for 45 sets, venue hires @US$12.5/hour for 24 hours and a committee fee @US$450/committee for three committees. Transport of committee members to plots is budgeted @US$20/hour for 24 hours. Of the total cost of this budget note, 15% contributes to the GAAP budget.
B27	Procurement of non-expendable materials include: i) digging tools, such as spades and hoes, to supply NbS and hybrid solutions demonstration plot implementation by local communities budgeted @US$3,000/district in 3 target districts; and ii) US$1,500 for transport to district storage facilities.
B28	Project personnel costs include: i) 3 PMU technical staff to equitably distribute digging tools through agricultural community committees established under Activity 1.4.1, budgeted @US$500/person day for 60 person days; and ii) 1 PMU Procurement Officer costs to manage procurement and transport of tools to districts, budgeted @US$500/day for 10 days.
B29	Group training costs for the development of demonstration plots for soil bunds include: i) community committees fees budgeted @US$450/day for nine days; ii) procurement of construction materials budgeted @US$30,000; iii) protective gear budgeted @US$900/district in 3 districts; iv) local labourers to develop these demonstration plots under a CfW modality, budgeted @US$80/day collectively for nine days; and v) food and drink provided to labourers @US10/person day for 50 person days. Of the total cost of this budget note, 15% contributes to the GAAP budget.
B30	Project personnel costs include 1 PMU Procurement Officer to manage procurement of construction materials and protective gear for soil bund construction, budgeted @US$500/day for 5 days.
B31	Travel costs for PMU to visit plots budgeted as a lump sum of US$3,546.80
B32	Civil engineering firm to ground-truth sites and prepare technical designs for the embankment restoration in Jowhar and Afgooye, budgeted @US$1,000/day for 30 days.
B33	Two PMU technical staff in Jowhar and Afgooye to: i) assist in ground-truthing sites and preparing technical designs for the embankment restoration; and ii) supervise installation of gabions and low-flow pipes in areas where breakages are anthropogenic — including confluence of river and irrigation canals in Afgooye — to allow access to water during periods of low flow, budgeted @US$1,000/day for 32 days.
B34	Translation of technical design documents, budgeted at @US$30/hour for three hours.
B35	Construction firm to install gabions and low-flow pipes at anthropogenic breakage sites and conduct necessary repairs to these for the project's duration where appropriate, budgeted @US$15,000/site for 20 breakage sites. A two-year warranty for the gabions and low-flow pipes will be requested and is included in the cost given above.
B36	Travel costs for site confirmation and technical design development for embankment restoration in Jowhar and Afgooye, including: i) security services, budgeted @US$300/day for 1 day; ii) 1 return flight to Jowhar @US$250; iii) travel to Afgooye budgeted @US$0.15/km for 60 km; iv) accommodation for consultants budgeted @US$35/night for 10 person nights; and v) food for consultants and security, budgeted @US$15/day for 10 person days.
B37	Costs for NbS special consultants to: i) support the establishment of demonstration revegetation plots on river embankments in Jowhar and Afgooye; ii) support the establishment of a wetland in the paleochannel north of Jowhar Town; and iii) revisit demonstration and scaled implementation sites in collaboration with community committees, budgeted @US$300/day for nine days.
B38	Costs for development of demonstration plots in collaboration with community members, including: i) community committee fees of US$450/day for 30 days; ii) local labour/artisan fees of US$80/day for 60 days; iii) site monitoring forms and community logbooks @US$10/site across 2 sites; iv) field signage for 2 demonstration plots @US$50/site; v) protective gear supplied to labourers across 2 sites @US$900/site; vi) transport of committee members to plots @US$10/hour for 72 hours; vii) transport of seedlings from nurseries @US$10/hour for 72 hours; and viii) food provided to labourers @US$10/day for 60 person days. Costs for establishment of a wetland with community members in Jowhar, including: i) community committee fees of US$450/day for 60 days; ii) local labour/artisan fees of US$80/day for 60 days; iii) transport of committee members to wetland @US$10/hour for 2 hours; vii) transport of seedlings from nurseries @US$10/hour for 2 hours; and viii) food provided to labourers @US$10/person day for 60 person days. Costs for revisiting and assessing demonstration sites, including: i) local labour/artisan fees of US$80/day for 60 days; ii) community committee fees of US$450/day for 2 days; iii)) site monitoring forms and community logbooks @US$5/site across 2 sites; iv) field signage for 2 demonstration plots @US$50/site; v) transport of committee members to two plots @US$10/site; vi) transport of seedlings from nurseries to two plots @US$10/site; and vii) food provided to labourers @US$10/day for 60 person days. Of the total cost of this budget note, 15% contributes to the GAAP budget.
B39	PMU Procurement Officer budgeted @US$500/day for six days to support procurement of tools, materials and planting inputs for the establishment of demonstration revegetation plots in Jowhar and Afgooye. PMU technical staff budgeted @US$1,000/day for 42 person-days to: i) oversee implementation of revegetation activities in coordination with community members; ii) support the establishment of a wetland in the paleochannel north of Jowhar Town; and iii) support the establishment of additional demonstration plots and ensure project continuity. PMU Monitoring and Evaluation (M&E) Officer budgeted @US$1,000/day for 20 days to assess the outcomes of revegetation activities under Activity 2.4.2.
B40	Travel costs to i) establish demonstration revegetation plots in Jowhar and Afgooye under sub-activity 2.4.2.1; ii) establish a wetland in the paleochannel north of Jowhar under sub-activity 2.4.2.2; and iii) revisit and replicate revegetation demonstration sites establish demonstration revegetation plots in Jowhar and Afgooye under sub-activity 2.4.2.3. These costs include: i) security services budgeted @US$300/day for 2 days; ii) 2 return flights to Jowhar @US$220/return flight; iii) travel to Afgooye budgeted @US$0.15/km for 120 km; iv) accommodation @35/night for 3 person nights; and v) food @US$15/day for 10 person days. PMU costs to visit demonstration plots budgeted @US$3,546.80 (lump sum).
B41	Civil engineering firm to assess and design SUDS options, budgeted @US$500/day for 20 days. NbS specialist consultant to undertake on-the-ground monitoring and performance assessment of SUDS, budgeted @US300/day for 60 days. Urban planner to host training workshops using selected sustainable drainage — both during construction and thereafter — to demonstrate their importance, budgeted @US$300/day for 10 days.
B42	Training workshop costs under sub-activity 2.5.1.3 include: i) printing meeting materials @US$4/copy for 90 copies; ii) venue hire @US$12.5/hour for 48 hours; iii) catering for 90 participants @US$15/person; iv) committee fee of US$450/day for 6 days; v) stationery @US$6/unit for 90 units; and vi) transportation of participants to construction sites @US$10/hour for nine hours. Of the total cost of this budget note, 15% contributes to the GAAP budget.
B43	PMU technical staff to: i) supervise establishment of SUDS in each district town at exact sites selected in the urban Adaptation Management Plans, budgeted @US1,500/person day for 18 person days; and ii) assist in hosting training workshops using selected sustainable drainage — both during construction and thereafter — to demonstrate their importance, budgeted @US$1,000/person day for six person days. PMU Procurement Officer to contract construction firm, budgeted @US$500/day for three days.
B44	Construction firm to install SUDS in each district town at exact sites selected in the urban Adaptation Management Plans and conduct necessary repairs to these SUDS for the project's duration where appropriate, budgeted @US$323,110 (lump sum). Topographic survey of exact sites for technical plans of SUDs, budgeted @US$10,000 (lump sum). A two-year warranty for the SUDS will be requested and is included in the cost given above.
B45	Travel to conduct detailed technical assessment and design of SUDS options including ditches, detention basins and retention ponds in the three prioritised urban areas and host training workshops using selected sustainable drainage — both during construction and thereafter — to demonstrate their importance. These costs include i) 3 return flights to Beledweyne @US$250/return flight; ii) 3 return flights to Jowhar @US$220/return flight; iii) travel to Afgooye @US$0.15/km for 240 km; iv) accommodation @US$35/night for eight nights; v) food @US$15/day for 22 person days; and vi) a security consultant/fixer budgeted @US$300//day for two days.

	Travel costs for PMU members to visit SUDS development sites, budgeted @US$3,546.80 (lump sum).
B46	Urban planner to host one training workshop for district authorities in each district town on the collection and management of persistent/non-biodegradable solid waste, composting of organic waste and repurposing of solid waste viable for use in small-scale NbS construction, budgeted @US$300/day for five days.
B47	Costs to host training workshop, including printing of meeting materials budgeted @US$4/copy for 30 copies, catering @US$15/person for 30 persons, stationery @US$6/set for 30 sets, composting demonstration kits @100/kit for 30 kits and venue hire @12.5/hour for 24 hours (8 hours per district). Procurement of protective gear such as gloves, boots and overalls @US$300/district, in all three districts. Additionally, transport of participants to waste management sites is budgeted @US$10/hour for 3 hours. Of the total cost of this budget note, 15% contributes to the GAAP budget.
B48	Procurement of compost demonstration kits, budgeted @US$100/kit for 30 kits as well as compost, organic waste and non-biodegradable bins, budgeted @US1,000/district for all three districts.
B49	Costs for the three PMU technical staff members to i) facilitate the hosting of one training workshop for district authorities in each district town on the collection and management of persistent/non-biodegradable solid waste, composting of organic waste and repurposing of solid waste viable for use in small-scale NbS construction; and ii) conduct a demonstration of waste management and composting techniques in each town, targeted at district authorities, budgeted @US$1,000/person day for 11 person days. Additionally, costs for the PMU Procurement Officer to procure bins, composting kits and protective equipment for the waste management demonstrations, budgeted @US$500/day for three days.
B50	Travel costs for the urban planner to attend the workshop, including one return flight each to Beledweyne and Jowhar, budgeted @US$250 and @US$220, respectively, as well as travel to Afgooye @US$0.15/km for 60 km. During the trip to Afgooye, the urban planner will be accompanied by a security consultant/fixer budgeted @US$300/day for 1 days. Moreover, accommodation and food during these trips are budgeted @US$35/person night for 2 person nights and US$15/person day for six person days respectively. Additionally, travel costs for PMU staff to visit waste management demonstration sites are budgeted @US$3,546.8 in total. Travel costs for PMU members to attend demonstration of waste management and composting techniques in each town, targeted at district authorities, budgeted @US$3,546.80 (lump sum).
B51	Costs associated with facilitating community-led waste collection drives using the techniques demonstrated in Activity 2.6.1, with community committees coordinating regular collection activities and engaging the broader community. These include i) printing of 180 posters (60 per district) advertising these waste collection drives is budgeted @US$5/poster; and ii) food provided to volunteers @US$10/person for 60 persons. The waste collection drives will be led by the urban community committees, with their fees budgeted @US$450/day for six days (two days per district). Costs to conduct community visits to storm drains, as well as interventions established under Activity 2.5.1 which have been cleared of waste and those which are inundated with waste, to demonstrate how waste management reduces urban flooding, including: i) local facilitators budgeted @US$300/person day for six person days; ii) community committee fees of US$450/day for six days — two days per district (US$30/person for committees comprised of 15 persons); and iii) consultant to write report on these community visits @US$300/day for two days. Additionally, transport of participants to storm drain sites is budgeted @US$10/hour for six hours, and printing of feedback forms to evaluate outcomes of these visits @US$0.15/copy for 180 copies. Of the total cost of this budget note, 15% contributes to the GAAP budget.
B52	Procurement of compost, organic waste and non-biodegradable waste bins budgeted @US4,000/district as well as procurement of protective gear such as gloves, boots and overalls @US$900/district, in all three districts.
B53	Costs for the three PMU technical staff members to facilitate community-led waste collection drives using the techniques demonstrated in Activity 2.6.1, with community committees coordinating regular collection activities and engaging the broader community, budgeted @US$1,000/person day for five person days. Additionally, costs for the PMU Procurement Officer to procure bins, composting kits and protective equipment for the community waste collection drives, budgeted @US$500/day for three days.
B54	Translation of report on community visits to demonstration SUDS, budgeted @US$30/hour for 8 hours. Additionally, costs associated with printing and binding of the report, budgeted @US$9.5/copy for 60 copies and mailing these to ministerial stakeholders @US$5/parcel for 30 parcels.
Component 3: Improved enabling environment for investment in the replication and upscaling of adaptation NbS and hybrid solutions in Somalia	
C1	Development of research project topics to be undertaken by master's students as part of their programme (Activity 1.1.4). This will be done by a consultant budgeted @US$300/day for 1 day. In addition, the same consultant (or potentially Master students) will write a short note on lessons learned and best practices based on reports generated under Activity 3.1.2, budgeted @US$300/day for 5 days. The costs for the PMU M&E Officer to undertake annual community consultations in the target districts to capture public perceptions of the project's implementation and effectiveness are included in the project M&E costs (budget note E2).
C2	Operational requirements for conducting community consultations including printing meeting materials budgeted @US$4/copy for 300 copies, venue rental budgeted @US$12.50/hour for 144 hours, catering for participants budgeted @US$15/person for 300 persons, stationery supplies budgeted @US$6/set for 300 notebook/pen sets, and consultant fees for reporting budgeted @US$300/day for 10 days. Of the total cost of this budget note, 15% contributes to the GAAP budget.
C3	Catering expenses for key informant interviews budgeted @US$15/person for 15 persons, supporting stakeholder engagement sessions to gather insights on project implementation and effectiveness. Of the total cost of this budget note, 15% contributes to the GAAP budget.
C4	Translation services to ensure accessibility of documentation in local languages. Includes document translation services budgeted @US$30/hour for 40 hours for initial documentation and budgeted @US$30/hour for 20 hours for follow-up materials, ensuring that lessons learned and best practices are accessible to all stakeholders.
C5	Travel and security expenses for conducting annual community consultations across target districts. Includes security services budgeted @US$300/day for 5 days, return flights to Beledweyne budgeted @US$250/flight for 5 flights and Jowhar budgeted @US$220/flight for 5 flights, ground transportation to Afgooye budgeted @US$0.15/km for 360 km, accommodation for consultant and security personnel budgeted @US$35/night for 10 person nights and meals budgeted @US$15/day for 35 person days.
C6	Financial specialist to conduct a cost-benefit analysis budgeted as lump sum of US$30,000 and UNEP-DHI staff hydrologist budgeted @US$1,250/day for 75 days to model performance of provide technical analysis of the hydrological performance of implemented NbS and hybrid solutions.
C7	Peer review of NbS performance report budgeted @US$1,250/day for 35 days and translation of cost-effectiveness report budgeted @US$30/hour for 96 hours, ensuring reports are accessible in Somali and English.
C8	Printing and distribution of reports developed under Activities 3.1.1 and 3.1.2, including printing and binding services budgeted @US$9.50/copy for 180 copies. In addition, these copies will be mailed to national and district governments, with mailing budgeted @US$5/parcel for 30 parcels.
C9	IT specialist budgeted @US$300/day for 15 days for developing an online knowledge management platform to disseminate knowledge products and facilitate access to NbS and hybrid solution information.
C10	Policy specialist to undertake: i) policy review and analysis budgeted @US$300/day for 15 days; ii) gap analysis budgeted @US$300/day for 5 days; and iii) policy recommendations development budgeted @US$300/day for 10 days. In total, the policy specialist will work for 30 days. The final deliverable is a comprehensive policy gap analysis report summarising findings of all analyses, highlighting specific opportunities for NbS integration and policy reform recommendations.
C11	Documentation of policy review findings, including: i) translation services, budgeted @US$30/hour for 72 hours; and ii) printing and binding of policy documents budgeted @US$9.50/copy for 120 copies for distribution to relevant stakeholders.
C12	International flights for policy specialist to visit Mogadishu for policy assessment and meetings, budgeted at US$1,000/flight for 10 flights.
C13	Financial analysis expertise to conduct focus-group discussions and key informant interviews to identify incentive mechanisms, budgeted @US$300/day for 11 days

C14	Focus-group discussion costs, including: i) printing materials budgeted @US$4/copy for 60 copies; ii) venue rental budgeted @US$12.50/hour for 24 hours; iii) catering budgeted @US$15/person for 60 persons; and iv) stationery supplies budgeted @US$6/set for 60 notebook/pen sets. Of the total cost of this budget note, 15% contributes to the GAAP budget.
C15	Travel expenses of UNEP-DHI staff for community consultations, including: i) security services budgeted @US$300/day for 5 days; ii) return flights to Beledweyne budgeted @US$250/flight for 5 flights; iii) accommodation budgeted @US$35/night for 10 person nights; and iv) meals budgeted @US$15/day for 35 person days.
C16	Financial analysis specialist to develop incentive mechanism guidelines based on focus group discussions budgeted @US$700/day for 20 days.
C17	Documentation of incentive mechanisms including: i) translation services budgeted @US$30/hour for 72 hours; ii) printing and binding budgeted @US$9.50/copy for 120 copies; and iii) distribution costs budgeted @US$5/parcel for 30 parcels for incentive mechanism guidelines.
C18	Soil carbon specialist to develop a technical note outlining protocols for MRV of carbon sequestration from NbS interventions and to complete viability assessment of soil carbon credit scheme budgeted @US$2,350/day for 20 days. Financial specialist to develop a business case for NbS and hybrid solutions, including soil carbon crediting, and present this to Feral Government representatives at a workshop, budgeted @US$1,316.67/day for 30 days.
C19	Costs associated with the viability assessment workshop in Mogadishu, including printing of meeting materials budgeted @US$4/copy for 10 copies, catering @US$15/person for 15 persons and stationery @US$6/set for 10 sets. Of the total cost of this budget note, 15% contributes to the GAAP budget.
C20	Documentation costs of several components of the soil carbon viability assessment, including the technical note outlining protocols, economic analysis of soil carbon crediting, potential for carbon sequestration assessment, and assessment of agricultural practices. Collectively, the document development costs include: i) translation services budgeted @US$30/hour for 138 hours; ii) printing and binding budgeted @US$9.50/copy for 240 copies; and iii) mailing costs budgeted @US$5/parcel for 120 parcels.
C21	Costs for international travel by a UNEP soil carbon specialist to i) develop a technical note outlining protocols for measuring, reporting, and verifying carbon sequestration from NbS interventions, including governance structures and legal requirements for scheme implementation; ii) conduct economic analysis of soil carbon crediting in Somalia, including cost-benefit assessment and financial sustainability; and iii) conduct a desk study to assess the technical potential for carbon sequestration based on environmental and geospatial data, budgeted @US10,000 (lump sum). Additional travel costs to conduct assessments on agricultural practices in the riverine zone in Beledweyne, Jowhar and Afgooye, including one return flight each to Beledweyne and Jowhar @US$250/return flight and @US$220/return flight, as well as costs for two day-long trips to Afgooye @US$0.15/km for 120 km total. During the Afgooye visits, a local security consultant/fixer will accompany the soil carbon specialist @US$300/day for two days. Accommodation and food are budgeted @US$35/person night for four person nights and US$15/person day for 10 person days, respectively. Moreover, international travel costs for the soil carbon specialist to present a complete viability assessment and business case to Federal Government representatives in a workshop based on the outputs of Sub-activities 3.2.3.1–3.2.3.3 are budgeted @US$5,000 (lump sum).
C22	Costs for policy specialist to: i) develop comprehensive policy reform recommendations integrating findings from Activities 3.2.1, 3.2.2, and 3.2.3, budgeted @US$500/day for 15 days; ii) organise and host policy reform presentation workshop in Mogadishu for government stakeholders, budgeted @US$500/day for three days; and iii) document workshop discussions, stakeholder feedback, and government commitments in a workshop report, budgeted @US$300/day for five days.
C23	Policy reform presentation costs include: i) printing of meeting materials @US$4/copy for 20 copies; ii) catering for 20 participants @US$30/person; and iv) stationery distributed @US$6/set for 20 sets. Of the total cost of this budget note, 15% contributes to the GAAP budget.
C24	Printing and binding of documents, including policy reform recommendations package and workshop report for the policy reform presentation workshop in Mogadishu, budgeted @US$9.5/copy for a combined 40 copies. Mailing these documents to federal ministerial stakeholders, budgeted @US$5/parcel for 20 parcels.
C25	Costs for an education specialist to i) design and produce comprehensive educational materials including training manuals, fact sheets and visual aids in Somali, featuring local case studies and examples of successful NbS implementation (20 days); and ii) develop multi-channel awareness campaign content including SMS messaging for different stakeholder groups, radio programme scripts with expert interviews and community testimonials, and print materials (posters, flyers, banners) for public distribution (30 days), budgeted @US$300/day for a combined 50 days. Costs for an NbS specialist consultant to i) assist in designing comprehensive educational materials including training manuals, fact sheets and visual aids in Somali, featuring local case studies and examples of successful NbS implementation (20 days); ii) support recurring radio programmes on local and national stations with live call-in shows for communities to receive NbS-related information and contribute their experiences of NbS (20 days); and iii) participate in community awareness events in each target district featuring educational material distribution and interactive discussions with community members across all demographic groups, with special events for women and youth (30 days). These activities are budgeted @US$300 for a combined 70 days. Costs for a social media manager to disseminate educational materials and advertise recurring educational radio shows on the project social media pages, budgeted @US$150/day for 60 days across five years of implementation.
C26	Costs for development of awareness materials, including: i) interview fees @US$50/hour for 148 hours; ii) graphic design and layout services @US$120/day for 20 days; iii) translation of documents @US$30/hour for 120 hours; iv) printing of materials @US$9.5/copy for 300 copies; and v) mailing copies of awareness materials @US$5/parcel for 300 parcels. Community awareness event costs include: i) printing of communication materials @US$4/copy for 60 copies; ii) printing of meeting materials @US$4/copy for 60 copies; iii) venue hire @12.5/hour for 144 hours; iv) catering for 60 participants @US$15/person; and v) pens and notebooks distributed @US$6/unit for 60 units. Of the total cost of this budget note, 15% contributes to the GAAP budget.
C27	PMU ESS & Gender Officer costs to: i) assist in designing comprehensive educational materials including training manuals, fact sheets and visual aids in Somali, featuring local case studies and examples of successful NbS implementation (10 days); ii) assist in developing multi-channel awareness campaign content including SMS messaging for different stakeholder groups, radio programme scripts with expert interviews and community testimonials, and print materials (posters, flyers, banners) for public distribution (10 days); iii) support recurring radio programmes on local and national stations with live call-in shows for communities to receive NbS-related information and contribute their experiences of NbS (10 days); and iv) participate in community awareness events in each target district featuring educational material distribution and interactive discussions with community members across all demographic groups, with special events for women and youth (30 days). These activities are budgeted @US$500 for a combined 60 days.
C28	Translation of educational materials including training manuals, fact sheets and visual aids in Somali, featuring local case studies and examples of successful NbS implementation, budgeted @US$30/hour for 160 hours, as well as graphic design and layout services to develop these materials @US$120/day for five days. Printing and, where appropriate, binding costs for these revised plans, budgeted @US$9.5/copy for 60 copies and mailing these to ministerial stakeholders budgeted @US$5/parcel for 30 parcels.
C29	Broadcast costs for a combined 48 hours (one hour-long broadcasts twice per month across two years) of educational radio programmes on local and national stations on NbS and hybrid solutions, featuring expert interviews and live call-in shows, budgeted @US$125/hour. Dissemination of 500,000 short message system (SMS) messages notifying subscribers in the target districts of upcoming radio shows, consultations, waste collective drives and other project-related events, budgeted @US$0.01 per message.
C30	Travel costs for an NbS specialist consultant and the PMU ESS & Gender Officer to organise annual community awareness events in each target district featuring educational material distribution and interactive discussions with community members across all demographic groups, with special events for women and youth, including twelve return flights each to Beledweyne and Jowhar, budgeted @US$250 and @US$220, respectively, as well as travel to Afgooye @US$0.15/km for a combined 360 km. During the trip to Afgooye, the NbS specialist consultant and ESS & Gender Officer will be accompanied by a security consultant/fixer budgeted @US$300/day

	for six days. Moreover, accommodation and food during these trips are budgeted @US$35/person night for 24 person nights and US$15/person day for 66 person days respectively.
Component 4: M&E and Knowledge Management	
D1	Travel costs for regular field missions by the Project Manager , ESS officer and M&E Officer to the three target districts required to implement the stakeholder engagement plan, gender action plan, monitoring and evaluation plan and knowledge management plan @ US$ 13,710/year inclusive of flights, car rental, DSA. Includes transport for ESS focal points in the target districts. and community meeting costs for stakeholder engagement.
D2	Costs to host a training workshop on the revised Stakeholder Engagement Plan, Gender Action Plan, Environmental and Social Management Plan, Monitoring and Evaluation Plan and Knowledge Management Plan to capacitate PMU staff to action these plans, including printing of meeting materials budgeted @US$4/copy for 10 copies, catering @US$15/person for 10 persons and stationery @US$6/person for 10 persons. Of the total cost of this budget note, 15% contributes to the GAAP budget.
D3	Costs for inception workshops to Present the stakeholder engagement plan, gender action plan, Environmental and Social Management Plan, monitoring and evaluation plan and knowledge management plan to national, federal state and district ministerial representatives, including women-only groups. These costs include printing of meeting materials budgeted @US$4/copy for 60 copies, catering @US$15/person for 60 persons and stationery @US$6/set for 60 sets. An additional US$4,531 (lump sum) is allocated to miscellaneous inception workshop costs. Of the total cost of this budget note, 15% contributes to the GAAP budget.
D4	PMU Project Manager to i) present the stakeholder engagement plan, gender action plan, Environmental and Social Management Plan, monitoring and evaluation plan and knowledge management plan to national, federal state and district ministerial representatives at a project inception workshop, budgeted @US$500/day for 15 days; ii) conduct follow-up consultations online to Incorporate recommendations for validation workshops into all plans presented under Activity 3.4.1.1 budgeted @US$5,476; and iii) host a training workshop on the revised Stakeholder Engagement Plan, Gender Action Plan, Environmental and Social Management Plan, Monitoring and Evaluation Plan and Knowledge Management Plan to capacitate PMU staff to action these plans, budgeted @US$500/day for five days. Costs for the PMU ESS & Gender Officer to i) present the stakeholder engagement and gender action plan to women-only groups of national, federal state and district ministerial representatives; ii) conduct follow-up consultations online; iii) host a training workshop on the revised Stakeholder Engagement Plan, Gender Action Plan, Environmental and Social Management Plan, Monitoring and Evaluation Plan and Knowledge Management Plan to capacitate PMU staff to action these plans; and iv) implement the stakeholder engagement plan, gender action plan, monitoring and evaluation plan and knowledge management plan, budgeted @US$500/day for 39 days.
D5	Translation of documents, including the incorporation of recommendations from project inception workshops into the stakeholder engagement plan, gender action plan, Environmental and Social Management Plan, monitoring and evaluation plan and knowledge management plan, budgeted @US$30/hour for 40 hours. Printing and, where appropriate, binding costs for these revised plans, budgeted @US$9.5/copy for 240 copies and mailing these @US$5/parcel for 120 parcels.
D6	Travel costs for state and district ministerial representatives to attend the project inception workshop in Mogadishu, including 50 return flights (20 state and 30 district representatives) budgeted @US$235/return flight, accommodation for 50 person nights @US$50/person night and food for 100 person days @US$30/person day.
D7	Consultancy services for capacity development and support the M&E officer to develop and implement data gathering and monitoring plans and conduct results measurement. Includes @US$40,000 in consultancy costs, costs to facilitate consultations during these exercises, including printing of meeting materials budgeted @US$4/copy for 60 copies, catering @US$15/person for 60 persons, stationery @US$6/set for 60 sets, and venue hire @US$12.5/hour for 48 hours (8 hours per district per RVE). This does not include consultancy services for baseline study, mid-term evaluation (MTE) and terminal evaluation (TE).
D8	Costs for PMU M&E Officer to produce Annual Progress Reports for each year of project implementation, according to the M&E Plan, budgeted @US$1,000/day for 30 days.
D9	Translation of documents, including Annual Progress Reports for each year of project implementation, according to the M&E Plan, budgeted @US$30/hour for 160 hours. Printing and, where appropriate, binding of these Annual Progress Reports, budgeted @US$9.5/copy for 10 copies.
Project execution costs	
E1	Partial cost of the Project Manager salary, budgeted at US$5,000/month for 60 month (5 years) for a total of US$300,000. The difference is costed under the activity budget.
E2	M&E Officer salary, budgeted at US$1,500/month for 48 months (4 years; Y1, Y2, Y3 and Y4). The full M&E Officer cost is captured under the activity budget.
E3	Procurement Officer salary, budgeted at US$1,250/month for 30 months (2.5 years; Y1, Y2 and first six months of Y3). The full Procurement Officer salary is captured under the activity budget.
E4	Finance Officer salary, budgeted at US$1,250/month for 60 months (5 years).
E5	ESS & Gender Officer salary, budgeted at US$1,000/month for 60 months (5 years). The full ESS & Gender Officer cost is captured under the activity budget.
E6	Salaries of three Technical Staff, budgeted at US$1,000/month for 60 months (5 years) per person. The full Technical Staff cost is captured under the activity budget.
E7	Office rental fees, budgeted at US$1,000/month for 60 months (5 years).
E8	PMU travel budget for implementation site visits, budgeted at US$4,039.60/year for 5 years, totalling US$20,198. The difference is captured under the activity budget.
E9	Annual cost of Project Steering Committee (PSC) meetings, budgeted at US$1,000/year for 5 years.
E10	Sundry costs for office equipment for PMU staff, budgeted at US$1,600/year for 5 years.
E11	Annual audits of PMC spending, budgeted at US$2,000/year for 5 years.

Annex 3: Stakeholder Engagement Plan

List of Acronyms	
ACF	Actions Against Hunger
AF	Adaptation Fund
AfDB	African Development Bank
BRA	Banadir Regional Administration
BRCiS	Building Resilient Communities in Somalia
CBO	Community-based organisation
CfW	Cash-for-Work
CSO	Civil society organisation
DRR	Disaster risk reduction
EARNSS	Enhancing Adaptation and Resilience through Nature-based Solutions in Somalia
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMF	Environmental and Social Management Framework
ESSF	Environmental, Social and Sustainability Framework (UNEP)
ESS	Environmental and Social Standards (UNEP)
FAO	Food and Agriculture organisation
FGD	Focus group discussion
FPIC	Free, Prior and Informed Consent
GRM	Grievance Redress Mechanism
IDP	Internally Displaced Person
IFAD	International Fund for Agricultural Development
IC	International consultant
ICRC	International Committee of the Red Cross
IOM	International Organisation for Migration
IPPF	Indigenous Peoples Planning Framework
KII	Key informant interview
KSRelief	King Salman Humanitarian Aid and Relief Centre
M&E	Monitoring and Evaluation
MoAI	Ministry of Agriculture and Irrigation
MoECC	Ministry of Environment and Climate Change
MoEWR	Ministry of Energy and Water Resources
MoLFR	Ministry of Livestock, Forestry and Rangelands
MoPIED	Ministry of Planning, Investment and Economic Development
NAPA	National Adaptation Programme of Action
NbS	Nature-based Solutions
NC	National consultant
NGO	Non-governmental organisation
OIC	Organisation for Islamic Cooperation
PMU	Project Management Unit
Sadar	Sadar Development and Resilience Institute
SEP	Stakeholder Engagement Plan
SoDMA	Somali Disaster Management Agency
SSWC	Save Somali Women and Children
SWALIM	Somalia Water and Land Information Management
SWSC	Somali Women's Studies Center
SYDF	Somali Youth Development Foundation
ToC	Theory of Change
UNDP	United Nations Development Programme
UNDRR	United Nations Office for DRR
UNEP	United Nations Environment Programme
UNEP-DHI	UNEP-Danish Hydrological Institute
UNICEF	United Nations International Children's Fund
VSLA	Village Savings and Loans Association
WASDA	Wajir South Development Association
WB	World Bank
WFP	Wolrd Food Programme

Part A: Strategic context and stakeholder landscape

Background and purpose of the Stakeholder Engagement Plan

1. This Stakeholder Engagement Plan (SEP) has been developed for the project Enhancing Adaptation and Resilience through Nature-based Solutions in Somalia (EARNSS). The SEP is designed to support inclusive and participatory implementation by providing both a record of stakeholder engagement conducted during project preparation and a clear framework for continued engagement throughout execution. The SEP is structured in two parts:

   - Part A sets out the strategic context and stakeholder landscape for the project. It documents the institutional environment, outlines key stakeholder groups, and summarises engagement activities carried out during the design phase, including national-level consultations and local-level dialogues in Beledweyne. It also identifies key social inclusion priorities relevant to the project's operational environment.
   - Part B presents the operational plan for ongoing stakeholder engagement. It outlines planned activities, methods of consultation, information disclosure strategies, capacity-building components, and grievance redress mechanisms. This part of the SEP is intended as a practical tool for use by the implementing entity and partners during execution, with clear responsibilities and adaptive mechanisms.

2. The SEP has been prepared in alignment with the United Nations Environment Programme's (UNEP) Environmental and Social Safeguards Framework (ESSF) and reflects relevant principles of the Adaptation Fund (AF), including stakeholder responsiveness, transparency, gender equity, and the inclusion of vulnerable groups.

Project overview and geographic scope

3. The EARNSS project aims to build the climate resilience of vulnerable communities in flood- and drought-prone areas of southern and central Somalia. Implemented by UNEP and executed by the Sadar Development and Resilience Institute (Sadar) in collaboration with Federal Member State authorities and local partners, the project targets three districts — Beledweyne, Jowhar, and Afgooye — within Hirshabelle and South West States. Activities are structured to remain flexible and adaptive in response to evolving access, security, and institutional conditions. The project is organised around four interlinked components.

4. **Component 1: Capacity building for the replication and upscaling of innovative Nature-based Solutions (NbS) and hybrid technologies in Somalia** focuses on strengthening institutional, technical, and community capacity to plan, design and implement effective adaptation interventions. This includes participatory development of rural and urban Adaptation Management Plans based on technical assessments and cost-effectiveness analysis.

5. **Component 2: Protection of productive assets and livelihoods by innovative and proven adaptation NbS and hybrid technologies** delivers concrete rural and urban adaptation measures. These include small-scale water infrastructure such as sand dams and weirs, rangeland restoration through silvopastoral techniques, urban drainage and rainwater harvesting systems, and revegetation of flood-prone areas — all designed to reduce climate-related risks and safeguard livelihoods.

6. **Component 3: Improved enabling environment for investment in the replication and upscaling of adaptation NbS and hybrid solutions in Somalia** strengthens institutional and policy frameworks at national and sub-national levels. It includes policy reviews, development of incentive mechanisms, and the preparation of a soil carbon credit viability assessment to encourage investment in ecosystem-based adaptation.

7. **Component 4: M&E and Knowledge Management** supports the development of cross-cutting implementation strategies, as well as structured learning processes. This includes codifying lessons, assessing the performance and cost-effectiveness of interventions, and disseminating knowledge products to support future replication and policy uptake.

8. The EARNSS project is being implemented across three priority catchment areas in central Somalia: Beledweyne, Jowhar, and Afgooye. These locations were selected based on climate vulnerability, exposure to recurrent flooding and drought, and the opportunity to strengthen integrated water resource management and community resilience through nature-based solutions. Engagements to date have focused on national-level consultations in Mogadishu and field-level consultations in Beledweyne, Jowhar and Afgooye.

Beledweyne

9. Beledweyne, located in the Hiran region of Hirshabelle State, is highly vulnerable to both seasonal flooding and prolonged droughts. The Shabelle River, which runs through the district, plays a critical role in local livelihoods, particularly for agropastoralist communities. Recurrent climate shocks have contributed to displacement, loss of livelihoods, and food insecurity. Stakeholder consultations conducted in June 2025 with both community members and district-level authorities highlighted key priorities, including early warning systems, sustainable land management, flood protection measures, and strengthened water governance.

10. The consultations also surfaced the importance of inclusive planning approaches that reflect the needs of women, youth, and minority clans, many of whom face specific barriers to participation in formal decision-making processes. The engagement in

Beledweyne helped validate the project's focus on nature-based solutions and catchment-level planning, while also reinforcing the need for practical, community-informed investments.

Jowhar

11. Jowhar, located in Middle Shabelle region and serving as the regional capital of Hirshabelle State, is a key agricultural zone but faces escalating climate and displacement pressures. The district lies within Somalia's largest irrigable area along the Shabelle River and supports both rain-fed and irrigated agricultural systems. However, three major floods between 2020 and 2024 have severely damaged irrigation infrastructure, displaced communities, and degraded productive land. The peri-urban internally displaced persons (IDP) settlement of Ciil-Tire, on the outskirts of Jowhar, illustrates these dynamics — hosting families displaced by recurrent droughts, floods, and inter-clan conflict. Residents face insecure tenure, lack of services, and increasing exposure to flood hazards.

12. Consultations held in May 2025 with IDPs, farmers, and minority clan representatives highlighted an urgent need for interventions that combine immediate relief with long-term resilience. Key community priorities include improved water governance, climate-resilient agriculture, flood control infrastructure, and inclusive livelihood support. The discussions underscored the limitations of previous development efforts that concentrated on irrigated zones while neglecting rain-fed and displaced populations. The feedback reinforced the importance of targeting underserved areas and integrating displaced communities into adaptation planning. Women and youth called for targeted skills development and support for small-scale enterprises, while traditional leaders stressed the role of customary governance and land access in shaping outcomes. Across all groups, there was a strong endorsement of nature-based solutions and community-led water management approaches.

Afgooye

13. Afgooye, situated in the Lower Shabelle region, is a peri-urban district with a high concentration of IDPs and vulnerable agropastoralist populations. The area has been repeatedly affected by prolonged droughts and sudden flash floods, which have undermined food production, disrupted services, and forced large-scale displacement. Informal settlements, often located in flood-prone areas near seasonal watercourses (*wadis*), lack basic infrastructure and are particularly exposed to climate shocks. Livelihoods have become increasingly precarious, with many households relying on casual labour, small informal businesses, or humanitarian assistance, while farming and livestock activities are severely constrained by degraded rangelands and unreliable water sources.

14. Consultations conducted in June 2025 revealed strong community demand for investments that can stabilise rural livelihoods and reduce climate-related vulnerabilities. Participants stressed the potential of water harvesting structures — such as sand dams and gravity-fed systems — to transform the use of seasonal wadis for irrigation and livestock watering. Women, youth, and minority groups highlighted barriers to land access, participation, and financial independence, calling for inclusive governance and targeted livelihood programmes. Community members also emphasised the need for conflict-sensitive planning, noting that resource scarcity and displacement have heightened social tensions. Across the discussions, there was broad recognition that sustainable water infrastructure and nature-based flood mitigation are essential to restoring food security and enabling voluntary returns to rural areas.

Relevant laws, policies and strategies

15. The EARNSS project operates within a complex but evolving legal and institutional landscape in Somalia. While legislative and policy frameworks remain under development in several sectors, there are foundational laws that provide a basis for environmental protection, decentralised governance, disaster risk management, and the rights of citizens to participate in public decision-making. This section outlines key national laws that establish legal obligations or enabling conditions for stakeholder engagement, particularly in relation to environmental assessments, local governance, and inclusive participation. These frameworks inform both the structure and operational focus of the project's stakeholder engagement activities.

Table 1. National laws of relevance to stakeholder engagement in the context of the project

Law	Year	Stakeholder Engagement Relevance
Provisional Constitution of Somalia	2012	Article 11 guarantees equality and non-discrimination; Article 25 affirms the right to a clean and healthy environment; Article 55(5) enables laws for the inclusion of marginalised groups. These provisions form a constitutional basis for inclusive public participation and stakeholder engagement in environmental decision-making.
Law on Local Government (Decentralisation Law)	2019	Establishes the role of district councils in participatory development planning. While not gender-specific, it reinforces inclusive governance at the local level. Supports stakeholder engagement through devolved planning structures and district council processes.
Disaster Management Law	2016	Mandates the Somali Disaster Management Agency (SoDMA) to coordinate community preparedness and early warning systems. Implies engagement of local populations in disaster risk communication and response planning, supporting inclusive communication practices.
Environmental Protection and Management Act	2024	Establishes legal requirements for public participation in environmental governance. Requires community consultation during ESIA processes and recognises stakeholder input as fundamental to sustainable development. Strengthens obligations for meaningful participation throughout the project cycle.
Environmental and Social Impact Assessment (ESIA) Regulations	2024	Provides procedural rules for public consultation, including mandatory publication of notices, public hearings during scoping and assessment phases, and integration of community feedback into final ESIA reports. Also establishes grievance procedures for affected persons. These provisions apply directly to all projects undergoing assessment.

16. In addition to binding legislation, Somalia's national policies and strategies reflect a growing commitment to inclusive planning and stakeholder participation. The Climate Change Policy (2020) promotes local engagement in adaptation planning, while the Gender Policy (2016) emphasises the inclusion of women in decision-making. Similarly, the Disaster Risk Reduction (DRR) Strategy and National Adaptation Programme of Action (NAPA) highlight community participation and awareness as key to resilience. These and other relevant frameworks are summarised below, with a focus on their implications for stakeholder engagement under the project.

Table 2. National policies of relevance to stakeholder engagement

Policy/Strategy	Year	Relevance to Stakeholder Engagement
National Climate Change Policy	2020	Encourages multi-stakeholder participation in adaptation planning and climate governance. Recognises the role of local communities, civil society, and vulnerable groups in building resilience.
National Gender Policy	2016	Highlights the need for gender-responsive planning and inclusion of women in decision-making across sectors. Emphasises stakeholder consultation in policy development, service delivery, and climate action.
National Adaptation Programme of Action (NAPA)	2013	Identifies priority adaptation actions and stresses community-level involvement in project design and implementation. Provides an early precedent for participatory planning in climate interventions.
National Disaster Risk Reduction Strategy (SoDMA)	2018	Promotes community awareness, public participation, and stakeholder collaboration in disaster preparedness and early warning systems. Emphasises the importance of local engagement in building resilience.
National Development Plan (NDP-9)	2020–2024	The national planning framework prioritises inclusive governance, decentralisation, and community-driven development. Calls for stakeholder engagement across sectors, particularly in environmental and water management.

Stakeholder analysis

17. In order for the project to achieve its intended outcomes, it is essential to ensure that the interests and needs of stakeholders—particularly those at the local level—are effectively understood and reflected. Stakeholder analysis was conducted to guide engagement strategies during project preparation and to lay the foundation for inclusive participation in implementation. The analysis involved a two-step process:

- Identification of stakeholders: A desktop review was conducted to identify stakeholders with mandates, interests, or vulnerabilities linked to climate resilience, natural resource management, and rural livelihoods in Beledweyne, Jowhar, and Afgooye. This included government institutions, civil society groups, development partners, and community-level actors. Sources included national strategies, planning documents, project assessments, and stakeholder inputs from prior
- fieldwork and coordination meetings.
- Preliminary assessment of interest and influence: Consultations and key informant interviews in Mogadishu, Beledweyne, Jowhar and Afgooye provided initial insights into stakeholder priorities, levels of engagement, and willingness to participate. This allowed for a provisional assessment of influence and interest, to be updated once documentation from Jowhar and Afgooye is available.

Stakeholders were grouped into the following categories:
i) International Organisations and Development Partners;
ii) National Government Institutions and Executing Entities;
iii) State and Regional Authorities;
iv) District Authorities and Local Governments;
v) Civil Society and Non-Governmental Organisations;
vi) Community-Based Organisations and Local Associations;
vii) Women's Groups; and
viii) Marginalised and Vulnerable Groups.

Key project stakeholders

18. The stakeholders identified through the analysis were further examined in relation to their relevance for the design and implementation of the project. The table below presents institutions and groups that were engaged during the project's preparatory phase, or that are expected to play a significant role in implementation. Their inclusion reflects both their institutional mandates and the insights gathered through consultations conducted in Mogadishu, Beledweyne, Jowhar, and Afgooye.

Table 3. Key project stakeholder groups

Stakeholder	Type/Category	Level	Role/Relevance to Project
Sadar Development and Resilience Institute	National Entity/Implementing Partner	National/Subnational	Coordinating and executing entity; leads stakeholder engagement and local implementation support.
Ministry of Environment	National Government Institution	National	Policy oversight for climate and environment; potential

and Climate Change (MoECC)			collaborator for institutional coordination.
Ministry of Energy and Water Resources (MoEWR)	National Government Institution	National	Responsible for water resource management and infrastructure; may advise on technical aspects.
Hirshabelle State Government	Regional Authority	State/Regional	Political and administrative oversight for Beledweyne and Jowhar; facilitates access to district institutions.
Banadir Regional Administration	Regional Authority	Regional	Oversees Afgooye district; coordinates district-level authorities.
Beledweyne, Jowhar, and Afgooye District Administrations	Local Government	Local	Key partners for local engagement, access, coordination, and support to community-level implementation.
Somali Youth Development Foundation (SYDF), Peace and Human Rights Network, others	Civil Society Organisations	National/Local	Participated in design-phase consultations; active in rights-based and environmental advocacy.
Water user groups, local elders' committees, flood committees	Community-Based Organisations	Local	Identified in Beledweyne consultations; expected to participate in catchment management and early warning systems.
Women-led community-based porganisations (CBOs) (unnamed in reports)	Women's Groups	Local	Women's participation in consultations prioritised; further identification required in Afgooye and Jowhar.
Pastoralist groups, IDPs, informal settlers	Vulnerable Groups	Local	Particularly exposed to climate risk; require tailored outreach and inclusion in planning and benefits.
UNDP, FAO, IOM, UNICEF	International Partners	National/Regional	Not directly engaged in the project but active in related fields; potential coordination partners.

Stakeholder consultations during the development of the Concept Note

19. During the development of the AF project proposal, consultations were conducted in two stages under the leadership of Sadar and in partnership with UNEP. The first stage, culminating in a draft Concept Note submitted to the AF in September 2021, involved broad stakeholder engagement at federal, state, local government, and community levels. Workshops were conducted in Mogadishu and Jowhar, engaging the Directorate of Environment, MoEWR, the Ministry of Foreign Affairs, Ministry of Humanitarian Affairs and Ministry of Agriculture. At the government and civil society group consultations, the gender participation distribution was approximately 25% women and 75% men.

20. Community consultations were held from 27 to 29 July 2021 in Jowhar, involving local authorities, community members, women, youth and indigenous groups. These consultations included training sessions to formulate local resilience action plans. These meetings were scheduled at appropriate times to enable both women and men to attend, resulting in a participation distribution of 35% women and 65% men. Community members emphasised the necessity of building capacity to refine local resilience plans and the requirement for financial resources to implement interventions to build adaptive capacity for climate change impacts. Further consultations involved international organisations and development partners such as the World Bank (WB), International Fund for Agricultural Development (IFAD), World Food Programme (WFP), Food and Agriculture Organisation (FAO), UNEP, United Nations Office for Disaster Risk Reduction (UNDRR), Organisation of Islamic Cooperation (OIC), King Salman Humanitarian Aid and Relief Centre (KSRelief), African Development Bank (AfDB) and Intergovernmental Authority on Development (IGAD).

21. The gender distribution for these consultations was 50% women and 50% men. Additionally, consultations were held with international non-governmental organisations (NGOs), including the Somalia Resilience Programme (SomRep) consortium and the Building Resilient Communities in Somalia (BRCiS) consortium. National and local NGOs, such as Save Somali Women and Children (SSWC), Wajir South Development Association (WASDA), WARDI Relief and Development Initiative and Somali Women Studies Centre (SWSC), were also engaged.

22. The second stage of consultations commenced in July 2023 to update the baseline scenario and gather new information for the concept. This stage involved discussions with the Federal and State MoECC representatives, UNEP-DHI, BRCiS, UN Habitat and Somalia Water and Land Information Management (SWALIM). These consultations provided a detailed understanding of the impacts of climate change hazards on livelihoods, current policies and incentives for the uptake of NbS measures in adaptation and the challenges and opportunities associated with implementing NbS in Somalia.

23. The primary challenges emphasised during the consultations included: i) increased frequency and incidence of droughts and floods; ii) inadequate understanding and capacity among communities to handle climate hazards; and iii) misconceptions about NbS and insufficient evidence regarding their effectiveness. These concerns have been integrated into the design of the proposed project.

Technical approach to the consultations during project development

24. A series of stakeholder consultations were held between 5 May and 25 June 2025 to inform design and implementation of the proposed project[1]. The project will implement NbS and hybrid solutions to mitigate the impacts of droughts and floods in the Shabelle River Basin. These stakeholder consultations were carried out by a combination of International Consultants (ICs) from C4 EcoSolutions (Pty) Ltd. and National Consultants (NCs) from based in Somalia. The design of these consultations was based on a series of earlier consultations carried out during the development of the project's Concept Note[2].

25. To inform the development of the AF Funding Proposal, an Inception Workshop was held on 5 May 2025 in Mogadishu, Somalia, to present the proposed project to government stakeholders, obtain buy-in from necessary ministries, identify climate change adaptation priorities and gather data to inform design of interventions. Designed to facilitate meaningful stakeholder engagement, the consultations drew on a preliminary Theory of Change (ToC), outlining the four outcomes below.

- Strengthened institutional capacity to use innovative NbS/hybrid solutions to reduce flood and drought risks
- Enhanced resilience of vulnerable rural and urban populations to droughts and floods through the adoption of innovative adaptation practices, tools and technologies
- Enhanced policies, incentives and guidelines to promote the use of proven innovative NbS measures and soil carbon trading.
- Evidence generated to promote the replication and upscaling of innovative NbS and hybrid solutions to enhance climate resilience.

26. The Inception Workshop was followed by Key Informant Interviews (KIIs), held from 6 to 7 May. These consultations were conducted to:
    i) assess the viability of proposed adaptation interventions;
    ii) inform selection of sites and priority communities for further consultations;
    iii) identify potential implementation partners; and
    iv) determine best practices and lessons learned on the implementation of interventions in the context of the Shabelle River Basin — with a particular focus on NbS — to incorporate into project design.

27. Concurrent with these KIIs, a team of NCs visited district government representatives and members of vulnerable communities at the sites identified during the Inception Workshop for potential project implementation. The objectives of these district and community consultations were to:
    i) inform site selection, prioritisation of sites for interventions and gain an understanding of the site-specific context;
    ii) promote awareness of the proposed project among communities and obtain local buy-in;
    iii) identify potential CBOs or other existing organisations to facilitate the formation of community committees; and
    iv) obtain information to inform the assessment of potential environmental and social impacts, and to inform the design of appropriate environmental and social safeguards.

Specific objectives of the gender consultation process

28. Where possible, consultations used a combination of mixed-gender and women-only groups during district and community consultations. Women were consulted separately to:
    i) ensure that women were given adequate opportunity to voice their opinions;
    ii) determine gender-specific responsibilities and challenges within the community;
    iii) inform the potential roles of women in project implementation;
    iv) validate the potential benefits of NbS and hybrid solutions specific to women; and
    v) identify potential female committee members.

Consulted stakeholders

29. To obtain a variety of perspectives, stakeholders from national and local government, international development agencies and community representatives were consulted (Tables 4–5). To ensure that project interventions will equitably benefit the different stakeholder groups in the region, the participation of marginalised and vulnerable groups was encouraged. These included women, youth, the elderly, persons with disabilities, IDPs and indigenous peoples. Gender and age were recorded to enable the disaggregation of expected project benefits for women and youth.

[1] For a full report on all stakeholder engagement during development of the proposed project, refer to Additional Annex A: Stakeholder Consultation Report.
[2] UNEP. 2024. Enhancing Adaptation and Resilience through Nature-based Solutions (EARNSS) in Somalia. https://www.adaptation-fund.org/wp-content/uploads/2024/08/EARNSS-in-Somalia-CN-for-AF-innovation_window_enhanced_revised_trk.pdf. Accessed on: 2 June 2025.

Table 4. Gender distribution and types of participants consulted

Categories of participants	Number of participants	Women (%)	Men (%)
Community Committee members, elder and other local leaders	14	14	86
National, state, district and municipal authorities	32	22	78
Women and youth group members	14	79	21
Farmers and agropastoralists	17	47	53
Private sector/businesspeople	5	0	100
Development organisations and non-governmental organisations (NGOs)	19	10	90
Other	40	50	50
Total	141	35	65

Table 5. List of participants consulted during project design phase

Participants in Inception Workshop			
Name	**Sex**	**Role**	**Institution**
Ismail Aden	Male	Managing Director	DevReg Consulting
Yussuf Hassan	Male	Technical Advisor	DevReg Consulting
Nuzaiba Abdullahi Ali	Female	Gender Advisor	Ministry of Youth and Sports
Abdullah Ali Abdi	Male	Director General	Ministry of Agriculture and Irrigation, Hirshabelle State (MOAI-HSS)
Abdulkadir Nur Cujub	Male	Director General	MoECC
Abdirizak Mursal Mohamed	Male	Advisor	MoECC
Faiza Ali Yusuf	Female	Director	MoECC
Ibrahim Mohamed Ishak	Male	Coordinator	MoECC
Aden Abdullah Isack	Male	Director General	MoECC South West State
Dini Abdinar Mohamed	Male	Minister	MoECC South West State
Ali Mohamed Ibrahim	Male	Director General	MoEWR
Najib Ahmed Ali	Male	Technical Advisor	MoEWR
Ahmed Hassan	Male	Director	MoEWR Department of Hydrometeorology
Ismail Khalif Mohamud	Male	Integrated Water Resources Manager	Sadar
Ibrahim Moualim Ali	Male	Environmental and Climate Change Specialist	Sadar
Adow Sheikh Hussein	Male	—	Sadar
Ahmed Yusuf Ahmed	Male	Director	Somali Climate Action Platform (SCAP)
Aden Abdi Yussuf	Male	Manager	Secure Environment and Education Development (SEEDO)
Mohamed Yasin Abdi	Male	—	SomRep
Abdifatah Osman	Male	Head of Fund Development & Communication	SOS Children's Village (SOSCV)
Abdikadir Dakane	Male	Director	SOSCV
Christophe Hodder	Male	Advisor	UNEP

Participants in Key Informant Interviews					
Date	**Location**	**Name**	**Sex**	**Occupation**	**Institution**
6 May 2025	Online	Andrew Lanyon	Male	Resilience & Social Protection Coordinator	FAO
6 May 2025	Online	Paolo Paron	Male	Senior Water and Land Advisor	FAO
6–7 May 2025	Online & FAO offices, Thorn Tree Lodge, Mogadishu, Somalia	Kunow Abdi	Male	National Livestock Sector Coordinator	FAO
6–7 May 2025	Online & FAO offices, Thorn Tree Lodge, Mogadishu, Somalia	Abdisamad Hassan Hussein	Male	Animal Production Officer	FAO
6 May 2025	Online & FAO offices, Thorn Tree Lodge, Mogadishu, Somalia	Ugo Leonardi	Male	Technical Advisor	SWALIM

6 May 2025	Chelsea Village, Mogadishu, Somalia	Ahmed Mahamed Hassan	Male	Director of Hydrometeorology Department	MoEWR
7 May 2025	Chelsea Village, Mogadishu, Somalia	Abdulah Kullow Ghebi	Male	Project Manager	FCDO
9 May 2025	Online	Arrliya Sugal	Female	Project Manager	Berghoff Foundation
12 May 2025	Online	Derek Makokha	Male	Agroecology and Regenerative Agriculture Specialist	WFP
12 May 2025	Online	Andre Epstein	Male	Programme Officer	IOM
20 May 2025	Online	Teodora Traljic	Female	Forging a Greener Peace Project Officer	IOM
22 May 2025	Online	Abdulkareem Jama	Male	Executive Vice President and Provost	City University of Mogadishu
22 May 2025	Online	Yasin Barqadle	Male	Senior Vice President	City University of Mogadishu
22 May 2025	Online	Mohamed Muhudin Ali	Male	Director of Centre for Climate Adaptation and Environmental Peacebuilding	City University of Mogadishu
22 May 2025	Online	Warren Brush	Male	Consultant	RDC
22 May 2025	Online	Carmen Blackwood	Female	Consultant	RDC

Participants in district consultations

Date	District	Name	Gender	Title
13 May 2025	Beledweyne	Hassan Ahmed Barkhadle	Male	Regional Humanitarian Coordination Officer
13 May 2025	Beledweyne	Ali Ahmud Ali	Male	Member of the Ministry of Humanitarian Affairs Representative
13 May 2025	Beledweyne	Ali Faarax Osmaan	Male	Ministry of Labour, Youth and Sports Representative
13 May 2025	Beledweyne	Deka Mohumad Mohamed	Female	Ministry of Women and Human Rights Representative
13 May 2025	Beledweyne	Mohamed Osman Ali	Male	MoECC Representative
13 May 2025	Beledweyne	Abdiwahol Ali Ahmed	Male	Ministry of Agriculture Coordinator
13 May 2025	Beledweyne	Abdirahmaan Xasan Muumin	Male	Ministry of Water Affairs Representative
13 May 2025	Beledweyne	Nimco Osman Abdi	Female	Ministry of Women and Family Affairs Representative
13 May 2025	Beledweyne	Sawda Abdi Mohamut	Female	Ministry of Education, Culture and Higher Education Representative
13 May 2025	Beledweyne	C/xraxmaan Xasan Dhuunkaad	Male	Ministry of Relief and Disaster Management Representative
22 May 2025	Jowhar	Bashir Mohied Nor	Male	Water officer and technician
22 May 2025	Jowhar	Maxamed Casan Cismaan	Male	Local Authority
22 May 2025	Jowhar	Maxamed Xasan Taate	Male	Ministry of Health Officer
22 May 2025	Jowhar	Abdijaliil Ahmed Abdi	Male	Ministry of Interior Consultant
22 May 2025	Jowhar	Daahir Xuseen Diini	Male	MoECC Representative
22 May 2025	Jowhar	Fadumo Mohamed Cali	Female	Local officer
22 May 2025	Jowhar	Axmed Max'ed Macalin	Male	Local officer
22 May 2025	Jowhar	Maxamed Xuseen Warsame	Male	MoECC Representative
22 May 2025	Jowhar	Hussien Ibrahim Hassan	Male	Ministry of Education Representative
22 May 2025	Jowhar	Deeqo Xassan Jaamac	Female	Ministry of Social Development Representative
22 May 2025	Jowhar	Abdinasir Rashid Hassan	Male	L.F.S Assistant
22 May 2025	Jowhar	Mohamad Said Issack	Male	L.F.S Office
22 May 2025	Jowhar	Abdirashid Ahmed Salah	Male	Engineer
22 May 2025	Jowhar	Mohamed Hassan Adan	Male	Engineer
22 May 2025	Jowhar	Mohamed Muftar Ahmed	Male	Agronomist
26 May 2025	Afgooye	C/xassan Xuseen Gedi	Male	Community Elder

26 May 2025	Afgooye	Siteey Abuukar Maxied	Female	District Committee Member
26 May 2025	Afgooye	Mohamed Abdullahi Abdula	Male	District Committee Member
26 May 2025	Afgooye	Ahmed Ali Isaaq	Male	District Committee Member
26 May 2025	Afgooye	Yuusuf Mohamed Hamud	Male	Elder
26 May 2025	Afgooye	Hassan Yusuf Mohamed	Male	Leader
26 May 2025	Afgooye	Nor Abukar Nor	Male	Leader
26 May 2025	Afgooye	Faduma Abukar Osman	Female	Leader
26 May 2025	Afgooye	Abdiqatar Muse Aweys	Male	District Committee Member
26 May 2025	Afgooye	C/raxman Salax Badir	Male	CBO Member

Participants in community consultations

Date	District	Community	Name	Gender	Occupation/role	Vulnerable group
14 May 2025	Beledweyne	Ceel-Gaal Village	Abdi Axmed Makaraan	Male	Businessperson/Community Development committee	None indicated
14 May 2025	Beledweyne	Ceel-Gaal Village	Ildouw Xaadli Cosulle	Male	Businessperson/Community Development committee	Minority clan
14 May 2025	Beledweyne	Ceel-Gaal Village	Clofaadir Xasan Suubige	Male	Businessperson/Community Development committee	None indicated
14 May 2025	Beledweyne	Ceel-Gaal Village	Moxamud Moxamed Guhad	Male	Businessperson/Community Development committee	None indicated
14 May 2025	Beledweyne	Ceel-Gaal Village	Salaad Muufe Mohamuud	Male	Businessperson/Community Development committee	None indicated
14 May 2025	Beledweyne	Ceel-Gaal Village	Xanuio Xaanshi Janagow	Female	Women's organisation representative	Women
14 May 2025	Beledweyne	Ceel-Gaal Village	Ubax Xuseen Siyaad	Female	Women's organisation representative	Women & Minority
14 May 2025	Beledweyne	Ceel-Gaal Village	Cadax Cali Xaanshi	Female	Women's organisation representative	Women
14 May 2025	Beledweyne	Ceel-Gaal Village	Idil Axmed Xasan	Female	Women's organisation representative	Women & Indigenous
14 May 2025	Beledweyne	Ceel-Gaal Village	Maryan Macalin Axmed	Female	Women's organisation representative	Women & Indigenous
14 May 2025	Beledweyne	Ceel-Gaal Village	Yusuf Aslan Maxamed	Male	Farmer	Minority clan
14 May 2025	Beledweyne	Ceel-Gaal Village	Cadow Aadan Xuseen Maxamed	Male	Farmer	Minority clan
14 May 2025	Beledweyne	Ceel-Gaal Village	Barre Maxamed Maxamuud	Male	Farmer	None indicated
14 May 2025	Beledweyne	Ceel-Gaal Village	Omar Xasan Yuusuf	Male	Farmer	None indicated
14 May 2025	Beledweyne	Ceel-Gaal Village	Cabdi Xasan Siiyaad	Male	Farmer	Indigenous
15 May 2025	Beledweyne	Beledweyne Town	Bosteeqo Cabd Cabdulahi	Female	Housewife	IDP, women and indigenous
15 May 2025	Beledweyne	Beledweyne Town	Fariyo Xuseen Yareed	Female	Housewife	IDP, women and minority clan
15 May 2025	Beledweyne	Beledweyne Town	Xaliimo Salaax Guure	Female	Housewife	IDP and women
15 May 2025	Beledweyne	Beledweyne Town	Raxo Maxamed Axmed	Female	Women's group representative	IDP and women
15 May 2025	Beledweyne	Beledweyne Town	Samaan Muxumed Sabe	Female	Farmer	IDP, women and indigenous
15 May 2025	Beledweyne	Beledweyne Town	Cismaan Saciid Abiikar	Male	Not indicated	IDP
15 May 2025	Beledweyne	Beledweyne Town	C/laas Saalax Cadi	Male	Construction worker	IDP & minority clan
15 May 2025	Beledweyne	Beledweyne Town	C/Qaadir Cusmaan Cumar	Male	Carpenter	Indigenous
15 May 2025	Beledweyne	Beledweyne Town	Xasan Ibraahim Cabdi	Male	Farmer	Indigenous
15 May 2025	Beledweyne	Beledweyne Town	Tarax Col. Salaad	Male	Farmer	Indigenous

21 May 2025	Jowhar	IDP camp	Batuulo Ibrahim Hussein	Female	Not indicated	IDP, indigenous and women
21 May 2025	Jowhar	IDP camp	Ibrahim Mukhtar Jiile	Male	Not indicated	IDP and minority clan
21 May 2025	Jowhar	IDP camp	Deqo Mohamed Mohamed	Female	Not indicated	IDP, women and minority clan
21 May 2025	Jowhar	IDP camp	Rayan Mukhtar Mohamud	Female	Not indicated	IDP, women and indigenous
21 May 2025	Jowhar	IDP camp	Sahro Haji Ali	Female	Not indicated	IDP, women and indigenous
23 May 2025	Jowhar	Jowhar Town	Fadumo Hussein Omar	Female	Agro-pastoralist	Women and indigenous
23 May 2025	Jowhar	Jowhar Town	Mumino Haji Abukar	Female	Famer	Women and indigenous
23 May 2025	Jowhar	Jowhar Town	Hawlo Dawud Muhumed	Female	Agro-pastoralist	Women and indigenous
23 May 2025	Jowhar	Jowhar Town	Hindiya Abdullahi Samane	Female	Farmer	Women and indigenous
23 May 2025	Jowhar	Jowhar Town	Hassan Abukar Mohamed	Male	Agro-pastoralist	Indigenous
23 May 2025	Jowhar	Jowhar Town	Rahmo Hassan Ali	Female	Not indicated	Women
23 May 2025	Jowhar	Jowhar Town	Bishaar Mohamed Mohamed	Female	Not indicated	Women and indigenous
23 May 2025	Jowhar	Jowhar Town	Nuurto Garaad Joogow	Female	Not indicated	Women and indigenous
23 May 2025	Jowhar	Jowhar Town	Mooga Ibrahim Hussein	Female	Not indicated	Women and indigenous
23 May 2025	Jowhar	Jowhar Town	Maryan Mohamed Abdi	Female	Not indicated	Women and indigenous
23 May 2025	Jowhar	Jowhar Town	Mukhtar Sule Mahamed	Male	Village Development Committee representative	Indigenous
23 May 2025	Jowhar	Jowhar Town	Suleyman Mawliid Hassan	Male	Village Development Committee representative	None indicated
23 May 2025	Jowhar	Jowhar Town	Osman Buule Hussein	Male	Village Development Committee representative	None indicated
23 May 2025	Jowhar	Jowhar Town	Ibrahim Abdi Hassan	Male	Village Development Committee representative	Indigenous
23 May 2025	Jowhar	Jowhar Town	Cabdiqadir Nuur Omar	Male	Village Development Committee representative	Indigenous
26 May 2025	Afgooye	Afgooye Town	Qadra Ibrahim Cali	Female	Farmer Group Member	Women
26 May 2025	Afgooye	Afgooye Town	C/laahi c/ Cabdou	Male	Farmer Group Member	None indicated
26 May 2025	Afgooye	Afgooye Town	Anisa Cadnaan	Female	Farmer Group Member	Women
26 May 2025	Afgooye	Afgooye Town	Xaavo Abdi Nasir Adow	Female	Farmer Group Member	Minority clan and women
26 May 2025	Afgooye	Afgooye Town	Abdiqafaar Muse Awey	Male	Farmer Group Member	Minority clan
26 May 2025	Afgooye	Afgooye Town	Siiyd Cali Jeylani	Male	Farmer Group Member	Indigenous
26 May 2025	Afgooye	Afgooye Town	Aamina C/raaxmaan Cadow	Female	Women and Youth Group Member	Women and Minority clan
26 May 2025	Afgooye	Afgooye Town	Caasha Cabdi Sataar	Female	Women and Youth Group Member	Women
26 May 2025	Afgooye	Afgooye Town	Yuusuf Cabdiqadir Kuulow	Male	Women and Youth Group Member	None indicated
26 May 2025	Afgooye	Afgooye Town	C/laahi Abukar Mohamed	Male	Women and Youth Group Member	None indicated
26 May 2025	Afgooye	Afgooye Town	Saeiid Aways Osmaan	Male	Women and Youth Group Member	Indigenous
26 May 2025	Afgooye	Afgooye Town	Xalimo C/qaadir Abuukard	Female	Women and Youth Group Member	Women
26 May 2025	Afgooye	Afgooye Town	Nasaro Jeylani Sid Ali	Female	Women and Youth Group Member	Minority clan
26 May 2025	Afgooye	Afgooye Town	Casho Adan Keerow	Female	Women and Youth Group Member	Women
26 May 2025	Afgooye	Afgooye Town	C/raxman Yusuf Mohamed	Male	IDP and Minority Group Member	IDP

26 May 2025	Afgooye	Afgooye Town	Nastra Jeylaani Siid Cali	Female	IDP and Minority Group Member	Women & Minority clan
26 May 2025	Afgooye	Afgooye Town	Aasha Aadan Keerow	Female	IDP and Minority Group Member	Women & Indigenous
26 May 2025	Afgooye	Afgooye Town	Amiiro Moxamed Shariif	Female	IDP and Minority Group Member	Women & Indigenous
26 May 2025	Afgooye	Afgooye Town	Sucaado Jeylani C/qadir	Female	IDP and Minority Group Member	Women & IDP
26 May 2025	Afgooye	Afgooye Town	Nasro Abdi Muuse	Female	IDP and Minority Group Member	Women & Indigenous
26 May 2025	Afgooye	Afgooye Town	Haaruun Diinle Ali	Male	IDP and Minority Group Member	IDP
26 May 2025	Afgooye	Afgooye Town	Amin Ali Qaasim	Male	IDP and Minority Group Member	IDP
26 May 2025	Afgooye	Afgooye Town	Faadumo Maxamed Abdullahi	Female	IDP and Minority Group Member	Women & IDP
26 May 2025	Afgooye	Afgooye Town	Nuur Geesey Cali	Male	IDP and Minority Group Member	IDP
26 May 2025	Afgooye	Afgooye Town	C/raxmaan Cabdow Cali	Male	IDP and Minority Group Member	Minority clan
26 May 2025	Afgooye	Afgooye Town	Maryan Omar Abdullahi	Female	IDP and Minority Group Member	Women & Indigenous

Consultation techniques

30. Key informants — including representatives of local government within the MoECC and MoEWR, NGOs and international development agencies — were consulted in person or virtually using online video calls. These KIIs were structured as open-ended discussions guided by a set of questions, which were asked adapted for each key informant.

31. District and community consultations used Focus Group Discussions (FGDs) to facilitate discourse between representatives of diverse stakeholder groups and consultants because they: i) enable stakeholders to provide contextual and specific information by using open-ended questions; ii) emphasise commonly held perspectives and support developing a consensus on potential solutions to shared challenges by using participatory dialogues; and iii) enable NCs to adjust questions to obtain further detail where necessary based on emerging information. During the FGDs, a set of questions were asked to collect detailed information on the climate challenges experienced by rural and urban communities, as well as their subsequent adaptation needs. These questions served as a guide and were refined and adapted based on the context and specific stakeholder groups involved.

Results of the Consultation Process

32. The results of these consultations (Tables 6–11) were used to inform all aspects of project design and implementation, including: i) site selection; ii) prioritisation of interventions at each site; iii) environmental and social safeguards; iv) mainstreaming of gender equality considerations; v) cooperation with NGOs and CBOs in the project districts; vi) specifications for Sub-catchment and Urban Greening Plans under Outputs 1.2 and 1.3; vii) design of awareness-raising campaigns; and vii) review and recommendations of policy and incentive packages for replication and upscaling of NbS and hybrid solutions.

Beledweyne

33. As part of district consultations, KIIs and FGDs were held on 13 May at Alzeriira Hall, Beledweyne Town, with four representatives of the MoECC, three of the MoEWR and three of the Ministry of Disaster Management in attendance (Table 6). These consultations were followed by FGDs from 14 to 15 May with vulnerable communities in Ceel-Gaal Village and Beledweyne Town (Table 7), including farmers, women, elders, youth from both majority and minority clans, business owners and displaced agropastoralists.

34. Ceel-Gaal Village is a rural rainfed agropastoral community vulnerable to climate change impacts and hazards. Access to basic services and infrastructure is limited in the village. By contrast, Beledweyne Town comprises IDPs and minority clans living in informal urban settlements. The majority of residents fled from recurrent climate change impacts and hazards that affected their livelihoods. In the IDP camps, they are acutely vulnerable to climate change impacts and frequently do not have access to adequate shelter and livelihoods.

Table 6. Summary of district consultations in Beledweyne.

Topic	Main findings
Social and contextual dynamics and Environmental and Social Safeguards (ESS) considerations	• No major disruptions to projects of NGOs were reported in the area. In general, the current security situation was described as stable, albeit fragile as in other parts of Somalia. • Key stakeholders including representatives from major NGOs and private water supply companies were unavailable for consultation. • Ministerial representatives recommended that NbS interventions should complement, rather than replace, traditional coping strategies such as livelihood diversification to ensure that project interventions are culturally appropriate and achieve sufficient community buy-in.
Local institutions and structures	• Five local farmer cooperatives were identified, namely Kulmis, Dugaaw, Warmoog, Kulmiye and Tabcato. • However, there are no specific community-based groups dedicated to managing water-related challenges. • The representatives specified that no private companies conduct maintenance of the drainage systems. • The general outlook of communities towards programmes supporting climate change adaptation, and particularly the development of infrastructure, was stated to be very positive because of the considerable reliance of local livelihoods on the environment.
Climate vulnerabilities	• Floods and droughts have affected crop yields and livestock productivity and consequently food security and economic stability in the area. • Limited water availability, soil degradation, flooding and the increased incidence of pests and diseases caused by higher temperatures were identified as the main sources of vulnerability. • These factors have shortened growing seasons, led to crop failures and decreased the amount of productive land available to support local communities. • Many farmers have abandoned their traditional livelihoods and migrated to urban settlements, becoming IDPs. There has been a shift to increased employment in small businesses and livestock rearing, as these are less reliant on specific land than agriculture.
Site-level and technical planning	• It was emphasised that the rehabilitation and construction of wells, storage facilities and dams to provide water and manage streamflow was a main priority. Climate-resilient dams should be constructed in Ceel-Gaal, Harar, Ilka-Cade, Waraaboole and Shabellow. • The representatives noted that existing shallow wells that provide the majority of the water supply in the area are owned and operated by private commercial companies, and that maintenance of these was inadequate. • Environmental restoration and conservation along rivers and *wadis* to control erosion, as well as improved waste management, were also stated as priorities. • Two main water drains exist in and around the city, namely Dhagaxjebis and Waraaboole. These drains function effectively, acting as buffers by diverting excess water from the river during flooding and channelling it back into the river downstream. There are no private companies responsible for their maintenance. • Waste management companies were noted to have been established recently; however, the majority of residents continue to transport and dump their waste outside of the city. • Hawo-Tako, Kooshin should be prioritised for improved waste management. • Areas close to the riverbank in the suburbs of Hawo-Tako, Kooshin, Howlwadaag and Oktobar should be targeted for flood control interventions. • Capacity-building interventions should focus on flood and drought risk management, accessing the considerable amount of water flowing through the district, climate resilience and climate smart production technologies, including saving irrigation water and improving soil health and structure.
Communication and awareness	• Communities were stated to be aware of practices contributing to climate change adaptation, particularly for floods and droughts, although capacity limitations have prevented their implementation. • It was noted that no coordinated campaigns to raise awareness for NbS interventions exist, although limited initiatives occur in the district.

Policy and scaling	• A need for specific and coherent policies that are focus on finding sustainable and locally based solutions that involve the grassroots, private and the public was identified. The policies should transform flood hazards into opportunities that benefit both the communities and the district. Additionally, they should address the causes and consequences of drought using integrated programs and interventions. • These solutions can be achieved by collaborative efforts, with the project playing a facilitative role and the public institutions developing the policies that are supportive whilst the communities implement and benefit from them.
Other projects in the area	• It was noted that several other organisations have carried out adaptation interventions in the district. For example, FAO has rehabilitated dams and constructed new drainages and canals. • The representatives emphasised the need for communication with these organisations to prevent duplication of effort and incorporate lessons learned, as past interventions have not addressed flood and drought challenges adequately.
Other considerations	• The urgency of climate change adaptations was emphasised, as climate change impacts and hazards in the area are frequent, impactful and have increased in severity.

Table 7. Summary of community consultations in Beledweyne

Topic	Main findings
Social and contextual dynamics and ESS considerations	• The social context of rural Ceel-Gaal was noted to differ from that of Beledweyne Tow. For example, in Ceel-Gaal, decision-making authority is based on clan affiliation and age, with select elders taking major decisions following consultations. These elders are the primary 'peacemakers' during conflicts and their traditional authority is widely viewed as an effective and necessary alternative to formal government mechanisms. By contrast, in Beledweyne Town decision-making authority is shared by clan elders and members of a community conflict resolution committee. • In both communities, women experience disproportionate vulnerability because of their limited ability to own land and greater responsibility for manual household labour. Women were noted to have some decision-making authority at the household level, but not at the community level. • While it was noted that for most women, increased earnings would be shared within their households, the potential for women to earn more than their husbands was not stated to be a challenge. • opened their own businesses in recent years to diversify their incomes in response to climate change impacts on agropastoral livelihoods. • In Beledweyne Town, it was noted that women were already the primary earner in many households, although men were more likely to have financial control and the need to promote shared financial decision-making was emphasised to prevent potential conflict. Women were generally enthusiastic regarding potential increased earnings and emphasised that this money would be invested into their households. • The current security situation was described as calm in both communities, with no likely threats to project implementation, although this was noted to be subject to change.
Local institutions and structures	• Women in these communities receive and provide mutual support using Village Savings and Loans Associations (VSLAs) in Ceel-Gaal. Respondents suggested strengthening these to facilitate women's involvement in project interventions. In Beledweyne Town, no formal support structures for women exist, but they were noted to discuss their challenges and offer mutual support within small circles of friends and family. Beledweyne Town respondents suggested establishing women's cooperatives to facilitate skills development, economic empowerment, resource access and decision-making authority. • There are no formally registered agricultural cooperatives or civil society organisations (CSOs) focused on water or natural resource management in Ceel-Gaal or Beledweyne Town. Instead, informal, traditional systems are used to organise and manage shared resources. Although these systems are useful, their insufficient capacity, access to resources and lack of formal recognition limits their ability to implement sustainable interventions at scale. A transition to formalised structures that incorporate traditional systems is preferred by respondents. • Similarly, there are no formal waste management structures at the municipal or community level in Ceel-Gaal. An informal community task force exists, but its efforts have been inconsistent and inadequate to resolve the challenge. In Beledweyne Town, community members collect and burn their waste. • It was suggested that VSLAs, although not originally intended to support NbS interventions, have potential to be used to facilitate these, for example to distribute climate-resilient seeds.
Climate vulnerabilities	• Increased temperatures, decreased rainfall and a greater prevalence of pests and diseases have been noted in Ceel-Gaal. These have impacted crop yields and livestock productivity, with decreased vegetation cover and soil quality on crop- and rangelands. • In response, agropastoralists have begun using drought-tolerant crops and livestock and diversifying their livelihoods, including business development by women and rural-urban migration by the youth. However, this has led to a shortage of labour for the agricultural sector. • In addition, floods such as one that occurred in 2023 cause widespread damage to infrastructure, homes and farmland, disrupting livelihoods and essential services. • Floods are particularly common along the *wadis*; when local residents evacuate the areas adjacent to *wadis* during the rainy season, this disrupts their livelihoods and can lead to temporary or permanent displacement if homes and infrastructure are damaged. Ceel-Gaal Village is located close to these *wadis* as residents source the majority of their drinking water from shallow wells within the *wadis*. • Flash floods are common in Beledweyne Town, with insufficient drainage emphasised as the main vulnerability. During droughts, IDPs are more vulnerable than residents of Ceel-Gaal as water storage infrastructure is unmanaged and insufficient. • The IDPs of the camps in Beledweyne Town were noted to have been displaced primarily by annually repeating climate change impacts such as droughts and flooding. The cyclical and frequent nature of flooding was noted to prevent respondents from rebuilding their ds. • Although many IDPs wish to return to their land, economic hardship and continued climate change prevent them from rebuilding agricultural livelihoods. A requirement to improve climate resilience was noted as a prerequisite to returning.
Site-level and technical	• *Wadis* near Ceel-Gaal were identified as appropriate sites for the construction of sand dams and V-shaped weirs. It was noted that these will function to provide water, reduce flood risk and

planning	protect a local bridge by limiting the accumulation of sand and debris at its base. In Beledweyne Town, both wadis and the Shabelle River were suggested as potential sites for dams and weirs • Moreover, the neighbourhoods adjacent to wadis in Ceel-Gaal were also proposed for implementation of drainage. The NCs were led to inspect these neighbourhoods. IDP camps in Beledweyne Town should also be prioritised for drainage construction because of the severe effects of regular flash flooding. • Although most agriculture near Ceel-Gaal is rainfed, irrigated farms existed near the river. Improving and modernising irrigation infrastructure was noted as a potentially beneficial intervention. • Respondents from Beledweyne Town emphasised the requirement for solar-pumped water storage near *wadis*, noting this could support farms and rangelands during the dry season.
Communication and awareness	• Respondents in both Ceel-Gaal and Beledweyne Town were notably aware of the benefits of sand dams and weirs in *wadis* for improving water supplies and decreasing flood risk. Similarly, respondents were enthusiastic about climate-resilient agricultural and pastoral practices. There was also limited awareness of the need to remove waste in both communities. • Conversely, there was no awareness of the benefits of trees and vegetation to agropastoral livelihoods, as these only materialise in the long term. No community efforts to revegetate exist; instead, it is common for trees to be harvested for firewood and charcoal production. • Respondents from Beledweyne Town emphasised that awareness-raising campaigns on tree planting and conservation should link environmental stewardship to income generation and empower women.
Policy and scaling	• Suggested policy amendments included IDP-inclusive state resilience plans that incorporate humanitarian and development programming, formalised community land tenure to enable NbS investments and policies for equitable water access. • Moreover, the successful establishment of VSLAs should serve as a model for community-led interventions in the proposed project, particularly the establishment of climate-resilient nurseries. • There is potential for replicating sand dams — if successful at Ceel-Gaal — across the entire Shabelle River Basin.
Other projects in the area	• Previous projects in Ceel-Gaal were noted to have mostly been short-term interventions, such as cash-for-work activities focused on clearing weeds and wild plants from the *wadi* to improve water flow. • As these projects lacked long-term sustainability and follow-up, their benefits were temporary. No similar projects were identified as having been implemented in the previous five years in Ceel-Gaal or Beledweyne Town. • The cash-for-work activities to clear a *wadi* in Ceel-Gaal were noted to have been effective in improving water flow and provided temporary employment. It was suggested that expanding and building on such community-driven, labour-intensive interventions will potentially benefit the area more broadly. • The focus on specific, short-term interventions of previous projects was emphasised as having led to their insufficient benefit realisation. Respondents suggested that the project should focus on building market infrastructure and capacity for women and youth, with the introduction of VSLAs emphasised as a previous success.
Other considerations	• Conflicts in rural areas are noted to occur over access to land and water resources, particularly between farmers and pastoralists. Within IDP camps, conflicts arise primarily over limited living space or as domestic disputes within households as a consequence of economic and social hardship. • It was stated that in Ceel-Gaal Village, shallow wells that provide water supply to the majority of residents are owned by private persons without any municipal oversight and frequently receive insufficient maintenance.

Jowhar

35. As part of district consultations, KIIs and FGDs were held on 22 May at Jako Hotel Meeting Hall, Jowhar Town, with representatives of ministries, local authorities, NGOs and water organisations (Table 8). These were preceded and followed on 21 and 23 May by FGDs with vulnerable communities in the Ciil-Tire IDP settlement and Jowhar Town (Table 9), including recently displaced persons, minority clan members, youths, farmers, elders and women.

Table 8. Summary of district consultations in Jowhar

Topic	Main findings
Social and contextual dynamics and ESS considerations	• Conflicts between farmers with current access to irrigation and rainfed farmers were noted. It was suggested that the latter will potentially cause intentional breakages of the river wall to access water, causing floods. • Rural-urban migration places strain on urban centres, as these are subject to economic and security restrictions by armed militia. • Although there are no major security threats currently, the security situation in the district remains fragile and occasional threats from the insurgency and local conflicts have the potential to disrupt operations. However, there are NGOs and other organisations that implement programmes in the district.
Local institutions and structures	• Several informal farmer cooperatives exist in the district. These farmer groups are typically village-based groups with no formal registration and comprising only a few members within the village. • There are no specific community-based groups dedicated to address water, flood and drought-related challenges. • No municipal institutions exist to assist in waste management. Waste is either burned outside residences or moved outside the city to unofficial dumping areas. Similarly, not municipal or commercial companies are involved in maintaining and cleaning drainage systems.
Climate vulnerabilities	• Prolonged droughts and frequent floods that are caused by climate change have led to repeated livestock and crops losses, forcing displacement of people and animals leading and leading

	to loss of livelihoods. These farmers and pastoralists are also recording low productivity caused by a combination of resource degradation, limited access to water and climate resilient inputs. • For example, floods at the beginning of the 2025 *gu* season[3] have destroyed access roads and fields, causing farmers to miss the agricultural season. This has been particularly impactful for rainfed farmers. Floods and droughts have been noted to be more frequent and last longer than in the past. • The absence of drainage infrastructure in Jowhar Town and its surroundings was noted to exacerbate flooding. • Consequently, droughts and floods have caused displacement and rural urban migration. Income diversification strategies such as the establishment of microbusinesses and employment in temporary urban jobs has become commonplace.
Site-level and technical planning	• Respondents suggested that flood prevention infrastructure that also increases water supply should focus on rainfed agricultural areas so as not to duplicate efforts with the Jowhar Offstream Storage Programme (JOSP). • Canals were stated to be numerous but inadequate at mitigating flood risk, being too narrow, shallow or filled with debris. Flood risk prevention infrastructure will be vulnerable to floods and should be constructed in a climate-resilient manner to avoid becoming damaged or inoperational, as occurred with previous initiatives. • Adaptation priorities were noted to differ between residents in irrigated riverine areas and rainfed areas further from the Shabelle River. Riverine farmers require strengthening, clearing and expansion of canals and constructing additional canals and dams, capacity-building, policy development and the introduction of water-saving technologies. Agropastoralists in rainfed areas share this requirement for additional water distribution and storage infrastructure but have a greater focus on restoring and revegetating habitats, increasing ecological awareness and introducing climate-resilient agricultural and pastoral practices. • Canals, dams and drainage systems were suggested to be relevant throughout the district, as these will mitigate flood risk whilst also increasing water supply. Introduction of drought-resistant seeds and ecosystem rehabilitation were further emphasised as potential interventions to address drought risk. • In addition to investing in infrastructure, respondents prioritised increasing sustainability and resilience by improving regulation of water storage and supply systems, increasing maintenance capacity and • stablishing public-private partnerships. • Respondents noted that the majority of suburbs in Jowhar Town, particularly Hawlwadaag, Kulmis, Horseed and Buulo-Sheikh require improved drainage and waste management services and systems.
Communication and awareness	• There are occasional training opportunities and awareness campaigns on various topics, including adaptation interventions, provided by NGOs. However, there is no coordinated capacity-building or awareness-raising programme that specifically focuses on climate change impacts. • A need for capacity-building programs on climate change adaptation was acknowledged, particularly for flood and drought management, resource management, organisation and climate-resilient agricultural techniques, including on • n and soil quality. • Respondents emphasised that local communities — being mostly farmers and agropastoralists whose livelihoods climate-dependent — understand the potential benefits of the proposed project in improving their adaptative capacity. They are aware of the practices that contribute to the adaptation, particularly for flood and drought challenges, but are limited by insufficient capacity to address these.
Policy and scaling	• Despite the repetitive floods and droughts that regularly occur in the district, there is no District Resilience Plan of sustainable solutions for the flood and drought control. The local authorities and state government are collaborating on developing an appropriate strategy. • It was suggested that analyses and consultations undertaken in the proposed project will be beneficial in developing this plan, particularly as NbS will be integrated. • Respondents noted that the project could assist local and state level authorities in developing and implementing specific and comprehensible policies for addressing the underlying causes of floods and drought and guide the communities to reach sustainable solutions.
Other projects in the area	• The JOSP was noted as the main project due to be implemented in the area. • Moreover, several organisations including, International Committee of the Red Cross (ICRC), NRC, Actions Against Hunger (ACF), WARDI and World Vision are active within the district, having previously facilitated the rehabilitation of canals and water reservoirs, established cooperatives and assisted the development of production systems and small businesses. • The respondents were not able to share specific successes and challenges of previous projects but suggested that the mentality of project beneficiaries and disorganisation were barriers to adaptation.
Other considerations	• Water availability differs between rural and urban contexts. In rural areas, the water supply is taken from the Shabelle River, shallow wells and temporary pools of stagnant water called *warta*. Shallow wells are managed and maintained using combined funds of the communities living near them. Conversely, urban areas have a reliable water supply provided by a commercial company which also carries out maintenance.

Table 9. Summary of community consultations in Jowhar

Topic	Main findings
Social and contextual	• Whereas male IDPs prioritised interventions facilitating returning to their lands and livelihoods, women and youth prioritised skills development and access to financial and employment

[3] The primary rainy season in Somalia, typically occurring between April and June each year. For more information, refer to Part I: Project Background and Context: Environmental Context of the Funding Proposal.

dynamics and ESS considerations	opportunities. • It was noted that the displacement of elders from rural lands is leading to a loss of agricultural expertise, whilst the displacement of youths and women has caused labour shortages. Respondents suggested that interventions should be paired with reintegration support for returning IDPs to ensure the • sustainability of project interventions. • Within IDP camps, disputes are mediated by conflict resolution committees comprised of respected community members, whereas in rural villages surrounding Jowhar Town, conflicts are settled by deferring to village elders in a widely trusted and respected traditional system. In cases where disputes are particularly complex, or when the traditional mechanisms are unable to resolve them, the matter is escalated to local authorities or formal legal institutions, depending on the nature and severity of the issue • Conflicts within IDP camps arise primarily over domestic disputes and competition for space, as boundaries within these camps are not demarcated clearly. In rural villages, conflicts between pastoralists and farmers are increasingly common during the dry seasons. • Women are responsible for several roles, including cooking, cleaning, child-rearing, caring for the elderly, income generation from small-scale trade and labour-intensive agricultural tasks. • Challenges arising from limited land ownership, exclusion from decision-making, unequal financial control and social norms that impede their full participation. • Although women generally expressed positive sentiments to the concept of potentially earning more than husbands or male household members, they emphasised the need to promote shared financial decision-making and mutual respect within households and Incorporate family dialogue sessions and gender awareness activities into the project to build understanding to avoid tensions within households. • Security in Jowhar Town and its immediate surroundings is currently stable, with no major incidents reported that would impede project activities or staff movement. Theft and vandalism are not major concerns within the camp or Jowhar Town. However, periodic violent conflicts have the potential to affect the transport of materials, staff mobility and community engagement in areas outside the town. Many IDPs in the camps remain unable to return to their villages of origin due to ongoing insecurity, which • Minority clans and marginalised groups, particularly within IDP camps, are vulnerable to systemic exclusion on the basis of ethnic background, clan affiliation or social status. These communities frequently lack access to land, economic resources and essential services, and are excluded from decision-making processes, exacerbating their vulnerability. Traditional settlement patterns and land access systems are structured around clan affiliations, which further restrict marginalised groups from accessing water and other natural resources. Without formal or customary rights, they remain dependent on dominant clans and contend with tenure insecurity and exclusion from development opportunities. • Respondents recommend that projects include these groups using targeted outreach, inclusive consultations, and equitable benefit-sharing. Working with local leaders and structures will potentially assist in addressing the causes of exclusion and promote social cohesion. The proposed project should identify resource-insecure groups, facilitate their participation in decision-making platforms and explore shared or alternative livelihood options. Integrating conflict-sensitive and rights-based approaches will potentially balance power dynamics and contribute to sustainable, inclusive development outcomes.
Local institutions and structures	• Currently, no formal agricultural cooperatives operate in the area. Although there is some informal community-level collaboration among farmers and residents, particularly for farming and water-sharing practices, these are not structured or officially recognised cooperatives. Similarly, there are no active CBOs or CSOs related to water management, natural resources or climate resilience active in the area. • Most community support in the area is provided by external humanitarian organisations or NGOs, often in the form of temporary project-based interventions rather than long-term, locally-driven structures. • There are no drainage or waste management structures, municipal or community-led, within the IDP camps in Jowhar. Waste is collectively buried in shallow pits or burned in open spaces within the city. • Currently, there are no formal women's cooperatives or organised women's groups operating in the area. Instead, women typically participate in community life using informal networks small, trusted groups where they discuss and address day-to-day concerns. Some women have formed VSLAs to facilitate saving and resource sharing.
Climate vulnerabilities	• Prolonged, recurring droughts and floods are noted to decrease productivity, destroy crops and livestock, damage property and infrastructure, increase soil erosion and disrupt essential services, resulting in both temporary and long-term displacement of rural agropastoralists into urban centres. Standing water following flood events was also emphasised as a public health risk. • Climate change impacts have led to livelihood diversification, including the establishment of microbusinesses and a greater reliance on humanitarian aid, casual labour and traditional practices such as collecting wild plants by women and illegal charcoal production by men.
Site-level and technical planning	• Respondents emphasised that previous interventions had focused on the irrigated riverine areas, leaving the more distant rainfed crop- and rangelands underserved. Even in irrigated areas, water distribution is inefficient and labour-intensive, whilst rainfed areas are not irrigated despite the abundance of water in the Shabelle River because of inadequate irrigation infrastructure and equipment. • Flooding was reported to occur frequently in the area between the east bank of the Shabelle River and the Balcad Reservoir, particularly during the rainy seasons. During these times, severe floods of fast-moving water impact nearby villages and agricultural land. This has rendered homes uninhabitable and led to the abandonment of entire villages. Moreover, flooding is noted to occur along *wadis* during the rainy season, which are located near fields and rangelands. • Moreover, the canals east of the Shabelle River — particularly the area adjacent to the FAO-built canal — are regularly affected by seasonal floods. This occurs primarily because the buffer zones, originally intended to absorb excess water during the rainy and flooding season, are now inhabited by agropastoralist communities who farm and reside within these vulnerable flood-prone zones. • Farmers relying on rainfed and recession agriculture within and east of the canal were stated to be open to the possibility of relocation if provided with appropriate options, which are currently absent. Farmers interviewed expressed a willingness to move to suitable land where they could sustainably farm and rear livestock, particularly if additional water sources such as shallow wells, *desheks* or water harvesting systems are made available. However, this area remains partially inaccessible because of security concerns. A comprehensive assessment is required to fully understand the perspectives, needs and conditions of the broader population currently residing within and east of the canal.

	• Additionally, access to the paleo river course east of Jowhar is limited because of ongoing security challenges. These conflicts create uncertainty, making it difficult for community members to settle and use the land safely and consistently. As a result, the area remains underused despite its potential for agricultural or water-related interventions. Further security assessment and land ownership structures will be required to facilitate the successful implementation of any future projects in this region. • Urban and cropland encroachment, floods and droughts have limited the availability of rangelands surrounding Jowhar Town. The resulting competition has led to overuse and degradation of the remaining lands, i are now primarily located in the rainfed areas and therefore vulnerable to droughts. Some agropastoralists have adapted by renting land from settled farmers to cultivate fodder crops for their livestock, whereas previously they grazed their livestock openly.
Communication and awareness	• The general outlook on the proposed project interventions was positive, particularly among recently displaced agropastoralists seeking to return to their land and increase the climate resilience of their livelihoods. • Currently, there is no awareness campaign and no participation in tree planting or the maintenance of green areas within the community, as these activities are considered too labour-intensive whilst offering no immediate benefits. Respondents proposed conducting awareness campaigns to promote the benefits of urban green spaces, establish food-for-work or cash-for-work (CfW) programmes and other livelihood support mechanisms and provide equipment and expertise for community-led greening programmes.
Policy and scaling	• Respondents chose not to comment on policy recommendations or scaling, on the grounds that this was the responsibility of district and state authorities.
Other projects in the area	• The absence of formal feedback and grievance mechanisms in previous development projects has been noted and strongly emphasised by community members, who expressed a desire for inclusive, transparent and responsive systems to raise concerns, provide input and track responses. • IDPs recommended establishing accessible, culturally appropriate grievance channels such as help desks, mobile hotlines, suggestion boxes or community liaison officers, regular communication with beneficiaries about how to use the system and what to expect and provide timely and transparent follow-up to reported concerns.
Other considerations	• Within IDP camps, the water supply is provided by two wells constructed by aid organisations and Somali philanthropists. However, these wells are inadequate to meet the needs of the growing camp population. Water management is overseen by a resident-appointed committee. Similarly, informal water management systems are in place in surrounding villages, but these have been unable to sufficiently address the impacts of recurring floods and droughts, rendering these systems ineffective. There is no capacity for expanding the water abstraction, harvesting or storage infrastructure or adequately regulating existing infrastructure.

Afgooye

36. As part of district consultations, FGDs were held on 26 May with intellectuals from the Afgooye district villages, farmers, herders and agricultural cooperatives (Table 10). These were preceded from 24 to 25 May by KIIs and FGDs with residents of village adjacent to the Shabelle River and pastoralists of the *deeh* rangelands (Table 11), including farmers, pastoralists, women, youth, persons with disabilities, community elders, religious leaders, local government officials, agricultural and water management officers, and representatives of local CSOs.

Table 10. Summary of district consultations in Afgooye

Topic	Main findings
Social and contextual dynamics and ESS considerations	• Respondents noted that land management and land tenure in Southwest State are complex, regulated by a combination of customary (*Xeer*) laws, and Islamic (*Shari'a*) law. Particularly in pastoral rangelands and many agricultural areas, *Xeer* continues to be the fundamental mechanism for land control. Land access is frequently determined by social identity and family ties. • The lack of pasture and water forces pastoralists to move farther and frequently causes tensions with farming communities. In resolving disagreements about property, authorising land transactions — particularly when an outsider is involved — and maintaining customary standards, village elders and traditional leaders are seen as authoritative. Tenure security within the community is typically provided by their recognition.
Local institutions and structures	• Respondents did not comment on the status of local institutions and structures, beyond suggesting that management of water resources and infrastructure, as well as conflict resolution, was typically community-led. The role of respected elders was emphasised; although these are not necessarily formal leaders, their authority is widely recognised within communities.
Climate vulnerabilities	• The entire South West State was noted to be vulnerable to droughts and floods, with those areas in which drainage, waste management and ecosystem restoration projects are typically implemented among the most vulnerable. Consequently, respondents suggested that climate change resilience considerations should inform the design and implementation of the proposed project to ensure its sustainability. • Prolonged and frequent droughts have caused severe livestock losses for pastoralists and widespread crop failure for farmers, particularly the 2016–2017 and 2022–2023 droughts. The combined impacts of floods and droughts, conflict and competition for water and land have increased rural-urban migration in Afgooye.
Site-level and technical planning	• There was a notable preference for integrated projects that combine drainage, ecological restoration and conservation and improved waste management to simultaneously address climate change and non-climate change-related challenges such as flooding, pollution and ecosystem degradation.
Communication and awareness	• Respondents discussed several NbS measures that align with proposed project interventions, including improving drainage, maintaining forested areas and improving

	waste management, demonstrating that at the district level there is awareness of the benefits of adaptation interventions. However, the requirement for awareness-raising campaigns to disseminate this knowledge among communities was also emphasised.
Policy and scaling	• Respondents did not comment on policy considerations. It was emphasised that project interventions should be climate-resilient and integrative of both climate and non-climate challenges.
Other projects in the area	• Respondents noted that a previous sand dam project had been implemented at Biyooeley, but that no benefits from this had materialised for the residents of Afgooye. • Moreover, FAO, CARE and similar development organisations have carried out repairs and rehabilitation on wells and canals in the area, but these interventions have been insufficient to provide an adequate water supply.
Other considerations	• Despite their limited capabilities, farmer and pastoralist communities are primarily responsible for maintaining water infrastructure. • Water for irrigation is only accessible to farmers growing valuable cash crops such as fruit because of the expense required to pump water.

Table 11. Summary of community consultations in Afgooye

Topic	Main findings
Social and contextual dynamics and ESS considerations	• Conflicts are typically resolved by village elders, whose authority is widely respected and accepted. Most conflicts arise over disposal of waste, access to irrigation water and competition over land between pastoralists and farmers. These elders are also responsible for selecting the local leadership structure and regulating water access from the river. • Community elders were noted to be influential in selecting labour for public works and development projects, with preference sometimes being given to those that are most in need of work, such as IDPs escaping conflict. While this system was noted to function appropriately the majority of the time, there have been occasions when salaries are delayed or not paid in full, and in some areas, women are exploited sexually to obtain employment. • Some minority clans in the area are discriminated against strongly by the local majority Jareer population, including the Gibilcad, Jareer and Gibil Madow residing in settlements west of the river. Although there is no formalised legal system of discrimination, Jareer are socially prohibited from many types of interactions with them, such as collective eating. • While some privately used land is owned by its occupants, most public land is collectively occupied by groups that have no formal land tenure. Formal land tenure for such land is not an official requirement by local or state authorities. • The majority of the district is described as having no current security threats although their presence was acknowledged in specific areas.
Local institutions and structures	• Several groups and cooperatives exist in the area that collect money, including the Bok Jiro, Naseeb Khaydsan, Rasmi, Ubax, Burucow and Buslow. The majority of these are comprised of farmers and pastoralists, labourers, workers, small artisans and professionals and private businesses. Some of these farmer CBOs receive international humanitarian assistance, but those CSOs focused on water management generally do not. • Women's groups exist in Afgooye and are considered functional. The high degree of trust in women regarding the administration of funds has resulted in women also frequently being chosen to oversee funds in mixed-gender neighbourhood groups. Respondents suggested that women with appropriate financial literacy and experience can be integrated into management of district committees. • Women's and youth groups are noted as attempting to implement conservation, resource management, drainage and waste management, but are limited by insufficient funding and experience.
Climate vulnerabilities	• The impacts of the recent 2024 floods and 2011 and 2018 droughts have included crop failures, loss of stored food, decreased fertiliser quality and severe water shortages. The resulting food insecurity led to widespread displacement as many community residents moved to the city to find alternative sources of income. • Climate change impacts have resulted in a shift in crop types that are planted, from maize, sorghum and sesame to cotton, pumpkins, and nuts, as the latter are less reliant on water and can be planted farther from the Shabelle River.
Site-level and technical planning	• There are no sewage systems or garbage disposal in the city, and residents frequently dispose of their waste by the riverside • Respondents emphasised the construction and rehabilitation of canals as well as flood protection infrastructure.
Communication and awareness	• Respondents stated that some awareness programmes were already being implemented in the area. For example, raising community awareness of the benefits of trees to prevent deforestation was stated to currently be a priority. Similarly, people are being educated to not settle in areas that are at risk of flooding.
Policy and scaling	• Respondents did not comment on policy recommendations. • The need for dredging of canals and construction of water storage, as well as provision of climate-resilient seeds was emphasised. Respondents further explained their plan to construct a reservoir between Baladul Amin and Morodiinle and requested assistance and funding to build wells to supply water.
Other projects in the area	• It was noted that previous projects on flood prevention had focused on inappropriate areas, rather than where they were needed most acutely. There are several projects in the area that were abandoned during implementation, and no projects have been implemented in several years. Moreover, respondents noted an absence of drought mitigation projects. Respondent perspectives on previous projects were generally negative, as these had not adequately addressed climate change challenges in the area.
Other considerations	• Water infrastructure is severely degraded and have not received adequate maintenance in 30 years, with wells needing to be cleared and repaired prior to each use by individuals that draw water.

Figure 1. Community consultations in Beledweyne (14 to 15 May 2025).

Figure 2. Community consultations in Jowhar (21 and 23 May 2025).**1**

Figure 3. Community consultations in Afgooye (24 to 25 May 2025).

Part B: Stakeholder Engagement Implementation Plan

Engagement objectives

37. The Stakeholder Engagement Plan is intended to ensure that individuals and groups affected by or interested in the EARNSS project are engaged in a timely, inclusive, and context-appropriate manner throughout the life of the project. Stakeholder engagement is not only a means of securing social acceptance, but a core strategy to improve the relevance, equity, and sustainability of project interventions.

38. Specifically, the objectives of stakeholder engagement are to: support the inclusion of diverse perspectives in the planning and delivery of project activities; ensure that marginalised and vulnerable groups are meaningfully involved in decisions that affect their lives and environments; promote trust and transparency between communities, authorities, and project partners; and identify and address risks through participatory dialogue and feedback. Engagement is also intended to strengthen local ownership of the project's outcomes by facilitating shared understanding and collaborative decision-making.

Principles of inclusive, meaningful participation

39. Meaningful participation under this project will be guided by a set of principles that reflect good practice in stakeholder engagement within fragile and diverse social settings. Engagement will be inclusive, providing all groups — including those often excluded on the basis of gender, displacement status, ethnicity, or social position — with genuine opportunities to participate. This requires tailored approaches to ensure the involvement of Somali Bantu communities, minority clans, internally displaced persons (IDPs), women, and youth, whose perspectives may otherwise go unheard.

40. Transparency will be maintained throughout, with information shared in formats and languages appropriate to the local context. Communication will prioritise clarity and accessibility, particularly for those with limited literacy or access to formal channels. Participation will be free and voluntary, with stakeholders engaged respectfully and without coercion. The project will work through recognised local leadership structures, but will also ensure that traditional authority does not inhibit the participation of those with less power.

41. Gender responsiveness is a core concern. Engagement processes will be designed to reflect the realities of women's time use, mobility, and safety, and will include strategies such as separate meetings or the use of female facilitators where appropriate. Recognising the complexity of the Somali context, all engagement will be designed and facilitated in a conflict-sensitive manner. Special care will be taken to avoid reinforcing existing inequalities or inflaming inter-group tensions, and facilitators will be trained to navigate sensitive issues constructively.

42. Finally, the project will maintain an open feedback culture. Stakeholders will have access to safe and responsive channels for raising concerns or complaints, and the project will adjust implementation as needed in response to well-founded grievances or lessons from the field. These principles will be applied consistently across all components and phases of the project, and will inform the design and delivery of all consultation, planning, and grievance response activities.

Targeted engagement with marginalised and vulnerable groups

43. The project recognises that certain groups — particularly ethnic minorities, IDPs, marginalised agropastoralist communities, and other historically excluded populations — may face barriers to full and effective participation in stakeholder engagement processes. These barriers may include social stigma, limited mobility, language and literacy constraints, fear of reprisal, or exclusion from formal governance mechanisms. In some areas, these groups may include communities such as the Somali Bantu, Eylo, Reer Aden, and other minority clans or sub-clans, whose vulnerability is compounded by discrimination and constrained access to natural resources, services, and representation.

44. While the project does not trigger a standalone Indigenous Peoples Planning Framework (IPPF), the UNEP ESSF requires meaningful engagement with all potentially affected groups, including those who may self-identify as Indigenous or share similar characteristics. The project has therefore adopted a precautionary approach to ensure that engagement with these communities is inclusive, culturally appropriate, and based on mutual understanding and respect.

45. In line with this approach, specific groups that may require enhanced engagement have already been identified through field-level stakeholder engagement processes in the three project areas. In Beledweyne, consultations included members of the Reer Aw Xasan, Reer Shabeele, Dir, Ujeejeen, and Baadi Cade communities, some of whom may face barriers related to exclusion from governance processes or limited access to productive resources. In Jowhar, participants included representatives of the Eylo, Reer Aden, and Shiidle communities—groups that are often categorised as ethnic minorities, with several women and youth representatives also engaged. In Afgooye, engagement involved individuals from the Galadi, Gurgaarti, Wacdaan, Garre, Mirifle, Hintire, and Murusade communities, with several of these groups facing risks linked to informal settlement, marginalisation or displacement (Table 12). While the Somali Bantu were not explicitly recorded in the stakeholder lists, they are a well-documented minority group in the Shabelle river basin and may be present within the project's zones of influence.

Table 12: Institutions relevant for stakeholder engagement

Location	Identified or Potential Present Minority Groups
Beledweyne	Somali Bantu, Eylo, Reer Aw Xasan, Reer Shabelle, Dir, Jijeele, Gaal-Jecel, Makane

Jowhar	Eylo, Reer Aden, Shiidle, Abgaal, Bantu (potentially)
Afgooye	Eylo, Gurgaarti, Galadi, Murusade, Garre, Wacdaan, Hintire, Mirifle, Bantu (potentially)

46. Engagement with these groups will follow the principles outlined in UNEP Safeguard Standard 7 (Indigenous Peoples), Safeguard Standard 4 (Community Health, Safety and Security), and the Adaptation Fund's Environmental and Social Policy, with attention to Principles 7 (Indigenous Peoples), 5 (Access and Equity), and 9 (Marginalised and Vulnerable Groups). The approach will also reflect the stakeholder engagement and information disclosure standards embedded in the UNEP ESSF and aligned with international good practice.

47. To this end, the project will apply the following targeted engagement measures:
- Dedicated consultations with representatives of marginalised and vulnerable groups during planning, implementation, and monitoring stages, including separate focus group discussions where needed to facilitate open expression of views;
- Inclusion of community-appointed focal points from minority groups within participatory governance structures such as rural and urban community committees;
- Use of culturally appropriate methods, such as consultations in local dialects, use of oral over written formats, and facilitation through trusted intermediaries where appropriate;
- Safeguards training and guidance for local facilitators and implementing partners (e.g. Sadar and local authorities) to help identify and engage these groups proactively;
- Monitoring and reporting mechanisms disaggregated by gender, displacement status, and, where possible, ethnic or clan identity, to track participation and address gaps in inclusion;
- Grievance redress accessibility to marginalised groups, including informal settlements and those outside formal land tenure systems.

48. Where a group self-identifies as having distinct cultural characteristics, collective attachment to land, or systems of self-governance that align with the UNEP definition of Indigenous Peoples, engagement will strive to reflect the principles of Free, Prior and Informed Consent (FPIC). In this context:
- **Free** means that engagement is undertaken voluntarily and without coercion, manipulation, intimidation, or undue influence;
- **Prior** means that engagement is conducted well in advance of any final decisions or authorisations, allowing sufficient time for community deliberation;
- **Informed** means that communities are provided with accessible, complete, and comprehensible information about the nature, scope, purpose, and potential risks of the proposed activities, including alternatives;
- **Consent** refers to a collective decision made by the community in accordance with its customary decision-making processes. It may be granted or withheld, and may be conditional. Consent is documented but not assumed.

49. These measures are designed to ensure that the project does not reinforce existing patterns of exclusion or exacerbate vulnerabilities. Where risks of exclusion or elite capture are identified—such as the concentration of project benefits among dominant clans—adaptive engagement strategies will be employed. These may include targeted re-engagements, enhanced facilitation, or realignment of project activities in consultation with affected groups.

50. In recognition of the security-sensitive and politically fluid context in Somalia, particularly in the project's target districts, engagement strategies will be continuously reviewed and adapted to respond to changes in access, local governance, or community dynamics. As part of inception-phase activities, a targeted political economy analysis will be conducted across the three project landscapes, with a focus on power relations, institutional legitimacy, and social inclusion. This analysis will include a basic tenure and land access mapping exercise to identify formal and informal land use arrangements and potential risks of exclusion or conflict. The findings will inform both the operationalisation of this engagement framework and the refinement of project-level mitigation measures. The project's Stakeholder Engagement Plan and Livelihoods Action Framework will serve as the primary tools for ensuring these commitments are implemented in practice.

Planned stakeholder engagement activities

Institutional roles at federal and member state levels

51. Stakeholder engagement under the EARNSS project is shaped by a multi-level institutional framework involving federal, state, and district actors. The Sadar Development and Resilience Institute serves as the central coordinating body, supported by line ministries and subnational governments whose mandates influence participation in environmental management, climate adaptation, and local governance. The table below outlines institutions with relevance to stakeholder engagement, highlighting their roles and mandates in relation to the project's thematic and geographic scope.

Table 13: Institutions relevant for stakeholder engagement

Institution	Role in Stakeholder Engagement	Relevance to the Project
Sadar Development and Resilience Institute (Sadar)	Leads stakeholder engagement at national and local levels; coordinates with line ministries, district authorities, and communities; ensures that engagement outcomes inform project planning and implementation.	Executing Entity with responsibility for all outputs.
Ministry of Energy and	Provides technical input on water governance, catchment planning,	Supports implementation of catchment-based

Water Resources (MoEWR)	and hydrological modelling; may participate in consultations under Outputs 1.1 and 1.2.	planning and infrastructure under Component 1.
Ministry of Environment and Climate Change (MoECC)	Contributes to stakeholder engagement on environmental governance and climate resilience; supports coordination with national frameworks.	National coordination partner for climate-related activities under Component 3.
Hirshabelle State Authorities	Coordinate engagement at the state and district level for Beledweyne and Jowhar; liaise with district authorities and traditional structures.	Essential for engagement and validation of activities in Hirshabelle State.
Banadir Regional Administration (BRA)	Oversees stakeholder engagement in Afgooye district; facilitates coordination between the project team and subnational actors.	Key institutional partner for activities in the Afgooye area.
District Authorities (Beledweyne, Jowhar, Afgooye)	Lead community-level engagement; convene consultations; support inclusive participation and local oversight.	Critical actors for community outreach, grievance redress, and local implementation.
Community Committees (for example, agropastoral, water-user, and minority groups)	Support participatory planning processes under rural and urban Adaptation Management Plans; validate local priorities, represent community perspectives, monitor implementation, and provide a channel for grievances and feedback.	Established under Output 1.4; play a central role in ensuring inclusivity, local ownership, and accountability at the site level.

Stakeholder engagement activities by Activity

Activity	Engagement Action	Stakeholder Group(s)	Purpose of Engagement	Timeframe	Responsible Institution(s)
1.1.1	Focus-group discussions and interviews with ministries and academic institutions	MoECC, MoEWR, MoLFR, MoAI, MoPIED, City University of Mogadishu, FAO	Assess NbS capacity and hydrological knowledge gaps	Year 1	Project Management Unit (PMU), Ministry focal points
1.2.3	Validation workshops in Beledweyne, Jowhar and Afgooye	District authorities, local communities	Validate proposed adaptation plans for sub-catchments	Year 2	PMU, consultants
1.3.3	Validation workshops in Beledweyne, Jowhar and Afgooye	District authorities, local communities	Validate proposed adaptation plans for urban areas	Year 2	PMU, consultants
1.4.1	Participatory mapping and discussions with committees and government	Community committees, district-level government	Understand existing structures and build participation	Year 1	PMU, local facilitators
1.4.2	Workshops with agropastoral/water-user groups	Community committees (six total)	Train on planning and monitoring AMP implementation	Year 2	PMU, local facilitators
2.1.2	Training for community committees on water system management	Community committees, MoEWR	Ensure sustainable use of solar pumps and wells	Year 2	PMU, MoEWR
2.2.1	Training on nursery operation	Community committees	Enable local maintenance and propagation of planting material	Year 2	PMU, local extension agents
2.2.2	Collaboration on demo plots and reassessment	Agropastoral and pastoral committees	Demonstrate and iterate on rangeland management	Year 2	PMU, local facilitators
2.3.1	Tool distribution via community committees	Agricultural community committees	Equip communities to implement bund construction	Year 2	PMU, district offices
2.3.2	Training on bund maintenance	Community committees	Sustain soil bund structures over time	Year 3	PMU
2.4.2	Revegetation and site visits with committee members	Community committees	Support restoration and gather feedback on progress	Year 3	PMU, consultants
2.6.2	Community-led waste collection drives and drain visits	Community members, waste committees	Raise awareness on link between waste and flooding	Year 3	PMU, municipal authorities
3.1.1	Annual community consultations	Community members	Gather perceptions and feedback on project effectiveness	Years 2–4	PMU
3.2.1	Stakeholder interviews with policy makers	Federal, state, district government officials	Identify policy barriers to NbS integration	Year 2	PMU, legal/policy consultants
3.2.2	FGDs and interviews on incentives	Community members, NGOs, private sector, donors	Co-develop incentive mechanisms for NbS uptake	Year 2	PMU, policy team
3.2.3	Workshop presenting soil carbon scheme viability	Federal Government	Build support and gather feedback on business case	Year 3	PMU, consultants

3.2.4	Policy reform workshop in Mogadishu	Federal Government	Present consolidated policy reform package	Year 3	PMU
3.3.1	Community awareness events and media campaigns	General public, women and youth	Build public understanding and support for NbS	Years 2–4	PMU, communications partners
4.1.1	Presentation of stakeholder engagement and gender action plans	Ministerial representatives at national, state, district levels	Initiate and refine project governance instruments	Year 1	PMU

Information Disclosure

52. The EARNSS project will adopt a structured approach to information sharing to ensure that stakeholders at national, subnational, and community levels are adequately informed about the project's purpose, planned activities, and implementation progress. Information disclosure will be led by Sadar and supported by district authorities and local partners, with UNEP providing oversight for documents requiring public disclosure under the Adaptation Fund's policy.

Information Type, Formats and Language

53. Information shared with stakeholders will include:
- public summaries of the project and its key components;
- updates on implementation progress and any adjustments to planned activities;
- safeguards instruments, including the Environmental and Social Management Plan (ESMP), Stakeholder Engagement Plan (SEP), Grievance Redress Mechanism (GRM) protocol, and key site-level mitigation plans where relevant;
- consultation schedules and community meeting records; and
- contact details for local focal points and mechanisms for feedback or grievances.

54. All public-facing documents will be translated into Somali and made available in accessible, plain-language formats. Formal documents such as the ESMP and SEP will remain in English but will be accompanied by summaries for community use. Where appropriate, information will be shared both in writing (for example, posters, printed summaries and meeting handouts) and verbally through community briefings or meetings, particularly where literacy barriers exist.

Dissemination Channels

55. The following channels and actors will be responsible for delivering project information:
- Sadar will coordinate the preparation and dissemination of materials, including Somali-language summaries, and ensure timely sharing of key project documents at national and district levels.
- District authorities will convene public meetings, display materials in accessible locations (e.g. community halls, local government offices, schools), and support oral dissemination through trusted leaders.
- Community committees established under Component 1 will assist in sharing information at the village level and ensuring that marginalised groups — including women, IDPs, and minority clans — are adequately informed and consulted.
- UNEP will publish the ESMP and SEP on its institutional website in line with the Adaptation Fund's requirements.

56. Key instruments will be disclosed prior to the commencement of relevant activities. Project updates and engagement feedback will be shared regularly throughout implementation to maintain transparency and stakeholder trust.

Monitoring, Evaluation, and Oversight

Monitoring Framework and Indicators

57. Monitoring of stakeholder engagement under the EARNSS project will be integrated into the broader Monitoring and Evaluation (M&E) system managed by SADAR, with support from the PMU. The monitoring framework will track both the implementation of engagement activities and the quality of participation across stakeholder groups, with particular attention to inclusion, responsiveness, and the resolution of grievances.

Indicative engagement monitoring indicators include:
- Number of consultations conducted, disaggregated by location and stakeholder group (e.g. women, IDPs, ethnic minorities);
- Proportion of community committees with representation from marginalised groups;
- Number and nature of grievances received and resolved, including average time to resolution;
- Frequency of information disclosure activities (e.g. summary distribution, community briefings);
- Stakeholder satisfaction with engagement processes (qualitative feedback through periodic assessments or midline evaluations).

58. The PMU's M&E Officer will consolidate these indicators as part of regular reporting, with results used to inform adaptive improvements in engagement practices.

Oversight Responsibilities

59. Oversight of the SEP will be exercised at multiple levels:
- Sadar holds primary responsibility for executing stakeholder engagement activities, maintaining documentation, and ensuring that the SEP is implemented in alignment with project commitments.

- District authorities and community committees will provide direct support to monitor engagement processes at the local level, including grievance uptake, community meeting attendance, and equitable participation in planning activities.
- UNEP, as the Implementing Entity, will review engagement performance through periodic reporting, site visits where possible, and documentation reviews. UNEP will ensure that engagement outcomes are adequately integrated into project planning and risk management.

60. Any gaps in engagement or unanticipated issues raised by stakeholders will be addressed through corrective actions developed by the PMU and approved by the Project Steering Committee, in line with the project's adaptive management approach.

Annex 4: Environmental and Social Management Framework

List of Acronyms	
AF	Adaptation Fund
CBO	Community-Based Organisation
AMP	Adaptation Management Plan
EARNSS	Enhancing Adaptation and Resilience through Nature-based Solutions in Somalia
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMF	Environmental and Social Management Framework
ESP	Environmental and Social Policy
ESSF	Environmental, Social and Sustainability Framework (UNEP)
ESS	Environmental and Social Standards (UNEP)
FMS	Federal Member State
FPIC	Free, Prior and Informed Consent
GAP	Gender Action Plan
GRM	Grievance Redress Mechanism
IDP	Internally Displaced Person
M&E	Monitoring and Evaluation
MoECC	Ministry of Environment and Climate Change
MoPIED	Ministry of Planning, Investment and Economic Development
NbS	Nature-based Solutions
NRM	Natural Resource Management
PMU	Project Management Unit
SADAR	Somali Agency for Development and Resilience
SEP	Stakeholder Engagement Plan
SRM	Stakeholder Response Mechanism (UNEP)
UNEP	United Nations Environment Programme

Executive Summary

61. The Enhancing Adaptation and Resilience through Nature-based Solutions in Somalia (EARNSS) project is designed to reduce climate vulnerability and strengthen the adaptive capacity of communities in flood- and drought-prone areas of southern and central Somalia. Implemented by the United Nations Environment Programme (UNEP) and executed by the Somali Agency for the Development of Agro-Pastoralists and Reforestation (SADAR), the project targets three priority districts — Beledweyne, Jowhar and Afgooye — where communities face increasing exposure to climate-induced water stress, land degradation and ecosystem decline. The project is structured around four integrated components: institutional capacity building; deployment of nature-based and hybrid infrastructure; knowledge management; and policy support.

62. This Environmental and Social Management Framework (ESMF) has been prepared to ensure that the project's environmental and social risks are identified, mitigated and monitored in accordance with UNEP's Environmental, Social and Sustainability Framework (ESSF) and the Adaptation Fund's Environmental and Social Policy (ESP). As several activities involve Unspecified Sub-Projects (USPs) and site-level designs will be confirmed during implementation, the ESMF provides a flexible and precautionary safeguards system, including screening tools, management plans and institutional arrangements to ensure risks are addressed as project sites and activities are finalised.

63. The project has been classified as Category B (Moderate Risk) under the Adaptation Fund's risk classification system. This reflects the project's moderate potential for adverse environmental or social impacts, which are expected to be site-specific, reversible and readily mitigable. Key risk areas include access to land and potential displacement, environmental impacts from infrastructure works, exclusion of vulnerable groups from project benefits, labour and safety concerns, and the potential for conflict or misuse of resources in fragile contexts.

64. To address these risks, the ESMF outlines a set of mitigation strategies and safeguard instruments, including: a description on how USP related risks will be managed; participatory planning; an Environmental and Social Management and Monitoring Plan (ESMMP); and complementary instruments such as a Livelihoods Action Framework and Grievance Redress Mechanism (GRM). These tools are augmented by a project level Gender Action Plan (GAP) and an inclusive Stakeholder Engagement Plan (SEP) that is designed to support Free, Prior and Informed Consent Principles (FPIC). These instruments are intended to not only prevent harm, but also to enhance inclusion, transparency and resilience outcomes in line with the project's adaptation objectives.

65. Field-level consultations were undertaken in all three target districts to inform the development of this ESMF. These engagements included community leaders, women, youth, internally displaced persons and representatives of local institutions. Their inputs informed the risk analysis and have been integrated into the safeguards approach to ensure that

interventions are locally appropriate, equitable and conflict-sensitive.

66. Responsibilities for safeguards implementation are clearly distributed across UNEP, SADAR, Federal Member State institutions and community-level structures. The ESMF embeds safeguards considerations within implementation processes, linking risk management to capacity development and institutional strengthening. Monitoring, learning and adaptive management mechanisms are built into the safeguards framework to enable continuous oversight and course correction as needed throughout implementation.

67. The ESMF is a living document and will be updated as new information becomes available, including site-specific assessments, stakeholder feedback, and results from monitoring activities. It provides the foundation for ensuring that project implementation is environmentally and socially responsible, responsive to community priorities and fully aligned with both UNEP and Adaptation Fund safeguard requirements.

Introduction to the ESMF

68. This Environmental and Social Management Framework (ESMF) sets out the safeguards measures applicable to the Enhancing Adaptation and Resilience through Nature-based Solutions in Somalia (EARNSS) project, implemented by the United Nations Environment Programme (UNEP) with execution by the Somali Disaster Management Agency (SADAR). The ESMF outlines the framework for managing environmental and social risks arising from project activities, in line with the UNEP Environmental, Social and Sustainability Framework (ESSF) and the Environmental and Social Policy (ESP) of the Adaptation Fund.

69. The ESSF is UNEP's institutional safeguard system, comprising ten environmental and social standards and a set of procedural requirements for risk screening, assessment, stakeholder engagement, and monitoring. This ESMF has been developed to operationalise the ESSF in the context of the EARNSS project, ensuring that risks are systematically identified, mitigated and monitored throughout implementation.

70. The ESMF applies to field activities in Beledweyne, Jowhar and Afgooye districts, and will guide safeguards implementation throughout the project lifecycle. It provides a structured approach to safeguards management, particularly given that some interventions involve Unspecified Sub-Projects (USPs) and site-level design details will be confirmed during implementation. It is informed by a detailed Output-level risk analysis undertaken at the design stage with due consideration to contextual risk factors. As per this assessment and the application of UNEP's Safeguard Risk Identification Form (SRIF)[4], the proposed project is classified as Category B, indicating that anticipated risks are limited in scale, reversible and mitigable through standard measures.

71. The preparation of this ESMF drew on a combination of document review, field-level consultations, and contextual risk analysis. Project documentation, including the approved proposal and activity design notes, was reviewed alongside relevant policy frameworks and safeguard standards. Field visits were conducted in all three target districts — Beledweyne, Jowhar and Afgooye — where participatory consultations were held with community members, local authorities, women's groups, youth representatives and other stakeholders. These engagements informed the identification of priority concerns, potential impacts, and local dynamics relevant to safeguards implementation. The risk assessment was conducted in line with UNEP's SRIF, which supports a structured analysis of potential environmental and social risks in line with the ESSF.

72. This ESMF includes procedures for risk assessment mitigation, monitoring and oversight during implementation, including measures to address social inclusion, land access, community participation and grievance redress. It is a living document and will be updated as needed in response to site-level assessments, changes in activity scope or additional information emerging through field implementation.

Project Description

73. The EARNSS project aims to strengthen the resilience of rural and urban communities in flood- and drought-prone areas of southern and central Somalia through the planning, implementation, and institutionalisation of nature-based and hybrid adaptation measures. The project is implemented by UNEP and executed by the Somali Disaster Management Agency (SADAR), in coordination with Federal Member State authorities and local partners. It targets three districts—Beledweyne, Jowhar, and Afgooye—located within Hirshabelle and South West States, with site-level implementation adapted to prevailing access and stability conditions.

74. The project is structured around three interlinked components: (i) institutional capacity-building and participatory planning; (ii) implementation of nature-based and hybrid technologies to protect assets and livelihoods; and (iii) enabling environment for learning, replication, and policy integration. Activities span technical training, participatory planning, small-scale infrastructure, land restoration, and institutional reforms, with integrated strategies for gender equality, stakeholder engagement, and knowledge dissemination. This section provides a summary of each component, with emphasis on relevance to environmental and social safeguards.

[4] The Safeguard Risk Identification Form for the proposed project will be made available from UNEP upon request.

Component 1: Capacity building for the replication and upscaling of innovative NbS and hybrid technologies in Somalia

75. This component strengthens institutional, technical, and community capacities to design and implement nature-based and hybrid solutions for flood and drought adaptation. A multi-level capacity-building programme will be developed and delivered to federal, state, and district institutions. Protocols for NbS and hybrid measures will be tailored to Somalia's ecological and institutional context, and integrated into university curricula through collaboration with academic partners.

76. Planning processes will be anchored in technical assessments and cost-effectiveness analysis, leading to the development of six district-level Adaptation Management Plans (AMPs): three for sub-catchment and floodplain areas, and three for urban zones. These AMPs will guide infrastructure and restoration activities under Component 2. Inclusive validation workshops will be held to confirm priority sites and interventions.

77. Community engagement is central to this component. Six local committees—one rural and one urban per district—will be established or capacitated and trained on AMP planning, implementation, and monitoring. These structures are designed to promote inclusive governance, but safeguards oversight will be required to mitigate risks of exclusion, particularly for women, minority clans, and displaced households.

78. **Outputs:**

- Output 1.1: Capacity development programmes for flood and drought management, integrating innovative NbS and hybrid technologies, developed and delivered to institutional stakeholders.
- Output 1.2: Three Adaptation Management Plans in prioritised sub-catchment and floodplain area, with protocols for planning and implementing NbS and hybrid technologies for adaptation generated.
- Output 1.3: Three Adaptation Management Plans in prioritised urban areas, with protocols for planning and implementing urban green infrastructure technologies in flood-prone areas generated.
- Output 1.4: Six local community committees established or capacitated, and trained on participatory planning, implementation and monitoring of Adaptation Management Plans.

Component 2: Protection of productive assets and livelihoods through innovative and proven adaptation NbS and hybrid technologies

79. This component delivers tangible resilience benefits through the construction and rehabilitation of infrastructure, land restoration, and demonstration activities. In Beledweyne, six combined sand dams and V-shaped weirs will be constructed in five wadi catchments, each equipped with protected wells, solar pumps, elevated storage tanks, and gravity-fed distribution systems for domestic and livestock use.

80. Rangeland resilience will be strengthened through enrichment planting, silvopastoral practices, and climate-smart management over at least 4,000 ha, supported by local nurseries and pastoralist capacity-building. In Beledweyne, soil bunds will be constructed over 200 ha to reduce erosion and runoff.

81. In Jowhar and Afgooye, embankment restoration — including gabions and low-flow pipes — and revegetation of riverine zones (130 ha) will enhance flood retention and infiltration. Urban interventions will include 100 km of sustainable drainage systems (SUDs), such as ditches, detention basins and retention ponds across all three towns. Waste management will be promoted through training workshops for municipal staff and community-led demonstration drives.

82. This component carries direct environmental and social risks, including temporary land access impacts, construction-related disturbance, water safety concerns, and the need for inclusive benefit-sharing. All interventions will require screening and risk mitigation in line with UNEP's ESSF and the AF ESP.

83. **Outputs:**

- Output 2.1: Six combined V-shaped weirs and sand dams built and equipped with solar pumps, elevated storage tanks, and gravity distribution systems in Beledweyne.
- Output 2.2: Rangelands brought under climate smart management practices through community empowerment in the three target districts.
- Output 2.3: Soil bunds constructed to reduce soil erosion and water run-off at the watershed level in Beledweyne.
- Output 2.4: River embankments restored and of riverine areas revegetated or restored for the reinforcing of river embankments and retention and infiltration of flood water in Jowhar and Afgooye
- Output 2.5: Sustainable urban drainage systems (SUDs) improve urban drainage network.
- Output 2.6: Waste management and flood risk reduction demonstrated in urban neighbourhoods.

Component 3: Improved enabling environment for investment in the replication and upscaling of adaptation NbS and hybrid solutions in Somalia

84. This component supports monitoring, knowledge dissemination, and policy reform to facilitate the scaling of nature-based adaptation. Lessons learned and best practices from implementation will be documented, evaluated for cost-effectiveness and replicability, and shared with government stakeholders.

85. The policy and regulatory landscape will be reviewed to identify opportunities for integrating NbS and hybrid approaches. Recommendations will be developed for federal, state, and local authorities, including proposed reforms and community-level incentive mechanisms. A viability assessment and business case will also be prepared for a soil carbon credit scheme.

86. A gender-responsive public awareness strategy will be implemented to promote uptake and inclusion. This component anchors safeguards principles—including participation, gender equality, and transparency—within long-term governance and institutional frameworks.

87. **Outputs:**
- Output 3.1: Lessons learned and best practices codified and disseminated to promote investment in NbS.
- Output 3.2: Recommendations for policy reforms and incentive packages are available at federal, member state and local government levels to promote the development, replication and upscaling of NbS and hybrid measures.
- Output 3.3: Gender-responsive public awareness programmes developed and implemented.

Component 4: M&E and knowledge management

88. Component 4 supports the operationalisation of key project instruments related to environmental and social management, stakeholder engagement, gender equality, monitoring, evaluation, and knowledge management. This includes the implementation of the Stakeholder Engagement Plan, Gender Action Plan and Environmental and Social Management Framework, with a focus on ensuring compliance with safeguards requirements and the equitable and inclusive delivery of project benefits.

89. In parallel, the component supports the implementation of the Monitoring and Evaluation Plan and the Knowledge Management Plan, enabling the systematic tracking of project results and the structured documentation and sharing of knowledge generated through implementation. These processes will be coordinated across all three target districts and will feed into the overall project reporting and adaptive management framework.

90. **Outputs:**
- Output 4.1: Monitoring and evaluation and knowledge management plans.

Environmental and Social Context

Project Location and Geographic Scope

91. The project will be implemented in three districts in southern and central Somalia: Beledweyne and Jowhar in Hirshabelle State and Afgooye in South West State. These areas were identified due to their acute exposure to climate hazards — including flooding, drought and land degradation — and their relevance to national priorities for ecosystem-based adaptation and water resource management. All three lie within the broader Shabelle River basin, an ecologically and economically significant region supporting agropastoral livelihoods and dense rural-urban linkages.

92. Site selection within these districts is being guided by participatory planning processes, technical assessments of flood and drought risk and coordination with Federal Member State authorities and UN partners. However, the implementation of interventions will remain responsive to evolving conditions on the ground, including access, stability and local institutional presence. This ensures that project delivery remains practical and appropriately aligned with contextual realities, without compromising the strategic focus on the three priority districts.

Environmental and Social Baseline by Target Location

Beledweyne

Environmental and Geographic context

93. Beledweyne lies within the central floodplain of the Shabelle River in Hirshabelle State. The city is characterised by flat topography, semi-arid climatic conditions and high exposure to both seasonal floods and prolonged droughts. It receives highly variable rainfall across two main wet seasons (*Gu* and *Deyr*) and two dry seasons (*Jilaal* and *Hagaa*). In recent years, the intensity and irregularity of rainfall events have increased, contributing to more frequent and severe flood and drought cycles.

94. A defining feature of Beledweyne's landscape is its network of ephemeral watercourses (*wadis*), which serve as natural drainage channels during the rainy seasons. These wadis are critical for conveying floodwaters but have become increasingly degraded due to sedimentation, deforestation in upstream catchments, informal construction and unmanaged waste disposal. Urban encroachment into historic wadi paths and low-lying flood basins has exacerbated the risk of flash flooding and water stagnation, particularly in the southern and central parts of the city.

95. The municipality lacks a formal stormwater drainage system. As a result, wadi channels frequently overflow or become blocked during heavy rainfall, contributing to extensive flooding, especially when coinciding with Shabelle River overflows. These flood events often result in damage to housing, roads and agricultural land, and create secondary environmental health risks through water contamination and vector-borne disease outbreaks.

96. Land degradation is another significant challenge. Vegetation cover has declined markedly in peri-urban areas due to unsustainable fuelwood collection, overgrazing and poor land-use practices. Degraded rangelands have reduced the natural capacity to absorb rainfall and support livelihoods, while increasing downstream sedimentation. In combination with the effects of prolonged dry periods, this has intensified pressure on water sources and ecosystems.

Social and Institutional Context

97. Beledweyne has an estimated population exceeding 300,000, comprising host communities, internally displaced persons (IDPs), returnees and seasonal migrants. Displacement in the district has been driven by conflict, flooding and drought, resulting in the proliferation of informal settlements along the urban periphery and in flood-prone areas. Many IDP households face precarious tenure arrangements and have limited access to basic services, such as water supply, sanitation, drainage and solid waste collection. These vulnerabilities are especially acute in southern and central neighbourhoods, where informal expansion has outpaced municipal service provision.

98. Livelihoods in Beledweyne are primarily agropastoral, with residents dependent on a combination of rain-fed farming, livestock and small-scale trade. However, erratic rainfall and land degradation have reduced the reliability of traditional livelihood systems, particularly for displaced populations and marginalised groups. Women and youth are significantly affected by these constraints and play key roles in informal labour markets, including water fetching, food vending and petty trade. Urban unemployment and underemployment remain high, particularly among young men.

99. Governance in Beledweyne is shaped by a layered mix of municipal administration, traditional authority, and engagement by federal and state-level institutions. The Beledweyne Municipality has primary responsibility for urban planning and public services but faces chronic resource limitations. The Somali Disaster Resilience Institute (SADAR) maintains a technical presence in the district and plays a coordination role in resilience programming. A UN Area Coordinator is also based in the town, facilitating alignment between humanitarian, development and security actors. Despite these institutional presences, gaps in regulatory enforcement, overlapping mandates, and constrained operational budgets limit effective service delivery and limit effective service delivery, planning coordination, and the enforcement of environmental and social regulations.

100. Social dynamics in Beledweyne are complex and shaped by clan-based systems of land access, representation and dispute resolution. While traditional elders retain significant influence, formal engagement processes are often dominated by majority clan interests. Minority groups, including Somali Bantu communities, minority clans and IDPs experience entrenched barriers to land ownership, formal employment and participation in public decision-making. These communities tend to reside in the most hazard-prone areas and face discrimination in resource allocation and grievance resolution. In addition, gender-based exclusion is prevalent, with women underrepresented in local governance structures despite their prominent role in sustaining household-level adaptation.

101. Community committees and informal institutions are active in many parts of the municipality and are likely to serve as entry points for engagement in planning and implementation processes. However, their capacity and inclusiveness vary widely, and some remain closely aligned with dominant clan structures. These dynamics will need to be considered in the design of engagement processes during implementation to ensure equitable participation and avoid reinforcing existing patterns of exclusion.

Jowhar

Environmental and Geographic Context

102. Jowhar is located approximately 90 km north of Mogadishu, within the Shabelle River basin, and serves as the administrative capital of Hirshabelle State. The district has a low-lying topography, with expansive floodplains and seasonal wetlands. It is bisected by riverine and topographic depressions that become saturated during the *Gu* and *Deyr* rainy seasons, resulting in widespread flooding. Similarly to Beledweyne, Jowhar is highly sensitive to seasonal variations in rainfall, with periodic droughts also impacting agricultural productivity and water availability.

103. Inadequate drainage infrastructure, especially in urban areas, has led to water stagnation and the expansion of flood-prone zones. Settlements in informal and peri-urban areas frequently experience overland flooding, particularly where natural drainage pathways have been obstructed. Solid waste disposal in drainage channels further compounds these problems, leading to blockages and waterlogging after even moderate rainfall.

104. The district's environmental vulnerability is further exacerbated by land degradation and the depletion of vegetation cover. In rural and peri-urban zones, deforestation for charcoal production and fuelwood has significantly reduced the land's capacity to retain water and resist erosion. Despite the presence of potentially productive lowlands, lack of investment in sustainable land management has led to sedimentation and reduced agricultural resilience.

Social and Institutional Context

105. Jowhar hosts a diverse and growing population, including long-settled communities, returnees and displaced households who have arrived in waves due to insecurity and climate-related shocks in other parts of Hirshabelle and beyond. Informal settlements have expanded on the outskirts of the town, particularly in areas where land tenure is unclear or insecure. Basic services such as clean water, sanitation and solid waste management are often limited or absent in these communities, increasing their vulnerability to both flooding and disease outbreaks.

106. The district's economy is primarily agropastoral, with seasonal farming along the riverbanks complemented by livestock herding in the surrounding drylands. However, recurrent flooding disrupts cropping cycles and access to markets, while periodic droughts reduce pasture quality and water availability. These stresses contribute to food insecurity and increased reliance on humanitarian assistance.

107. Governance in Jowhar is shaped by a mix of municipal authorities, Hirshabelle state actors, traditional leadership structures, and humanitarian and development agencies. While formal district-level institutions exist, their capacity to manage planning, service delivery and conflict mediation remains limited. Coordination is further complicated by overlapping mandates between state and federal actors and weak enforcement of land-use regulations.

108. Clan dynamics play a central role in shaping access to land, services, and representation in community and political processes. While the dominant clans maintain strong influence over decision-making and land allocation, minority groups — including Somali Bantu communities and historically marginalised lineages — often face systemic exclusion. Women and youth are also underrepresented in governance and planning forums, despite their active role in household economies and informal institutions.

109. Several community committees exist across different neighbourhoods, often organised around service provision, dispute resolution or resource management. These vary in effectiveness and inclusivity. While some are recognised by local authorities and aid agencies, others operate informally and remain disconnected from formal planning processes. Engagement during implementation will need to be carefully structured to support inclusive participation and avoid reinforcing unequal power dynamics.

Afgooye

Environmental and Geographic Context

110. Afgooye is located approximately 30 km west of Mogadishu, along the banks of the Shabelle River, within South West State. The district is part of the lower Shabelle basin and has historically served as an important agricultural and trade hub due to its fertile alluvial soils and relatively abundant water resources. Its proximity to Mogadishu has also contributed to accelerated urban expansion, resulting in a complex peri-urban landscape with mixed rural-urban characteristics.

111. The area faces high exposure to climate-induced hazards, particularly flooding and drought. Seasonal floods occur during the Gu and Deyr rains and are exacerbated by poor drainage, siltation of water channels and encroachment into natural floodplains. Several parts of Afgooye town and its surrounding villages lie within low-lying flood-prone zones, with little to no engineered drainage systems. In recent years, the impact of flooding has intensified due to deforestation, sediment deposition and unregulated land conversion.

112. Drought conditions also pose significant environmental risks. Prolonged dry periods, coupled with increasing water demand from urban and agricultural users, have led to pressure on shallow aquifers and natural topographic depressions. These depressions (locally referred to as "desheks") have traditionally served as water retention and infiltration areas but are increasingly degraded due to land clearing, compaction and sedimentation.

113. The surrounding rangelands are under stress from overgrazing and land degradation, contributing to a decline in vegetation cover and soil fertility. Fuelwood collection, charcoal production and the conversion of land for informal settlements or agriculture are key drivers of environmental change. These pressures have reduced the natural absorptive capacity of the landscape and increased the speed and severity of runoff during rains.

114. Afgooye's location at the interface between rural and urban zones has resulted in diverse land use pressures and a fragmented landscape, where degraded rangelands, desheks and informal settlements coexist with irrigated agriculture and natural flood retention areas.

Social and Institutional Context

115. Afgooye hosts a mixed population of long-term residents, recently displaced households and returnees from Mogadishu and surrounding conflict-affected areas. Informal settlements have expanded around the urban core and along the main road corridor, driven by population growth, insecurity elsewhere and the search for economic opportunity. Many of these informal settlements lack tenure security and are located in areas prone to flooding or environmental degradation. Access to water, sanitation and solid waste management services remains limited, particularly for displaced and low-income households.

116. The district economy is diverse, with residents engaging in agriculture, livestock herding, petty trade and wage labour. Urban expansion and increasing land competition have disrupted traditional livelihood systems and contributed to land disputes between host communities, new arrivals and local authorities. Women play a central role in both domestic livelihoods and informal markets, but face barriers to formal land ownership and public representation. Youth unemployment is high, contributing to social tensions and economic vulnerability.

117. Governance in Afgooye is shaped by interactions between local authorities, South West State institutions, traditional elders and intermittent federal engagement. The town's proximity to Mogadishu places it along a strategic axis, which has historically

been subject to insecurity, including armed group activity, political contestation and displacement. Although formal governance structures are in place, their authority can be undermined by informal systems and fluctuating access due to security dynamics. Coordination among development actors is often constrained by these same factors, with access and operational continuity varying by season and local risk conditions.

118. Somali Bantu communities, while numerically significant in Afgooye and surrounding settlements, remain structurally excluded from land ownership, public decision-making and equitable service delivery. Despite their critical role in agriculture and labour, they often reside in underserved areas with insecure tenure and high exposure to flood and conflict risk. Tensions over land, access to assistance and political representation are compounded by broader clan dynamics and security pressures linked to the town's strategic location.

119. While some community committees are active in managing water points, coordinating waste collection or resolving disputes, their effectiveness and inclusiveness vary considerably. For this reason, engagement during implementation will need to be structured in a way that supports broad-based participation, particularly for women, youth and minority groups, while aligning with existing informal institutions and conflict-sensitive approaches.

Contextual Risk Factors and Systemic Constraints Across All Project Locations

Fragility and Conflict Sensitivity

120. All three target districts — Beledweyne, Jowhar and Afgooye — are affected by overlapping drivers of fragility, including long-standing conflict, political fragmentation, unresolved land tenure issues and environmental stress. While the specific configurations vary across sites, insecurity and political volatility remain salient features of the operating context in each location.

121. In Beledweyne, periods of relative calm have been punctuated by inter-clan tensions, armed group activity in surrounding rural areas and unresolved disputes over political representation at both district and state levels. The location's strategic importance and proximity to the Ethiopian border have made it a frequent flashpoint for administrative competition, contributing to delays in service delivery and contested local authority structures.

122. In Jowhar, instability is shaped by seasonal flooding, humanitarian inflows and contestation over land and leadership. While the district is the capital of Hirshabelle State, its political environment is influenced by shifting alliances between state and clan-based actors. Reports from community consultations indicate that displacement and land access disputes are common, especially in peri-urban areas where formal tenure systems are weak.

123. Afgooye's location along the Mogadishu corridor increases its strategic and political sensitivity. The town has historically served as a conduit for population displacement and armed group movement. While security has improved in recent years, stakeholders identified risks of sudden access limitations, overlapping claims to land, and tensions between host and displaced populations. Somali Bantu communities — who constitute a substantial proportion of the district population — are particularly vulnerable to marginalisation and exclusion from assistance and land claims processes.

124. Across all locations, clan-based governance plays a central role in shaping access to land, services and dispute resolution mechanisms. These systems may enable or obstruct project activities depending on how they are engaged. Safeguards implementation will therefore require continuous assessment of local power dynamics and structured engagement with both formal and informal institutions to ensure conflict sensitivity.

125. The project's approach to site-level planning will remain adaptive, informed by participatory planning, technical assessments of flood and drought risk, and real-time coordination with Federal Member State authorities, community structures and UN partners. This flexibility is essential to ensure that implementation remains feasible, inclusive and conflict-aware across variable local conditions.

Political and Institutional Dynamics

126. The institutional landscape across the three target districts is shaped by overlapping mandates between federal, state and district authorities, weak regulatory enforcement and the coexistence of formal and informal governance systems. These structural features present challenges for coordination, planning and the consistent implementation of adaptation measures.

127. At the national level, the Ministry of Environment and Climate Change (MoECC) holds the mandate for environmental governance and climate adaptation. However, implementation authority and operational control often reside with Federal Member State (FMS) ministries, whose capacity and reach vary considerably. In Hirshabelle and South West States, limited fiscal resources, staff turnover and weak institutional linkages to the federal government constrain the ability of line ministries to lead coordinated responses. In many cases, local authorities operate with parallel structures supported by humanitarian or development actors, leading to fragmented planning and implementation pathways.

128. At the district level, governance is deeply embedded in clan-based power structures, where formal authority often overlaps with, or is subordinated to, traditional leadership. In Beledweyne, Jowhar and Afgooye, access to administrative roles, land allocation processes and resource flows are frequently mediated through dominant clan networks. Internecine rivalries — particularly among sub-clans and political factions within the same clan family — can destabilise local governance, block

consensus and lead to contested legitimacy. These dynamics are further complicated by the presence of returnees, displaced populations and marginalised groups, all of whom may find themselves excluded from formal decision-making or service provision.

129. While formal institutions for urban planning and land administration exist in some districts, their functionality is frequently undermined by these competing claims to authority and by fluctuating allegiances between actors. The risk of elite capture — wherein dominant clan interests use formal structures to reinforce their power — remains high in the absence of robust oversight or inclusive governance safeguards.

130. Traditional governance systems, including elders and religious leaders, continue to play a key role in mediating land disputes, organising collective action and resolving conflicts. These systems are often more trusted than formal structures, but they are not uniformly representative. In many cases, they reflect existing hierarchies that exclude women, youth and minority clans from meaningful participation.

131. UN coordination mechanisms and implementing partners play a critical role in bridging these institutional gaps. In Beledweyne and Jowhar, the presence of UN area coordinators provides a platform for aligning project activities with peacebuilding and development efforts, though operational consistency is still dependent on evolving security and political conditions.

132. Overall, these political and institutional dynamics necessitate an implementation approach that is not only multi-scalar and adaptive, but also consciously attuned to local clan configurations and the risks of internecine contestation. Safeguards and engagement strategies will need to anticipate these dynamics and build in flexibility to navigate contested spaces and shifting authority structures.

Data Limitations and Analytical Constraints

133. The preparation of this ESMF has drawn upon a range of available primary and secondary sources, including stakeholder consultation reports, municipal planning documents and project-specific assessments. Nonetheless, significant limitations remain in the availability, quality and disaggregation of data across all three target districts.

134. The operating context in Somalia is highly fluid, shaped by a long history of state fragility, conflict and displacement. Population movements — whether due to insecurity, seasonal migration or livelihood shifts — have contributed to constant fluctuations in settlement patterns and service needs. These dynamics complicate efforts to produce accurate, up-to-date baselines and frequently result in mismatches between administrative records and conditions on the ground. Data is often incomplete, outdated or geographically uneven, particularly in areas with limited or inconsistent access for government or development actors.

135. Quantitative environmental data — such as hydrological baselines, sedimentation trends and land degradation metrics — remains fragmented or extrapolated from adjacent areas. Where modelling has been conducted, it is typically limited to small catchments or specific infrastructure sites. Comprehensive datasets for groundwater dynamics, rainfall variability or ecological change remain scarce and are often based on historical trends rather than real-time observation.

136. Social and demographic data is similarly constrained. Disaggregated data by gender, age, displacement status and clan affiliation is either unavailable or inconsistently collected. Institutional arrangements for data aggregation — such as state-level statistics offices or line ministry registries — have been weakened by years of political instability and chronic underinvestment. As a result, programme design often depends on qualitative insights from community consultations, implementing partners and informal networks. While these sources are valuable, they cannot fully substitute for systematic data collection or verification.

137. Moreover, political sensitivities around clan identity, land ownership and subnational authority further restrict open data collection in many areas. In some instances, respondents may be unwilling to share detailed information, particularly when questions relate to land tenure, exclusion or past grievances. These constraints affect not only baseline diagnostics but also the monitoring and evaluation of project impacts over time.

138. Given these limitations, the project is adopting an adaptive implementation model, with planning processes that can be adjusted as better information becomes available. Activities such as site selection, risk screening and stakeholder engagement are designed to be iterative and responsive to evolving conditions. Future assessments under the project will seek to close priority data gaps, support more equitable targeting and strengthen safeguards oversight through evidence-based learning.

Legal, Policy and Institutional Framework

National Policies and Legislation

139. Somalia's national legal framework related to environmental and natural resource governance has evolved significantly in recent years, although gaps remain in enforcement and institutional coordination. The following laws and policies are relevant to the proposed interventions under this project, especially those concerning water resource management, land use, environmental protection and urban resilience. While some of these are formally adopted, others remain in draft form or under

revision. Implementation of many instruments is constrained by limited institutional capacity, overlapping mandates and the ongoing decentralisation process.

Table14. Relevant National Laws and Policies

Law/Policy	Summary	Relevance to the Project
Environmental Protection and Management Act (2024)	Establishes the overarching legal framework for sustainable environmental protection and resource management in Somalia. Affirms the right to a clean and healthy environment, defines institutional roles, mandates ESIAs and regulates pollution, biodiversity and climate resilience.	Provides the legal foundation for all safeguards compliance. Informs ESIA obligations, institutional responsibilities, environmental audits and alignment with international treaties.
ESIA Regulations (2024)	Operationalises environmental and social assessment procedures for development projects. Defines project categories (Type A and B), mandates ESIA or Project Briefs, and requires SESAs for larger plans and programmes. Includes enforcement, public disclosure and certified auditor provisions.	While it is unlikely that infrastructure USPs (V-shaped dams) will qualify as Type A and undergo a full ESIA as per national regulations, a project brief will be required at minimum. Planning processes are at a smaller scale and will not trigger the requirements for a SESA.
National Environmental Policy (2015)	Sets national principles for sustainable resource management and environmental governance. Emphasises inter-sectoral integration, public participation and environmental education.	Supports participatory planning and sustainability approaches embedded in catchment restoration and urban NbS activities.
Draft National Gender Policy (2018)	Sets out a 10-year strategic framework to advance gender equality across sectors such as health, education, governance and economic participation. Promotes legal reform, gender-responsive planning and alignment with CEDAW and UNSCR 1325. Non-binding and lacks enforcement mechanisms.	Provides national policy direction on gender equality and women's empowerment. While not legally enforceable, the policy supports project objectives related to inclusive participation, gender-responsive planning and benefit-sharing.
National Water Resources Policy (2021)	Provides a framework for integrated water resources management (IWRM). Emphasises equitable water use for domestic, pastoral and agricultural needs, with consideration of climate risks.	Directly informs project activities related to flood control, water infrastructure and sustainable water use.
National Climate Change Policy (2020)	Establishes Somalia's adaptation and mitigation priorities. Identifies drought and flood risks, and promotes ecosystem-based adaptation, early warning systems and climate-resilient development.	Aligns with project objectives around NbS, risk reduction infrastructure and climate-informed planning.
Disaster Risk Reduction Strategy (2019)	Provides a national framework for disaster preparedness and response. Emphasises coordination, risk knowledge and resilience-building at all levels.	Relevant to infrastructure and planning components aimed at mitigating flood risk and enhancing local resilience.
National Biodiversity Strategy and Action Plan (NBSAP) (2015)	Somalia's commitment under the CBD. Focuses on sustainable land use, conservation and ecosystem restoration, particularly in drylands and rangelands.	Provides strategic backing for reforestation, rangeland management and restoration activities under Component 2.

International Agreements and Commitments

140. Somalia is party to a number of international environmental, human rights and development agreements that shape the policy landscape for climate adaptation, natural resource management and social inclusion. These commitments are particularly relevant to the safeguard obligations under both the UNEP ESSF and the Adaptation Fund ESP. The following international agreements are particularly pertinent to the present project:

Table 15. Relevant International Agreements and Conventions

Agreement	Relevance to the Project
United Nations Framework Convention on Climate Change (UNFCCC)	Somalia ratified the UNFCCC in 2009 and submitted its updated Nationally Determined Contribution (NDC) in 2021. The Convention underpins national commitments to climate change adaptation, including the promotion of ecosystem-based and nature-based solutions. The project supports national adaptation commitments through on-the-ground implementation of nature-based solutions for flood and drought management in three climate-vulnerable districts.
Paris Agreement (2015)	Reinforces Somalia's obligations to enhance adaptation efforts and strengthen climate resilience. The project contributes directly to Somalia's NDC goals by restoring ecosystems, improving local adaptive capacity, and strengthening community-level resilience to climate hazards, in line with Article 7 commitments on adaptation.
United Nations Convention to Combat Desertification (UNCCD)	Supports sustainable land management and combatting land degradation. Through rangeland restoration, soil conservation and catchment-based water planning, the project contributes to Somalia's land degradation neutrality targets and supports sustainable land and water management in drought-affected areas.
Convention on Biological Diversity (CBD)	Somalia's NBSAP (2015) aligns with the CBD's objectives on biodiversity conservation, sustainable use and benefit-sharing. The project contributes to the objectives of the CBD by restoring degraded ecosystems, enhancing biodiversity in floodplain and rangeland areas, and supporting community-based conservation of natural resources.
Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)	Somalia acceded to CEDAW in 1985. The project is required to uphold non-discrimination and promote gender equality in accordance with international human rights standards and will apply a gender-responsive approach, including targeted engagement of women, safeguards to address gender-

	based exclusion, and a Gender Action Plan to ensure equitable participation and access to benefits.
Convention on the Rights of the Child (CRC)	Ratified in 2015, the CRC calls for child-sensitive development interventions. Project activities such as improving flood protection, enhancing access to clean water, and reducing exposure to environmental hazards directly contribute to safer, healthier living conditions for children and youth in target communities.
International Covenant on Economic, Social and Cultural Rights (ICESCR)	Protects the right to an adequate standard of living, including water, food and housing. By improving access to water, protecting productive land, and supporting inclusive and sustainable livelihoods, the project upholds rights to an adequate standard of living and supports progressive realisation of economic and social rights in vulnerable areas.

UNEP Environmental, Social and Sustainability Framework (ESSF)

141. As the Implementing Entity for this project, UNEP is mandated to apply its ESSF to ensure that activities are designed and implemented in a manner that avoids harm to people and the environment, promotes sustainability and enhances positive outcomes.

142. The ESSF outlines mandatory procedures for environmental and social screening, risk classification, stakeholder engagement, mitigation planning and safeguards monitoring. These are implemented through UNEP's Environmental and Social Management System (ESMS), which defines the operational tools and review processes used throughout the project cycle. All projects undergo review by UNEP's Project Review Committee (PRC) and are subject to internal safeguards quality assurance prior to approval. The UNEP Safeguards Standards and their purpose are defined below:

Table 16. UNEP Environmental and Social Safeguards Standards

UNEP Safeguard Standard	Summary Description
Standard 1: Biodiversity, Ecosystems and Sustainable Natural Resource Management	Ensures the protection and sustainable management of biodiversity, ecosystems and living natural resources, with attention to critical habitats and ecosystem services.
Standard 2: Climate Change and Disaster Risks	Requires assessment of climate change risks and promotes resilience through adaptation and disaster risk reduction measures.
Standard 3: Pollution Prevention and Resource Efficiency	Aims to minimise pollution and promote efficient use of energy, water and raw materials to reduce environmental harm.
Standard 4: Community Health, Safety and Security	Ensures that projects do not adversely affect the health, safety and security of affected communities, particularly vulnerable groups.
Standard 5: Cultural Heritage	Protects tangible and intangible cultural heritage from adverse impacts and requires engagement with communities on heritage values.
Standard 6: Displacement and Involuntary Resettlement	Seeks to avoid or minimise physical or economic displacement and ensure fair compensation and restoration of livelihoods when displacement is unavoidable.
Standard 7: Indigenous Peoples	Requires respect for the rights, dignity and cultural values of Indigenous Peoples, including the application of Free, Prior and Informed Consent (FPIC) when relevant.
Standard 8: Labour and Working Conditions	Promotes fair treatment, non-discrimination, and safe and healthy working conditions, including protections for contracted and community workers.

143. In addition to risk assessment and management, the ESSF sets requirements for stakeholder engagement and information disclosure, ensuring that consultations are inclusive, sustained and culturally appropriate, and that safeguards documentation is made publicly accessible in relevant languages. Projects must also establish a grievance mechanism that is transparent and accessible to affected people. This is complemented by UNEP's institutional-level grievance and accountability functions, which provide additional oversight and remedy pathways.

144. UNEP retains overall responsibility for ensuring safeguards compliance throughout implementation, including monitoring, adaptive management and periodic reporting in line with the requirements of both the ESSF and the Adaptation Fund.

Adaptation Fund Environmental and Social Policy

145. As the financing entity for this project, the Adaptation Fund requires that all projects comply with its Environmental and Social Policy (ESP). The ESP ensures that activities avoid environmental and social harm, promote sustainable development, uphold human rights and provide equitable access to project benefits — especially for vulnerable and marginalised groups.

146. The ESP is structured around 15 environmental and social principles that guide the design, assessment and implementation of all Adaptation Fund-supported interventions as summarised below:

Table 17. Adaptation Fund Environmental and Social Principles

Principle	Summary
1. Compliance with the Law	Ensure compliance with all relevant national and international laws, including permitting, environmental approvals and sector-specific regulations. The project must demonstrate current status, steps taken and ongoing plans to ensure legal conformity.
2. Access and Equity	Ensure fair, inclusive, and impartial access to project benefits, and prevent obstruction of access to essential services such as

	water, health care, education, housing, land or employment. Avoid exacerbating existing social inequities, particularly for marginalised groups.
3. Marginalised and Vulnerable Groups	Avoid disproportionate adverse impacts on groups facing structural exclusion or diminished coping capacity. Includes women, children, the elderly, Indigenous Peoples, displaced persons, persons with disabilities and other at-risk groups. Projects must assess, mitigate and monitor risks specific to these groups.
4. Human Rights	Respect and, where applicable, promote international human rights standards. Projects must not contribute to human rights violations. Risk screening should consider national human rights contexts and stakeholder consultations must address relevant concerns.
5. Gender Equality and Women's Empowerment	Ensure equal participation and benefits for women and men. Projects must address gender-based constraints and avoid reinforcing inequalities. Gender analysis, inclusive consultation and targeted measures are required to promote empowerment and fair outcomes.
6. Core Labour Rights	Uphold ILO core labour standards: freedom of association, elimination of forced and child labour, and non-discrimination in employment. These standards apply regardless of host country ratification. Contractors and executing entities must also adhere to these obligations.
7. Indigenous Peoples	Avoid activities inconsistent with Indigenous Peoples' rights. Ensure Free, Prior and Informed Consent (FPIC), culturally appropriate consultation and documentation of agreement. Respect UNDRIP and relevant instruments and ensure benefit-sharing and participation.
8. Involuntary Resettlement	Minimise or avoid physical and economic displacement. Where resettlement is unavoidable, ensure due process: consultation, compensation at full replacement cost, resettlement alternatives and access to grievance mechanisms.
9. Protection of Natural Habitats	Prevent unjustified conversion or degradation of legally protected, proposed or culturally recognised natural habitats. Identify all habitats of ecological importance and apply the precautionary principle where information is limited.
10. Conservation of Biological Diversity	Avoid significant or unjustified biodiversity loss, including ecosystems, species and genetic diversity. Prevent introduction of invasive species and use mitigation hierarchies where impacts are unavoidable.
11. Climate Change	Avoid significant or unjustified increases in greenhouse gas emissions or other climate drivers. Projects in relevant sectors must quantify GHGs; others must assess risks qualitatively. Consider impacts on carbon sinks and sequestration.
12. Pollution Prevention and Resource Efficiency	Minimise use of energy, water and raw materials. Prevent waste and pollution by applying international standards. Where needed, develop waste and pollution management plans and include monitoring and reporting requirements.
13. Public Health	Prevent significant negative impacts on public health by assessing impacts across a wide range of determinants. Apply WHO-compliant screening or impact assessment tools, especially where vulnerable groups may be affected.
14. Physical and Cultural Heritage	Avoid alteration, damage or permanent loss of heritage sites or features. Ensure continued community access and apply mitigation where sites are present. Covers locally, nationally and internationally recognised cultural values.
15. Lands and Soil Conservation	Promote soil conservation and avoid degradation of productive lands or those with important ecosystem functions. Identify and mitigate risks from erosion, contamination or misuse of fragile soils and ecologically sensitive land areas.

147. In addition to the ESP, the Adaptation Fund applies a dedicated Gender Policy, which requires projects to identify and address gender-based inequalities. Projects must ensure that women and men have equal opportunities to participate in and benefit from activities, with gender considerations mainstreamed across all stages of the project.

148. The Fund also requires the establishment and operation of a project-level grievance mechanism that is transparent, culturally appropriate and accessible to affected people. This mechanism must be supported by the Implementing Entity and be able to respond to complaints in a timely and impartial manner.

149. UNEP, as the Implementing Entity, is responsible for ensuring that the project complies with both the ESP and the Gender Policy, and for reporting on safeguards performance to the Adaptation Fund. These requirements complement and reinforce the UNEP ESSF, which governs operational safeguards compliance during implementation.

Comparative Analysis of Applicable Safeguards Standards

150. This section presents a comparative analysis of the environmental and social standards set out in the ESP, the ESSF, and relevant Somali national legislation. Its purpose is to determine which standards will govern implementation, based on the principle of applying the most stringent provisions where overlaps exist.

151. While the ESP defines the minimum safeguard requirements for the project, the ESSF serves as the operational framework through which those obligations are applied (Table 18). Somalia's national legal framework includes several recently updated environmental instruments, though broader safeguards legislation remains limited in scope and enforcement. In cases where national law is absent, incomplete, or not practically enforceable, the ESSF and ESP will prevail. The comparative table below examines each ESP principle alongside corresponding provisions in the ESSF and Somali legislation. The final column confirms which standard or combination of standards will be applied during project implementation.

Table 18. Comparison of AF ESP Principles, UNEP ESSF Provisions and Somali National Legislation

AF ESP Principle	UNEP ESSF Alignment	Relevant Somali Law or Policy	Standard or Approach to Be Applied
1. Compliance with the Law: Ensure compliance with all relevant national and international laws.	All ESSF safeguard standards require legal compliance. Site-level screening and due diligence procedures verify conformity with national laws. This is reinforced by the programming principles of **accountability** and	The **Environmental Protection and Management Act (2024)** and **Environmental Impact Assessment Regulations (2024)** require screening and permitting for eligible projects. Implementation capacity is limited.	Legal compliance will be ensured through UNEP's safeguards process. **Specifically, the project will comply with Somalia's ESIA Regulations (2024) for any infrastructure activities that trigger formal review.**

	sustainability.		Where enforcement is weak, UNEP standards will prevail.
2. Access and Equity: Ensure inclusive and impartial access to benefits; avoid reinforcing exclusion.	Equity and inclusion are applied across the ESSF through safeguard standards such as **SS4 (Community Health, Safety and Security)** and **SS7 (Indigenous Peoples)**. Also grounded in the programming principles of **leave no one behind** and **human rights**.	The **Provisional Constitution (2012)** affirms equality before the law (Article 11), but no enforceable protections or institutional mechanisms exist to guarantee equitable access to services or benefits.	UNEP safeguard procedures will ensure inclusive targeting, non-discrimination, and equitable access. ESP Principle 2 is fully addressed through the application of ESSF screening, design, and monitoring tools.
3. Marginalised and Vulnerable Groups: Prevent disproportionate harm and ensure inclusion in decision-making.	Addressed through **SS7 (Indigenous Peoples)** and cross-cutting programming principles of **leave no one behind** and **human rights**. Screening, participatory planning and inclusive benefit-sharing are required.	Somali law does not define vulnerable groups for safeguards purposes. Customary systems may reinforce exclusion based on clan, displacement, or minority status.	**SS7 will be applied to ensure that risks to vulnerable or marginalised groups are identified and mitigated.** ESP Principle 3 is fully addressed through inclusive safeguards and community-level engagement.
4. Human Rights: Respect international human rights standards and avoid contributing to violations.	All ESSF safeguard standards are underpinned by a **human rights-based approach**, and the principle of respect for rights is embedded in screening, stakeholder engagement, and grievance redress mechanisms.	The **Provisional Constitution (2012)** guarantees core civil, political and economic rights, but enforcement is limited and highly variable. No national human rights institution is operational.	Human rights protections will be implemented through ESSF safeguards and participatory processes. ESP Principle 4 will be addressed through due diligence, stakeholder engagement, and responsive grievance mechanisms.
5. Gender Equality and Women's Empowerment: Ensure equal participation and address gender-based barriers.	UNEP does not have a dedicated gender safeguard standard, but gender equality is one of the five **Programming Principles**, to be integrated across relevant standards (e.g. **SS6, SS7, SS8**). A Gender Action Plan is required.	The **Draft National Gender Policy (2018)** promotes gender mainstreaming across sectors and alignment with CEDAW and UNSCR 1325. However, it is non-binding and lacks legal enforcement.	The project will apply UNEP's programming principle on gender equality across all applicable safeguard standards. **A Gender Action Plan has been prepared and will guide gender-responsive implementation.** ESP Principle 5 will be fully addressed through safeguards procedures.
6. Core Labour Rights: Uphold ILO core labour standards: no forced or child labour, freedom of association, non-discrimination.	Addressed through **SS8: Labour and Working Conditions**, which requires alignment with ILO core conventions, protection of informal workers, grievance access, and occupational health and safety.	The **Somali Labour Code (1972)** remains the formal legal framework. A **revised Labour Code (2019)** was developed to strengthen provisions on trade union rights, minimum working age, non-discrimination, and workplace safety. However, the revised code has not yet been enacted, and enforcement remains limited.	**SS8 will be applied in full.** ESP Principle 6 reinforces these obligations. Labour conditions, grievance access and child labour prohibition will be implemented through safeguards and contractual obligations.
7. Indigenous Peoples: Respect FPIC, cultural identity, participation and benefit-sharing.	Addressed through **SS7: Indigenous Peoples**, which applies where groups meet criteria related to identity, vulnerability or attachment to land. Requires FPIC, culturally appropriate engagement and inclusion in benefit-sharing.	There is **no legal recognition of Indigenous Peoples** in Somalia. However, marginalised groups and minority clans face exclusion in many governance processes. No FPIC or group-specific safeguards exist.	**SS7 will be applied**, in alignment with ESP Principle 7. Screening and participatory planning will identify marginalised groups and apply FPIC and inclusion measures as required.
8. Involuntary Resettlement: Minimise displacement; ensure compensation, consultation and livelihood restoration.	Addressed through **SS6: Displacement and Involuntary Resettlement**, which prohibits forced resettlement and requires compensation at full replacement cost, meaningful consultation and livelihood restoration.	No national law exists governing involuntary resettlement. **Customary land governance** dominates, and there are no statutory provisions for land acquisition, compensation or livelihood restoration.	**SS6 will govern all land access and displacement risks.** Where land is required, voluntary access protocols and livelihood safeguards will be applied. ESP Principle 8 fully aligns.
9. Protection of Natural Habitats: Avoid unjustified conversion or degradation of protected or sensitive ecosystems.	Covered under **SS1: Biodiversity, Ecosystems and Sustainable Natural Resource Management**, which requires the mitigation hierarchy, protection of critical habitat, and conservation of ecosystem services.	The **Environmental Protection and Management Act (2024)** includes provisions for environmental permitting and habitat protection, but no ecosystem classification or critical habitat mapping system is in place.	**SS1 will be applied**, with critical habitat screening and site-level mitigation. ESP Principle 9 complements this. National permitting will be observed where functioning.
10. Conservation of Biological Diversity: Prevent biodiversity loss, including species, habitats and genetic diversity.	Also addressed under **SS1**, which requires biodiversity baseline assessment, avoidance of invasive species, and protection of ecologically significant areas.	Somalia's **National Biodiversity Strategy and Action Plan (2015)** reflects CBD objectives, but lacks legal status or implementing legislation. Enforcement and species monitoring capacity are limited.	**SS1 will be applied in full.** Site-level assessments and screening tools will be used to prevent biodiversity loss. ESP Principle 10 reinforces this obligation.
11. Climate Change: Avoid unjustified increases in GHG emissions and consider impacts on carbon sinks and climate resilience.	Addressed through **SS2: Climate Change and Disaster Risks**, which requires integration of climate risk and adaptation into design, planning and monitoring. GHG-related impacts must be assessed and avoided where relevant.	Somalia's updated **Nationally Determined Contribution (2021)** outlines climate mitigation and adaptation priorities, but there is no legal framework requiring GHG assessment or emissions limits at the project level.	**SS2 will be applied in full.** Climate screening, risk reduction and resilience-building are central to the project's design. GHG-related impacts will be addressed qualitatively in line with ESP Principle 11.
12. Pollution Prevention and Resource Efficiency: Minimise waste, pollution,	Covered under **SS3: Pollution Prevention and Resource Efficiency**, which requires efficient	The **Environmental Protection and Management Act (2024)** enables pollution control regulation, but implementation	**SS3 will be applied.** Project activities will be screened for pollution risks and managed in line with international

and inefficient use of energy, water and materials.	resource use, safe waste management, and prevention of air, water and soil contamination.	mechanisms are not yet operational. No sector-specific pollution standards or monitoring systems are in place.	good practice. ESP Principle 12 reinforces this obligation.
13. Public Health: Prevent negative impacts on public health and address environmental health risks.	Public health is addressed through **SS4: Community Health, Safety and Security**, which requires assessment of direct and indirect health risks, emergency preparedness, and protection of vulnerable groups.	Somalia's **Public Health Law** (dating to the 1970s) remains in effect but is outdated and not aligned with current environmental or disaster health risks. No risk-based screening system or enforcement is in place.	**SS4 will be applied in full.** Health-related risks from flooding, water infrastructure, or pollution will be addressed through site-level screening and risk mitigation. ESP Principle 13 aligns directly.
14. Physical and Cultural Heritage: Avoid damage or loss of cultural heritage, including community-recognised sites.	Addressed through **SS5: Cultural Heritage**, which requires identification, avoidance of impacts, consultation with affected communities, and protection of access and use.	Somalia has **no standalone cultural heritage legislation**. Some general provisions exist in cultural sector policy, but there is no formal inventory or legal protection process for tangible or intangible heritage.	**SS5 will govern all relevant project activities.** Chance find procedures, participatory identification of heritage, and avoidance of culturally significant sites will be implemented. ESP Principle 14 will be upheld in full.
15. Lands and Soil Conservation: Promote soil conservation and avoid degradation of productive or sensitive lands.	Covered under **SS1: Biodiversity, Ecosystems and Sustainable Natural Resource Management**, which includes requirements for land restoration, erosion control and sustainable land use planning.	Somalia's legal framework contains **no soil-specific legislation**. Land degradation is addressed at policy level under NRM and desertification strategies, but there is no binding enforcement mechanism.	**SS1 will be applied.** Soil erosion, slope stability and land productivity will be considered during design and site selection. ESP Principle 15 will be reflected in environmental screening and mitigation.

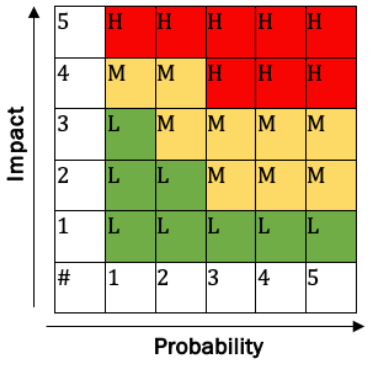
152. In all cases, the project will apply the most stringent applicable standard, with the ESSF serving as the default operational framework. Where Somali national legislation provides clear and enforceable provisions consistent with or exceeding the ESP and ESSF, these will be incorporated. In particular, the project will comply with the Environmental Impact Assessment Regulations (2024) for any water infrastructure activities that trigger formal review, and resources have been allocated to undertake an ESIA where required and a template for an ESIA is included as Appendix 4 to this ESMF. However, due to broader institutional limitations, the ESSF and ESP will govern safeguards implementation in most areas. This comparative assessment confirms that all safeguard obligations under the ESP will be met through a combination of ESSF procedures and targeted application of relevant Somali law. This approach ensures a risk-appropriate, and contextually responsive framework for environmental and social risk management throughout project implementation.

Environmental and Social Risk Screening

153. In accordance with the requirements of UNEP's ESSF, the project was screened using the UNEP Safeguards Risk Identification Form (SRIF)[5]. This process evaluates proposed activities against the eight safeguard standards of the ESSF, taking into account contextual sensitivity, the nature and scale of interventions, potential environmental and social impacts, and the likelihood of cumulative or indirect effects. Through the SRIF the project was also assessed against UNEP's guiding principles: Leave No One Behind; Human Rights and Gender Equality; Accountability; and Sustainability and Resilience — all of which apply across the project lifecycle.

154. Risks were assessed using a structured methodology that considers both the potential impact of each risk and its likelihood of occurrence. These dimensions are combined using a risk matrix to determine overall risk significance. This enables consistent classification and supports the proportional application of mitigation measures. The risk screening was implemented utilizing inherent risk reasoning[6] and in alignment with the precautionary principle[7].

Low risk: Negative impacts minimal or negligible. No further study or impact management required.
Moderate risk: Potential negative impacts, but limited in scale, not unprecedented or irreversible, and generally confined to the project area.
High risk: Potential for significant negative impacts (e.g. irreversible, unprecedented, cumulative, or involving significant stakeholder concern).



155. The screening confirmed that the project presents a moderate level of risk, consistent with a **Category B** classification, and therefore requires the development of additional risk screening and management resources, which are operationalized through the preparation of this ESMF.

156. To ensure full alignment with the AF ESP, the project was also assessed against all 15 Environmental and Social Principles of the AF. This complementary process confirmed the relevance of several principles, including those related to biodiversity, vulnerable and marginalized groups, access and equity, gender equality and land and soil conservation. These principles have been reflected in the design of risk mitigation and monitoring measures included in this ESMF.

[5] The Safeguard Risk Identification Form for the proposed project will be made available from UNEP upon request.
[6] Risk was assessed and reported as if no mitigation actions were implemented, or alternatively assuming that risk mitigation might fail. This approach ensures that project risks are not understated or explained away.
[7] The precautionary principle is applied to ensure that risk analyses account for uncertainty, assuming the highest level of likely risk where data gaps or other uncertainties exist.

157. While there is substantial alignment between the standards of the ESSF and the principles of the ESP, both frameworks have been applied in parallel to ensure comprehensive safeguards compliance. A cross-reference is provided in the following section to illustrate how identified risks are addressed across both systems.

158. Where specific sub-projects or sites remain to be confirmed — such as those to be defined through Adaptation Management Plans or participatory planning — these are treated as USPs. In accordance with both the ESSF and the ESP, all USPs will be subject to screening once sufficient detail is available, and applicable safeguards will be triggered and managed accordingly.

Risk Categorisation:

159. The outcome of the screening process confirmed that the project presents a moderate level of environmental and social risk, consistent with a **Category B** classification under both UNEP's ESSF and the AF ESP. This reflects the nature and scale of the proposed activities, the sensitivity of the receiving environment, and the presence of vulnerable populations in the target areas.

160. The table below presents the safeguard standards triggered under UNEP's ESSF. As described, risk levels were informed through a detailed Output-level screening and categorised through the SRIF using a matrix of impact and likelihood, as described in Section 6.1. These ratings inform the scope and content of this ESMF and guide the application of mitigation measures during implementation.

Table 19. Outcome of UNEP SRIF Risk Screening.

UNEP Safeguard Standard	Risk Rating	Justification and Relevant Outputs
SS1: Biodiversity, Ecosystems and Sustainable Natural Resource Management	**Moderate I=3 P=3**	Triggered due to ecosystem-based adaptation activities including rangeland rehabilitation, sand dams, riverbank restoration and the establishment of bunds and terraces. These interventions (Outputs 2.2–2.4) directly affect ecologically sensitive areas and require careful siting, design, and ongoing monitoring to avoid habitat degradation and ensure biodiversity co-benefits. Risks are localised but significant if unmanaged.
SS2: Climate Change and Disaster Risks	**Moderate I=3 P=4**	The project addresses climate hazards directly through NbS (e.g. sand dams, urban drainage, Output 2.1 and 2.5), but infrastructure and landscape modifications must remain resilient under future climate variability. Planning instruments (Outputs 1.2, 1.3) must integrate adaptive design criteria to avoid long-term exposure or maladaptation.
SS3: Pollution Prevention and Resource Efficiency	**Low I=2 P=2**	Construction activities (Outputs 2.1, 2.5, 2.6) may result in short-term, localised pollution or resource inefficiencies. Urban waste management demonstrations (Output 2.6) also carry minor risks if poorly managed. These are readily addressed through standard mitigation and construction protocols.
SS4: Community Health, Safety and Security	**Moderate I=3 P = 4**	Labour-intensive activities (e.g. excavation, elevated tanks, solar pumps, Output 2.1) and drainage works (Output 2.5) may pose health and safety risks to workers and nearby communities. Risk is moderate and can be mitigated through site-level hazard assessments, training and supervision.
SS5: Cultural Heritage	**Low I=2 P=1**	While no known physical or cultural heritage sites are currently identified, ground disturbance in urban and rural areas (especially for water infrastructure and land works in Outputs 2.1–2.5) warrants precaution. Pre-activity screening and community-based identification processes will be applied to avoid inadvertent impacts.
SS6: Displacement and Involuntary Resettlement	**Moderate I=3 P=3**	Although the project excludes involuntary resettlement, some land-use changes under AMPs (Outputs 1.2, 1.3), and communal rangeland or urban works (Outputs 2.2, 2.5), may lead to temporary access restrictions or economic displacement. These will require screening, engagement and compensation or design adjustments as needed.
SS7: Indigenous Peoples	**Low I=2 P=2**	Marginalised groups, including the Bantu, are present, but no groups meeting the UNEP ESSF definition of Indigenous Peoples assert distinct land or governance claims within the project areas. While risks are low, inclusive planning (Outputs 1.4, 3.1) and access to grievance mechanisms remain essential to avoid exclusion.
SS8: Labour and Working Conditions	**Moderate I=3 P=3**	Community-based labour (e.g. in CfW schemes or restoration works under Outputs 2.2–2.6) and contracted works must adhere to core labour standards. Risks are moderate and require monitoring for safety, non-discrimination, wage fairness and access to complaints mechanisms.
Overall Project Risk Rating	**Moderate**	The project's moderate risk classification reflects the intersection of environmental and social risks linked to land, ecosystems and infrastructure in fragile contexts. Risks are primarily related to Component 1 and Component 2 and are likely to be site-specific, reversible and manageable with proper mitigation, planning and the implementation of effective oversight mechanisms.

161. The project has been classified as **Category B** per the UNEP SRIF, indicating a moderate level of environmental and social risk. This classification reflects the scope and scale of activities and their relative uncertainty, their location within sensitive ecological and social settings, and the potential for adverse impacts that are limited in scale and manageable through good practice or the implementation of appropriate mitigation measures.

Summary of Key Risks and Potential Impacts

162. The project presents a range of environmental and social risks associated with ecosystem modification, land use change, access to resources, social inclusion and implementation in fragile settings. These risks are considered moderate in scale and scope, and are expected to be site-specific, reversible and manageable through appropriate design, screening and mitigation measures. The key risk themes are summarised below, each linked to relevant UNEP safeguard standards and Adaptation Fund environmental and social principles.

Risk 1: Risk of disruption to ecosystems and biodiversity from restoration and water infrastructure activities
Rating: P = 3; I = 3 — Moderate
Standards: UNEP SS1; AF Principles 9 and 10

163. Ecosystem-based interventions to be implemented under the project include rangeland restoration and the construction of sand dams, weirs, bunds and drainage systems — may cause short-term disruption to local ecosystems and biodiversity. Risks include vegetation clearance, erosion and disturbance to habitat or ecosystem services, including within or near protected areas such as the Jowhar Wildlife Reserve. While the intent is regenerative, mitigation will be required to ensure proper siting, sequencing and consideration of ecological sensitivity during implementation.

Risk 2: Risk of restricted land access and economic displacement due to planning and construction measures
Rating: P = 3; I = 3 — Moderate
Standards triggered: UNEP SS6; AF Principle 8

164. Adaptation Management Plans may lead to zoning changes, regulated grazing zones or enclosures that limit access to land or natural resources, particularly where land tenure is communal or informal. Infrastructure works may also require temporary relocation or land use disruption. Although involuntary resettlement is not expected, there remains a risk of economic displacement or contestation if participatory planning is not robustly applied and access protocols are not clearly defined.

Risk 3: Risk of exacerbating inter-clan tensions and inequitable access to project benefits
Rating: P = 3; I = 4 — Moderate
Standards triggered: UNEP SS4; AF Principles 2 and 4

165. Project interventions — such as shared water infrastructure, CfW opportunities or grazing area management — may exacerbate tensions between pastoralist groups, or between clans with differing land claims or expectations of project benefit. There is also a risk that grievance mechanisms may not be trusted, accessible or effective for marginalised groups, particularly where gatekeeping by traditional power holders limits uptake. Failure to address these dynamics may result in disengagement, resentment or community-level disputes.

Risk 4: Risk of exclusion of vulnerable groups due to social norms and elite capture
Rating: P = 3; I = 3 — Moderate
Standards triggered: Cross cutting (AF Principles 3, 5, 7)

166. Despite the project's commitment to inclusion, groups such as the Bantu, IDPs, women and minority clan members may face barriers to participation and benefit sharing due to entrenched social norms and institutional bias. There is also a risk of elite capture, whereby local leaders or gatekeepers dominate committees or control access to benefits, excluding more vulnerable members of the community. Without deliberate safeguards, participatory processes may unintentionally reinforce exclusion or deepen inequalities.

Risk 5: Risk of public health and safety incidents linked to water infrastructure and labour schemes
Rating: P = 3; I = 4 — Moderate
Standards triggered: UNEP SS3 and SS4; AF Principles 6 and 13

167. Water infrastructure may create breeding grounds for disease vectors such as mosquitoes, increasing the risk of water-borne or vector-borne illnesses. Construction and excavation works carry occupational and community safety risks. In some cases, labour-intensive schemes may attract informal or ineligible participants or lead to unsafe working conditions. These risks require strong design oversight, community-level risk communication and enforcement of safety standards.

Risk 6: Risk of labour rights violations and unsafe working conditions in community-based schemes
Rating: P = 3; I = 3 — Moderate
Standards triggered: UNEP SS8; AF Principle 6

168. Cash-for-Work programmes and community contracting must adhere to international labour standards, including fair pay, non-discrimination, age checks and safe working environments. Although the risk level is low, safeguards must ensure that labour conditions do not become exploitative or exclusionary, especially in areas with high unemployment or weak regulatory enforcement.

Risk 7: Risk of inadvertent damage to undocumented or community-valued cultural heritage
Rating: P = 2; I = 1 — Low
Standards triggered: UNEP SS5; AF Principle 14

169. While no known cultural heritage sites have been identified in the proposed areas of intervention, there is a low risk that construction or land modification could disturb undocumented or community-valued heritage. Pre-activity screening, consultations with local elders and activity relocation procedures will be applied to avoid inadvertent damage.

Risk 8: Risk of grievance mechanisms being inaccessible or ineffective for affected groups
Rating: P = 3; I = 3 — Moderate
Standards triggered: UNEP SS4; AF Principle 2

170. There is a risk that the GRM established under the project may be underutilised, inaccessible or mistrusted by affected communities. This may be due to language barriers, lack of awareness, fear of reprisal, or local gatekeeping practices that inhibit vulnerable groups from raising complaints. Without effective feedback and resolution systems, unresolved grievances could erode trust and undermine project legitimacy.

Risk 9: Risk of inadequate safeguard implementation due to limited institutional capacity
Rating: P = 3; I = 3 — Moderate
Standards triggered: Cross-cutting

171. There is a risk that limited institutional capacity — particularly at the district and community levels — may affect the effective implementation of safeguards. This includes the application of screening tools, monitoring of environmental and social impacts, enforcement of labour standards and documentation of land use agreements or the Livelihood Action Framework. These gaps may result in inconsistent risk management, delayed responses to issues or unintentional non-compliance with safeguards procedures.

Unspecified Sub-Projects (USPs)

172. In alignment with Adaptation Fund guidelines, interventions for which precise details are not yet available at the time of project approval are referred to as Unspecified Sub-Projects (USPs). In the context of this project, USPs relate primarily to site-specific works, infrastructure placements or land use measures that will be defined during implementation based on the outcomes of participatory planning processes — such as Adaptation Management Plans — and technical assessments, including hydrological assessment and cost-effectiveness analysis. While the general nature and objectives of these interventions are known, their exact locations, designs and implementation modalities remain to be confirmed.

173. Although these interventions fall within the anticipated scope and risk level of the overall project, their site-specific nature means that they may generate environmental and social risks that cannot be fully assessed in advance. These include potential impacts on land access, livelihoods, local ecosystems, community health and safety, and the inclusion of vulnerable groups. The extent and significance of these risks will depend on the precise location, design and scale of each USP, and must therefore be evaluated once sufficient information becomes available.

174. To ensure that environmental and social risks associated with USPs are appropriately identified and managed, all such interventions will be subject to screening using UNEP's SRIF once detailed information is available. Based on the outcomes of this screening, site-level mitigation plans may be required to address identified risks. These plans will be tailored to the scale and complexity of the intervention and will draw upon the mitigation measures, roles, and procedural guidance set out in this ESMF. No USP will proceed without prior documentation of the screening outcome, appropriate risk classification, and confirmation that all necessary safeguards measures — whether in the form of an ESMF or targeted mitigation protocols — are in place and operational. Screening will also confirm the applicability of the Adaptation Fund Environmental and Social Principles to each USP and inform any additional risk management actions required.

175. A summary of the Unspecified Sub-Projects anticipated under this project is provided in the table below. For each USP, the table outlines its definition and related Outputs or Activities, potential environmental and social risks, and the proposed management and assessment measures. These will serve as the basis for safeguards compliance once implementation details are confirmed and site-level planning begins.

Table 20. Description of project activities that fall under the USP categorisation.

Unspecified Sub-Project (USP)	Potential Risks	Context-Appropriate Management Measures
Siting and design of rural water infrastructure (sand dams, V-shaped weirs, diversion canals and protected wells): **These small-scale structures will be implemented under Output 2.1 to improve water access and reduce flood/drought risk in Beledweyne. Final locations and designs will be informed by technical assessments under Activity 1.2.1 and community validation under Activity 1.2.3.**	- Localised environmental disturbance - disruption of existing informal land use - safety hazards during construction and operation - temporary decrease of water quality during construction phase - Risk of labour rights violations in community-based works - – Inadequate access to or uptake of GRM by affected community members - – Risk of inter-clan tension over siting, benefit-sharing or water governance	- An ESIA will be conducted for these works. - Participatory siting, conflict-sensitive planning and community agreement required. - Construction-phase/Operational phase risks to be addressed through a site-specific ESMP. - All labour activities will comply with SS8, including fair pay, age checks, safe working conditions and non-discrimination. - GRM procedures will be explained during consultations and made visible at implementation sites. - Siting and implementation will include validation by multiple clans or user groups to prevent contestation and ensure inclusive access.
Placement of urban drainage and flood control infrastructure (e.g. ditches, basins, ponds): **These structures will be defined through AMPs (Output 1.3) and implemented under Output 2.5 to reduce urban flood risk.**	- Nuisance or obstruction risks - disruption to informal structures or access ways - minor construction-related impacts - Vector-borne disease risk from stagnant or slow-draining water - Exclusion of informal or vulnerable groups during siting and planning - Lack of awareness or accessibility of GRM among affected households	- Apply UNEP SRIF screening and conduct community validation via local urban planning committees. - Integrate safeguards into basic contractor procedures, including fencing, signage and traffic management where needed. - Design drainage structures to minimise standing water and align with WHO guidance to reduce vector-breeding risks. - Ensure inclusive planning processes that engage women, youth, IDPs and informal settlers. - Publicly communicate GRM procedures through signage and outreach sessions in accessible formats and languages.
Identification of sites for grazing enclosures and enrichment planting:	- Risk of exclusion of mobile herders - inter-clan land use disputes	- Sites selected through community validation under CMPs.

Part of rangeland restoration under Output 2.2, with site selection informed by AMPs developed under Output 1.2 and implemented with community nurseries (Activity 2.2.1).	- maladapted species use - Elite capture or exclusion of vulnerable groups (e.g. women, IDPs, minority clans) - Weak safeguards oversight or poor enforcement of community access agreements	- Use visual demarcation, local knowledge and traditional authority engagement. - Field checks to confirm suitability. - Ensure planning committees and nursery groups include representation of marginalised groups, including women, Bantu, IDPs and minority clans. - Assign safeguards oversight responsibilities to local technical staff or focal points; follow-up visits and photo documentation of agreed sites to confirm implementation integrity.
Terracing and bund construction on hillslopes: **Bunds and terraces will be implemented under Output 2.3 to reduce erosion. AMPs (Output 1.2) will guide the identification of appropriate slopes.**	- Localised erosion or drainage issues - risk of land access disputes or contestation - Labour rights violations or unsafe working conditions under Cash-for-Work or informal arrangements - Inadvertent damage to undocumented or community-valued cultural heritage - Weak documentation or monitoring of land access and safeguards compliance	- Use simple pre-implementation site checks and visual validation with land users. - Technical supervision to ensure correct design. - Apply minimum standards for fair and safe labour under SS8, including age checks, protective equipment and equitable participation - Conduct basic cultural heritage screening with local elders and apply chance-find procedures during earthworks - Ensure land access agreements are validated and documented with community representatives; assign field focal points to monitor safeguards compliance through simple checklists
Siting of waste collection and demonstration sites in urban areas: **These interventions form part of Output 2.6, tied to the AMPs (Output 1.3) and implemented through community mobilisation.**	- Resistance from community members, siting near homes or sensitive areas - informal dumping risks - Site-specific health and safety risks due to poor siting or management - Exclusion of vulnerable or informal populations from planning and oversight - Limited awareness or uptake of grievance mechanisms if concerns arise	- Use participatory siting during plan validation, guided by location criteria. - Awareness sessions and signage to prevent misuse. - Ensure inclusive engagement of informal residents, women and youth in the validation process - Communicate project-level grievance redress procedures through public meetings, and signage, using accessible language and formats
Additional small-scale NbS or land use measures identified in AMPs: **AMPs developed under Outputs 1.2 and 1.3 may identify further infrastructure (e.g. fencing, retention pits) or land use changes not yet specified.**	- Potential access restrictions - impacts on livelihoods or vulnerable groups - unassessed environmental effects - Labour-related risks, including unsafe or exclusionary practices during implementation - Elite capture or exclusion of minority or marginalised groups from benefit-sharing - Limited awareness or uptake of grievance mechanisms among affected households - Weak or inconsistent application of safeguards screening and monitoring tools	- All such interventions must be screened using the UNEP SRIF. - Risk level will determine safeguard instrument (ESMP, simple checklist). - No works proceed without screening and evidence/documentation. - Ensure labour practices comply with UNEP SS8, including non-discrimination, age verification and safe working conditions - Track representation of women, IDPs and minority clans in AMP validation and committee structures - Communicate grievance redress procedures through community meetings and printed materials, ensuring accessibility - Assign monitoring roles to local implementation partners and provide training on simple safeguards checklists and reporting procedures

Residual Contextual Risk and Adaptive Management

176. Despite the application of avoidance, minimisation and mitigation measures as outlined in this ESMF, some contextual environmental and social risks may persist beyond the scope of project level mitigation. These include risks arising from the evolving security context, institutional capacity constraints and complex land tenure dynamics that may limit the effectiveness or enforcement of safeguards measures. In particular, the potential for exclusion of vulnerable groups, disputes over land or water access, or unforeseen impacts from infrastructure placement may emerge despite full compliance with the proposed safeguards procedures.

177. The project has been designed with flexibility to adapt to such challenges, including the potential to adjust the location of project sites and refine the design of activities in response to emerging conditions or safeguard concerns. This adaptive approach is central to implementation and will ensure that interventions remain context-appropriate and do not exacerbate underlying risks.

178. To support this, the project will adopt an adaptive management framework, including regular monitoring of safeguard risks, community feedback through the grievance mechanism and the integration of lessons learned from implementation into ongoing project planning. The implementation arrangements assign clear roles to UNEP, SADAR and other partners for safeguards oversight, with periodic reviews to ensure that risk mitigation measures remain relevant and effective. Where changes to activities or site locations are made during implementation, these will be subject to safeguards screening and management in line with the procedures outlined for Unspecified Sub-Projects (USPs) in Section 5.3. The project will not introduce new activities that raise the overall risk classification beyond Category B; rather, adaptive measures will be used to reduce exposure to emerging risks and ensure safeguards remain proportionate and context-specific. Any significant changes to the project design, risk profile or implementation arrangements will be submitted to the Adaptation Fund for review and approval in line with the relevant operational policies and procedures.

Safeguard Operationalisation Framework

179. This section presents the operational framework for implementing the safeguards measures identified through the environmental and social risk screening process. While the overall document constitutes the overall ESMF for the EARNSS project, this section focuses specifically on how the identified risks will be addressed in practice — through defined roles, systems, and risk-specific mitigation strategies.

180. The framework links the analysis in Section 5 with the activity-specific mitigation and monitoring matrix in Section 7. It outlines institutional responsibilities for safeguards oversight and organises safeguards measures by thematic risk area, including land access, biodiversity and ecosystems, inclusion, community health and safety, labour and working conditions, and grievance mechanisms.

Institutional Responsibilities for Safeguards Oversight

181. Effective implementation of the EARNSS project's safeguards measures requires clearly defined roles across institutions and delivery partners. Oversight will be exercised at multiple levels, with UNEP, SADAR, Federal Member States and local actors each playing distinct roles in managing, monitoring, and adapting environmental and social risk responses throughout implementation.

- **UNEP**, as the Implementing Entity, is responsible for ensuring that the project complies with the UNEP ESSF and the Adaptation Fund ESP. UNEP will oversee the screening of project activities (including Unspecified Sub-Projects), review environmental and social instruments such as site-level ESIAs or mitigation plans, and ensure that safeguards implementation is adequately monitored, documented and reported.

- **SADAR**, as the Executing Partner, is responsible for day-to-day coordination and delivery of project activities in accordance with the safeguards measures outlined in this ESMF. This includes overseeing stakeholder engagement processes, maintaining documentation, reporting on safeguards implementation and ensuring that implementing partners and contractors adhere to relevant standards.

- **Federal Member State authorities** and **technical departments** will support project delivery through supervision of safeguards at district level, particularly in relation to land access, planning approval and coordination with community structures. They will also contribute to participatory validation of project sites and monitoring of implementation risks.

- **Community-level committees**, established under Component 1, will provide ongoing inputs to the planning and implementation of nature-based and hybrid interventions. These committees will support safeguards monitoring, particularly in relation to land access, conflict sensitivity, equity of benefits and grievance uptake. They will also play a role in validating decisions at the site level, including site selection and the identification of vulnerable or excluded groups.

- **Safeguards focal points** will be designated within SADAR and at local levels to provide technical support, coordinate mitigation activities and serve as contact points for grievances and incident reports. They will also ensure that screening and mitigation measures for USPs are undertaken in line with the procedures outlined in Section 6.4.

182. UNEP will work with SADAR to ensure that all relevant staff, partners and contractors are trained in their respective safeguards responsibilities, and that periodic reviews are conducted to assess the adequacy of implementation. Safeguards responsibilities will also be embedded in institutional agreements and terms of reference to ensure accountability.

Monitoring, Supervision, and Adaptive Management

183. Safeguards implementation will be supported through structured monitoring systems, local oversight and adaptive management mechanisms to ensure that environmental and social risks are effectively addressed throughout the project lifecycle. These systems are aligned with the safeguards frameworks of both UNEP and the Adaptation Fund and are designed to detect emerging risks, support inclusive implementation and ensure accountability across all levels.

Performance Monitoring and Indicators

184. Monitoring will track both compliance with mitigation measures and outcomes related to key safeguard objectives. This will include indicators such as:
- inclusion of marginalised and vulnerable groups in participatory planning processes;
- equitable access to project benefits, including employment and natural resources;
- functionality and responsiveness of the GRM;
- completion and application of safeguards screening for USPs; and
- development and implementation of Livelihood Action Plans, where needed.

185. Monitoring data will be collected through community committees, district focal points and the PMU, and used to inform safeguards reporting as well as broader project evaluations.

Supervision and Reporting

186. UNEP will provide ongoing oversight to ensure that safeguards requirements are met, including review of safeguards

instruments, verification of field-level implementation and quality assurance of reporting. SADAR will be responsible for day-to-day supervision, including follow-up on screening results, implementation of mitigation measures and documentation of progress. Safeguards focal points at the district level will support field monitoring, engage with affected communities and escalate issues where necessary.

187. Quarterly progress reports will include updates on safeguards implementation and will be reviewed by the Project Steering Committee to identify any systemic issues or delays. These will feed into the project's annual reporting and evaluation processes.

Adaptive Management

188. Given the dynamic operational context in Somalia, the project is designed to allow for adaptation of activities in response to new information, risks or challenges. Where screening or monitoring identifies significant environmental or social concerns, project activities may be re-designed, relocated or supplemented with additional mitigation measures. These changes will follow the USP protocol outlined in Section 6.4, ensuring that risk assessments and community engagement are applied prior to implementation.

189. If substantial changes to the scope or nature of an activity are required, UNEP will notify the Adaptation Fund and seek approval in accordance with Fund procedures. This ensures that adaptive responses remain transparent and accountable.

Thematic Risk Management Approaches

190. This subsection outlines the safeguards measures to be applied across the key environmental and social risk areas identified through project screening and stakeholder consultation. These risk themes correspond to the Adaptation Fund environmental and social principles and the UNEP safeguard standards triggered for the project. While mitigation measures are tailored to each activity, the strategies below apply across components and serve as the foundation for site-level implementation and monitoring.

191. Each risk category provides a summary of the risk context, potential impacts and corresponding mitigation strategies to be applied during implementation. Detailed measures by Output and Activity are included in the mitigation and monitoring plan in Section 8. In addition to the thematic strategies below, the following cross-cutting mechanisms will be applied across all safeguards areas to ensure consistency and responsiveness during implementation:

<u>Adaptive Management and Monitoring:</u>

192. All safeguards risks will be tracked through community-level monitoring structures and UNEP's oversight arrangements. If new risks emerge or impacts exceed those anticipated, corrective actions — including activity redesign, relocation, sequencing adjustments or supplementary support measures — will be implemented as part of the project's adaptive management framework.

<u>Grievance Redress Mechanism:</u>

193. The project GRM will be accessible to all stakeholders to raise complaints related to land access, exclusion, labour, environmental impacts or social risks. Local access points will be established in each district, with support from designated safeguards focal points. All grievances will be recorded, assessed and responded to within agreed timeframes in accordance with the grievance mechanism procedures outlined in Appendix 2.

<u>Ecosystem and Biodiversity Impacts</u>

194. While the project's nature-based interventions are expected to generate net environmental benefits, they may pose short-term risks to biodiversity and ecosystem services if not implemented with adequate safeguards. The overall risk is considered moderate, not because of the intrinsic nature of the activities, but due to uncertainty around specific site conditions, seasonal dynamics and implementation methods. This includes the risk of localised disturbance during land preparation or construction, particularly near sensitive ecosystems.

195. To manage these risks, the project will implement the following measures:
- Site-Level Environmental Screening using UNEP's SRIF: Will be conducted prior to all land-based or infrastructure interventions. This screening will assess ecosystem sensitivity and seasonal use to inform siting, design and timing of activities.
- Environmental Clauses in Works Implementation: Integrated into all contractor and community labour protocols, including measures for erosion control, topsoil preservation, phased site clearance and buffer zones for riparian habitats.
- Use of Indigenous Species: Revegetation activities under Outputs 2.2 and 2.4 will prioritise locally adapted, non-invasive species. Nurseries will be screened to prevent propagation of ecologically harmful varieties.
- Incorporation into Planning Tools: Ecosystem safeguards will be built into rural and urban Adaptation Management Plans (Outputs 1.2 and 1.3), including zoning measures, ecological flow considerations and land use restrictions where needed.
- No-Go Zones: Implementation will exclude legally protected areas and key biodiversity zones, including the Jowhar Wildlife Reserve.

196. These actions will be overseen through community-level monitoring and UNEP's adaptive safeguards framework to ensure

interventions avoid degradation and achieve measurable ecosystem benefits.

Land Access and Risk of Displacement

197. The risk of economic or physical displacement under the project is considered to be moderate, primarily due to uncertainty around current habitation patterns and informal land-use practices in the target areas, a need for land for the establishment of soil bunds and potential displacement of roadside stalls due to the establishment of drainage systems. To manage displacement-related risks — particularly those that may arise from Adaptation Management Plans, rangeland zoning or the siting of infrastructure — the project will implement a structured and participatory safeguards process. This approach is designed to prioritise prevention, early identification and locally appropriate mitigation through a Livelihood Action Framework. The following measures will be applied:

Participatory Engagement and Validation:

198. All decisions related to land use or site selection will be co-developed and validated with affected communities through the six local community committees established under Output 1.4. These processes will ensure representation of agro-pastoralists, transhumant herders, IDPs and clan minorities, and will incorporate traditional and informal tenure arrangements where relevant.

Site-Level Screening:

199. Prior to implementation of any land-based activity, screening will be conducted using the UNEP SRIF[8]. This includes review of land access, tenure security, seasonal usage and dependency on ecosystem resources. Where the screening identifies potential for economic displacement, including in relation to roadside stalls, a mitigation response will be triggered.

Livelihood Action Plans:

200. Where screening identifies that a proposed activity may restrict access to land, water or other natural resources essential for livelihoods, a Livelihood Action Plan (LAP) will be developed. Each LAP will be site-specific and formulated in close consultation with affected households and user groups, ensuring that measures reflect both local conditions and community preferences. The LAP will outline the actions required to:
- avoid or minimise adverse impacts on livelihoods;
- provide alternative or negotiated access to essential resources; and
- offer transitional support or compensation measures where impacts cannot be avoided.

201. The project will apply LAPs in cases where participatory planning or activity redesign is insufficient to fully mitigate risk. Each LAP will be prepared in advance of implementation and reviewed by UNEP and SADAR as part of the safeguards oversight process. A Livelihood Action Framework (LAF) is provided in **Appendix 1**, offering procedural guidance, minimum content requirements and templates to support consistent application across project sites.

Exclusion of Involuntary Displacement:

202. The project will not implement activities that:
- require involuntary physical resettlement;
- cause permanent access restrictions without community consent; or
- Take place on contested land where conflict or exclusion risks cannot be mitigated. Should such areas be flagged during implementation the project will instead identify alternative areas in which to implement activities.

Inclusion of Marginalised and Vulnerable Groups

203. The project operates in a context where clan-based structures, social hierarchies, and displacement status can significantly affect access to resources, influence over decision-making and ability to participate in planning processes. While the project is designed to reduce inequality and enhance inclusion, there remains a moderate risk that certain groups — including Bantu communities, occupational castes, IDPs, youths, persons with disability, and women — may be unintentionally excluded from benefits or face barriers to meaningful participation.

204. To mitigate these risks, the following measures will be applied:

Inclusive Stakeholder Mapping and Engagement:

205. The Stakeholder Engagement Plan (SEP) includes structured processes to identify and engage groups with a history of exclusion. This includes disaggregated stakeholder analysis and the use of entry points (e.g. community elders, civil society groups, IDP committees) to reach vulnerable populations.

Quota-Based Representation:

206. Local committees established under Output 1.4 will include minimum representation thresholds for women, marginalised ethnic groups (for example, Somali Bantu) and IDPs. These thresholds will be integrated into the committee selection criteria and monitored by safeguards focal points.

[8] The Safeguard Risk Identification Form for the proposed project will be made available from UNEP upon request.

Culturally Appropriate Engagement Approaches:

207. Engagement strategies will use Somali-language materials, gender-segregated meetings where appropriate and consultation venues that are accessible to women, youth and mobile pastoralists. Community facilitators will be trained to identify and mitigate power imbalances during dialogue processes.

Labour and Working Conditions

208. The project will involve a range of labour modalities, including Cash-for-Work (CfW) schemes, community-based implementation teams and contracted service providers. While the nature and scale of activities are relatively limited, the labour risk is assessed as moderate, primarily due to Somalia's weak institutional capacity to monitor and enforce labour protections. Specific concerns include the risk of child labour, occupational health and safety gaps, and the potential for harassment or discrimination in community labour environments. This risks are relevant for direct project activities and within any local supply chains on which the project depends. These risks are compounded by high unemployment, clan-based hiring practices and informal norms in rural and peri-urban areas. A project-level Labour Management Plan (LMP) has been developed to ensure compliance with Somalia's Labour Code (2019) and ILO core standards, and to provide structured guidance on working conditions, child labour prevention, OHS protocols and labour grievance handling. The LMP is included as Appendix 3 to this ESMF. To manage these risks, the following safeguards will be applied:

Application of Labour Law and ILO Standards

209. All project-supported labour arrangements will comply with the Labour Code of the Federal Government of Somalia and relevant ILO conventions as per the LMP. Labour safeguards will be informed by international best practice, including CfW guidelines from Mercy Corps and FAO.

Standardised Labour Contracts and Oversight

210. All contracted entities, including community-based service providers and district-level labour teams, will operate under written contracts outlining roles, responsibilities, duration, payment terms, safety provisions and grievance procedures. UNEP and SADAR will monitor contract compliance through routine supervision and site-level reporting. An example of a contractor

Eligibility and Age Screening for CfW Participants

211. Clear protocols will be applied to verify the eligibility of CfW workers, particularly to prevent the engagement of minors. District-level safeguards focal points will conduct spot checks and verify worker rosters against registration data.

Occupational Health and Safety (OHS) Measures

212. Site-appropriate safety protocols will be implemented for all manual labour activities (e.g. digging, bund construction, waste collection). This will include basic OHS orientation, provision of tools and protective gear where necessary and supervisor oversight. Contractors will be required to comply with minimum OHS provisions as a contractual obligation.

Gender-Responsive and Non-Discriminatory Recruitment

213. The project will apply gender-responsive recruitment targets and promote the inclusion of IDPs and ethnic minorities in CfW opportunities. Transparent selection criteria will be used to prevent exclusion based on clan affiliation or other social hierarchies.

Prevention of Workplace Harassment and SEAH

214. The Code of Conduct for contractors and project workers will include provisions on respectful conduct, non-discrimination and zero tolerance for sexual exploitation, abuse or harassment (SEAH). Orientation sessions will be held for workers and supervisors to raise awareness of behavioural standards and redress mechanisms.

Labour Grievance Handling

215. Labour-related complaints — including those related to delayed wages, unsafe conditions or harassment — will be channelled through the project's Grievance Redress Mechanism (GRM). Dedicated local GRM focal points will be trained to receive and escalate such complaints in coordination with SADAR and UNEP.

Community Health, Safety and Security

216. Project activities involving infrastructure development, restoration of flood-prone sites and community mobilisation carry potential risks to the health and safety of surrounding populations. These include exposure to construction hazards, road accidents linked to site access or material transport, and safety risks around infrastructure placement (e.g. open pits, unstable embankments or flooding hazards). Water-related disease vectors, unsafe waste handling or exposure to hazardous materials (e.g. fuel, lubricants, cement) may also pose health risks. The project may also disrupt ecosystem services (e.g. local drainage or vegetation buffers), affecting community safety or environmental health. Finally, risks related to security, protection (including SEAH), or localised contestation over resources or employment will be present in the context of field operations. The risk is considered moderate, primarily due to weak regulatory oversight, limited health system capacity and the possibility of localised conflict or SEAH risks arising during field operations.

217. To manage these risks, a number of safeguards will be implemented to ensure that while the project engages communities in active implementation, appropriate protections are in place to manage exposure to infrastructure and environmental

hazards, prevent health impacts and minimise conflict or protection risks. To achieve this, the following safeguards will be applied:

Construction and Site Safety Protocols

218. All infrastructure activities — including sand dams, weirs, terraces, bunds and drainage systems — will follow site-specific safety protocols. Community safety measures will be integrated into design (e.g. fencing or signage where needed), and project teams will ensure that communities are informed in advance of construction works or restricted access areas. Site supervisors will be responsible for implementing safety precautions during works.

Water-Related Disease Prevention

219. Activities involving the creation of water bodies (e.g. reservoirs, flood basins, rainwater harvesting) will incorporate design elements to minimise stagnant water and vector breeding risks. Public awareness messages on safe water use and waterborne disease prevention will be integrated into Output 3.3 on awareness raising. If feasible, environmental hygiene promotion will be supported in areas near reservoir sites.

Community-Based Waste Management

220. Solid waste demonstration projects in urban areas will follow safe handling protocols. Activities will be preceded by awareness sessions and carried out under the supervision of local authorities or NGOs. If risk assessments indicate the need, protective gear and hygiene supplies will be distributed to participants.

Conflict, GBV and SEAH Risk Prevention

221. The project will apply conflict-sensitive approaches to community engagement and employment. Where tensions may arise (e.g. over CfW selection, land access), district-level safeguards focal points will monitor for early warning signs. In line with UNEP's SEAH policy[9], awareness on SEAH prevention will be incorporated into community training, and referral pathways will be identified for survivors. Mixed-gender implementation teams and use of public venues for engagement will be encouraged to minimise SEAH risk.

Security Risk Monitoring

222. Given the volatility of some project areas, SADAR and UNEP will coordinate closely with UN Area Coordinators and security agencies to assess access conditions before field activities. Community mobilisers will be trained to report emerging security risks during implementation. Where needed, activities may be rescheduled or relocated to avoid exposure to conflict-affected areas.

Community Grievance Access

223. Communities will be able to report health, safety or security concerns through the GRM. GRM access points will be adapted for low-literacy users and publicised during consultation activities. Local focal points will ensure timely referral of serious complaints.

Emergency preparedness and response

224. For all infrastructure works and high-risk activities, site-level focal points will be trained in basic emergency response protocols, including how to report accidents, evacuate work areas and contact relevant authorities. First-aid kits will be made available at worksites, and emergency contact procedures will be shared with communities during mobilisation. Any incidents will be logged and followed up through the safeguards monitoring system.

Road safety

225. All activities involving material transport or movement of equipment will be preceded by basic road safety planning. Contractors and field teams will be instructed to minimise transport during peak community activity hours and to use established access routes where possible. Community awareness on road safety will be included in mobilisation efforts, especially near schools, markets or pedestrian areas. Vehicles used for transport will be required to meet basic safety standards and be operated by trained personnel.

Climate Change Risk

226. While the project is designed to support adaptation to climate-induced hazards, there is a moderate risk that certain interventions may themselves be vulnerable to future climate impacts. This includes the potential for NbS and hybrid measures — such as sand dams, embankment revegetation and SUDS — to become less effective under changing rainfall patterns, increased temperatures or more frequent extreme events. Failure to adequately factor in these climate risks may undermine the sustainability of infrastructure investments or result in maladaptation — for example, if sand dams reduce downstream flow in drought-prone areas or if revegetated areas are degraded by future flood events. Many of these risks are addressed through the project design, so while no specific external safeguards are to be implemented to address this risk, the relevant project-integrated strategies are presented here for reference:

[9] UNEP Prevention and Response to Sexual Misconduct: https://www.unep.org/about-un-environment-programme/policies-and-strategies/prevention-and-response-sexual-misconduct.

Climate-Responsive Design and Planning

227. Site-level technical assessments conducted under Activities 1.2.1 and 1.3.1 will integrate available climate projections to inform the siting, scale and specifications of water infrastructure and restoration works. Where data is limited, participatory risk mapping and local knowledge will be used to identify historical hazard zones and future vulnerabilities.

Ongoing Risk Monitoring

228. Implementation partners and safeguards focal points will monitor climate-related performance indicators to detect early signs of intervention failure or stress. This includes erosion at infrastructure sites, hydrological impacts on nearby ecosystems or declining vegetation cover in restored areas. Mitigation measures will be revised as needed.

Cultural Heritage

229. The project's interventions are not expected to involve significant risks to tangible or intangible cultural heritage. No national or internationally recognised heritage sites have been identified within the planned implementation areas; however, many of the targeted districts contain undocumented or locally significant cultural resources — such as burial sites, sacred trees or traditional water access points — that may not be formally registered.

230. Given the rural and peri-urban nature of many sites, and the reliance on excavation and land modification for works such as sand dams, terraces, drainage basins and bunds, there is a low but non-negligible risk that activities may unintentionally disturb or restrict access to such resources. To ensure that the project accounts for such situations the following safeguards will be applied:

Pre-Activity Screening and Community Consultation

231. Prior to site-level works, implementing partners and community committees will conduct participatory site assessments to identify any known or suspected cultural heritage. Where relevant, elders and traditional authorities will be consulted to document culturally significant locations.

Avoidance as Primary Strategy

232. Where cultural heritage is identified, interventions will be redesigned or re-sited to prevent direct disturbance or access restriction wherever feasible. If avoidance is not possible, the intervention will be specifically designed to secure, protect or buffer the heritage resource from impact — for example, through physical demarcation, design modifications or restricted works areas. In all cases, such decisions will be made in consultation with affected communities and based on documented agreement.

Chance-Finds Procedure

233. A simple, locally adapted chance-finds procedure will be included in contractor guidance. If artefacts or remains are encountered during construction, work will be halted and the local oversight committee notified, in coordination with relevant district authorities.

Resource Efficiency and Pollution Prevention

234. The project involves small-scale infrastructure and community-based activities that may generate limited waste and require the use of basic materials such as sand, gravel, timber and fuel. Although the environmental footprint is expected to be minimal, there remains a risk of inefficient resource use, unmanaged solid waste, or minor pollution linked to improper handling of construction materials, fuel, cement or waste by-products. These risks are compounded by informal waste practices and limited regulatory oversight in some urban and rural areas. To mitigate these risks, the following safeguards will be applied:

Material Use and Waste Minimisation

235. Project implementation teams will be guided to minimise material waste during construction, particularly for sand, gravel and cement. Where feasible, existing or rehabilitated structures will be used instead of new construction. Waste from construction activities will be collected, stored and disposed of safely in accordance with basic environmental guidelines.

Pollution Prevention during Works

236. Contractors and community teams will be instructed in the safe storage and handling of fuels, cement, lubricants and other materials with pollution potential. Spill containment measures (e.g. drums, runoff barriers) will be used where required. Open burning and illegal dumping will be prohibited.

Site-Level Monitoring and Awareness

237. Local implementing partners will monitor waste handling and resource use through simple site checklists. Community awareness activities under Output 3.3 will include messaging on pollution risks and environmental hygiene. Additional technical guidance may be provided to urban waste demonstration groups under Output 2.6 where applicable.

Stakeholder Engagement, Information Disclosure and GRM Reporting

238. Stakeholder engagement is a core element of the safeguards implementation framework and will continue throughout the project lifecycle. Consultations were carried out in all three target districts — Beledweyne, Jowhar and Afgooye — with

representation from elders, women's groups, water users, IDPs and minority clans. These consultations informed site prioritisation, safeguards planning, and activity selection. A dedicated activity-level SEP will guide continued engagement, with field-level partners facilitating inclusive and accessible consultation processes. These will be supported by SADAR and monitored by UNEP to ensure alignment with the ESSF and the project's risk profile.

239. Information disclosure will be carried out in line with UNEP requirements and good practice. Key safeguards documents — including the ESMF, screening results, and any required site-specific ESMPs — will be made publicly available through UNEP platforms and disclosed locally by SADAR in Somali and Maay. Disclosure will include low-literacy formats, community briefings, and public signage to ensure awareness across diverse stakeholder groups. Local implementing partners will ensure that relevant information is made available prior to the start of any physical interventions.

240. The project-level GRM, detailed in Appendix 2, is operational across all three sites and designed to receive complaints in multiple formats — including verbal, SMS, and written submissions. Site-level focal points are responsible for intake, local resolution where appropriate, and timely referral to the PMU for follow-up. All grievances are logged in a central register and reviewed monthly. Serious or unresolved cases are escalated to a GRM Committee comprising UNEP, SADAR and civil society representatives. Summary statistics on grievances — including the number received, resolved, pending, and referred — will be included in safeguards monitoring reports and reflected in AF and UNEP progress reports. These reports will also note any emerging trends or systemic concerns. SEA/SH-related grievances are handled through a confidential referral process and excluded from reporting.

Environmental and Social Management and Monitoring Plan

241. This Environmental and Social Management and Monitoring Plan presents the structured set of mitigation and monitoring measures required to address the environmental and social risks identified under the project. The plan is divided into two parts: i) cross-cutting safeguards strategies that apply across the project and are essential for the consistent application of key safeguard functions; and ii) Output-level risk management measures aligned with specific project activities, covering risks such as land access, ecosystem impacts, community health and safety, and labour conditions. Each measure includes indicative timing, responsibility and implementation modality to ensure effective integration into project operations and supervision.

Table 21. Cross-cutting risk mitigation measures

Cross Cutting Safeguards Measure	Scope of Application	Timing (Years/Quarters)	Lead Entity	Monitoring Indicators	Notes	Budget (USD)
Stakeholder Engagement Plan (SEP)	All outputs (1.1 to 4.1) — covering participatory planning, site selection, infrastructure implementation, cash-for-work design, community training and mobilisation, learning and dissemination, and policy dialogue.	Initiated in Q1 of Year 1; active throughout the full project lifecycle (Y1–Y5)	SADAR district focal points; FMS line ministries; UNEP	Number of consultations conducted (by district and by Output) Percentage of consultations with participation from women, marginalised groups (IDPs, Bantu minority clans) and youth Number of instruments validated through stakeholder feedback (e.g. AMPs, incentive schemes)	The SEP is foundational to safeguards implementation. It enables participatory design, safeguards compliance and local ownership. Effective implementation requires dedicated budget under each activity to enable translation, facilitation and monitoring.	$6,000 *(supplements activity-level budgets; supports inclusive facilitation, materials and validation)*
Grievance Redress Mechanism (GRM)	All outputs (1.1 to 4.1), particularly activities involving land access, infrastructure works, community labour and benefit-sharing.	Established in Y1 (Q1–Q2); operational throughout implementation (Y1–Y5), with periodic review	SADAR district safeguards focal points (first-line resolution); UNEP (oversight and escalation); FMS line agencies (as applicable)	Number of grievances received (disaggregated) Percentage resolved within 30 calendar days Proportion of communities with functioning GRM entry points (verified through receipt of grievances or photo evidence)	The GRM will operate through accessible, community-level entry points with escalation pathways. All complaints — including anonymous or sensitive grievances — will be logged, tracked and resolved per AF and UNEP guidance. Integrated into committee structures and SEP activities.	$7,000 *(establishment of access points, training, tracking system, community awareness)*
Gender Action Plan (GAP)	Please refer to the GAP for more details on its implementation, responsible parties and monitoring indicators				The GAP complements the SEP and safeguards provisions by addressing gender-specific barriers to participation and benefit-sharing. CfW design will follow international and national gender guidelines.	Included in GAP budget
Capacity Building for Safeguards Implementation	All outputs (1.1 to 4.1), with focus on participatory planning, infrastructure development, stakeholder engagement and grievance handling.	Initial training in Y1 Q1–Q2; refresher trainings and ongoing mentoring through Y2–Y5	UNEP (design and oversight); SADAR (national and district focal points); University of Peace (training module support)	Number of training sessions (by level) Number of staff/committee members trained (disaggregated) Percentage demonstrating improved understanding (via evaluations) Percentage of activities monitored using safeguards tools	Capacity development is essential in fragile, decentralised contexts. Training will be embedded in Component 1 activities, with follow-up support through supervision missions and focal point mentoring.	$6,000 *(training, job aids, supervision tools)*
Livelihood Action Plans (LAPs)	Where project activities (e.g. fencing, enclosures, regulated access zones) may cause economic displacement or land use disruption.	Screened during activity planning (Y1–Y3); LAPs developed before implementation of any relevant activities.	SADAR safeguards focal points; FMS ministries (land, planning); UNEP (technical support)	Number of LAPs prepared and applied Number of affected persons consulted and supported Land access protocols documented	Framework included in Appendix 1. LAPs only triggered where access restrictions or displacement risks are identified through screening. Includes benefit, consent and local agreement for land access as required.	Variable (per site); additional safeguards budget available to support LAPs ($10,000)
Labour Management Plan (LMP)	All project activities involving paid or voluntary labour, particularly	Drafted in Y1 Q1 and updated as needed	SADAR safeguards focal points; FMS labour	Percentage of worksites monitored for compliance with basic labour standards	The LMP outlines obligations under Somalia's Labour Code (revised 2019) and	

	CfW schemes, infrastructure works, and local service provision. Applies to direct workers, community labourers, and contracted parties.	throughout Y1–Y5	authorities; UNEP (technical oversight)	Number of labour-related grievances received and resolved Share of women, youth and vulnerable persons employed through CfW	ILO core labour standards. It covers minimum age, equal opportunity, freedom from forced labour, fair wages, grievance access and OHS. Implementation will be supported by site protocols, the GRM and the Contractor Code of Conduct.	

Table 22. Output-level Environmental and Social Management and Monitoring Framework

Output	Key Risks	Mitigation Measures	Monitoring Indicators	Responsible Parties	Timing	Budget
Output 1.1: Capacity development programmes for flood and drought management, integrating innovative NbS and hybrid technologies, developed and delivered for institutional stakeholders.	• Exclusion of key actors and underrepresented groups • Content not tailored to Somali context	• Map and include relevant institutions across levels • Apply gender-responsive and inclusive tra ining methods • Use Somali-language and locally relevant examples	• # of institutions represented (disaggregated) • % of women and marginalised group participants	UNEP, SADAR, training service providers	Aligned with Output timing	As per detailed budget
Output 1.2: Three Adaptation Management Plans in prioritised sub-catchment and floodplain area, with protocols for planning and implementing NbS and hybrid technologies for adaptation generated.	• Exclusion of vulnerable groups • Weak spatial data • Low community ownership	• Use inclusive participatory planning approaches • Ensure representation of women, IDPs, and marginalised groups • Integrate traditional/local knowledge and field validation	• # of community meetings and mapping sessions • Stakeholder participation logs • Validation reports with feedback addressed	SADAR, District Authorities, UNEP	Aligned with Output timing	As per detailed budget
Output 1.3: Three Adaptation Management Plans in prioritised urban areas, with protocols for planning and implementing urban green infrastructure technologies in flood-prone areas generated.	• Exclusion of informal settlements • Urban inequities reinforced • Lack of inclusive protocols	• Include informal areas in planning scope • Engage urban poor, youth, and women's groups • Validate urban protocols with diverse stakeholders	• Urban plans include informal overlays • Public validation records• • Inclusion of consultation priorities in final protocols	SADAR, Municipal Authorities	Aligned with Output timing	As per detailed budget
Output 1.4: Six local community committees established or capacitated and trained on participatory planning, implementation and monitoring of rural and urban Adaptation Management Plans.	• Elite capture; Underrepresentation of minority clans and women; • Limited safeguards capacity	• Transparent nomination/selection processes • Diversity criteria for committee membership • Training on participatory planning and safeguards	• Committee rosters with gender/clan breakdown • Training completion records • Safeguard focal points assigned	SADAR, District Focal Points	Aligned with Output timing	As per detailed budget (Output 1.4)
Output 2.1: Six combined V-shaped weirs and sand dams built and equipped with solar pumps, elevated storage tanks, and gravity distribution systems in Beledweyne.	• Environmental degradation during construction (e.g. sedimentation, biodiversity loss) • Poor site selection • Construction quality issues • Community exclusion from water access planning • Operational sustainability risks.	• Conduct ESIA prior to construction; Validate technical designs through ground-truthing and site-specific assessment; • Ensure inclusive engagement of community committees in design and water use planning; • Apply quality control measures during construction; • Train community committees (from Output 1.4) in operation and maintenance;	• ESIA conducted and approved; • Number of infrastructure sites verified via ground-truthing; • Quality assurance reports from construction firm; • Number of community members trained; • Functionality of installed systems post-construction.	SADAR; MoEWR; Construction firm; Community Committees	Aligned with Output timing	As per detailed budget (Output 2.1)

Output	Key Risks	Mitigation Measures	Monitoring Indicators	Responsible Parties	Timing	Budget
		• Involve MoEWR in technical oversight.				
Output 2.2: Rangelands brought under climate smart management practices through community empowerment in the three target distrcits.	• Unsuitable species selected for enrichment • Low community ownership or misuse of resources • Environmental risks from improper land management • Weak capacity for climate-smart practices • Labour grievances under CFW.	• Engage communities in species selection based on traditional knowledge and agroecological suitability; • Establish and train community committees to lead nursery management and plot monitoring; • Apply cash-for-work modalities with clear terms, safeguards, and grievance mechanisms; • Provide ongoing training and follow-up visits to assess and adapt rangeland practices.	• Number of nurseries established and operational; • Hectares under climate-smart management; • Number of community members trained; • Functioning CFW records and grievance logs; • Follow-up assessments of demonstration plots.	SADAR; Local Authorities; Community Committees	Aligned with Output timing	As per detailed budget (Output 2.2)
Output 2.3: Soil bunds constructed to reduce soil erosion and water run-off at the watershed level in Beledweyne.	• Land degradation if bunds are poorly placed or maintained • Community resistance due to unclear land tenure • Injuries or disputes under CFW • Bunds fail to perform due to poor design.	• Use site-specific data from Rural Water Management Plans to inform bund placement; • Engage communities and local authorities to confirm land access and responsibilities; • Apply safety protocols and clear procedures for CFW implementation; • Train committees on bund maintenance and erosion control techniques.	• Hectares of bunds constructed; • Number of community members trained; • Functionality and stability of bunds after seasonal rains; • Number of grievances recorded and resolved.	SADAR; Community Committees	Aligned with Output timing	As per detailed budget (Output 2.3)
Output 2.4: River embankments restored and riverine areas revegetated or restored for the reinforcing of river embankments and retention and infiltration of flood water in Jowhar and Afgooye.	• Ecosystem disturbance or biodiversity loss from poorly planned interventions • Inadequate technical design leading to structural failure • Lack of community buy-in or participation • Risks of conflict over land or water access during restoration • Use of invasive species for revegetation.	• Ground-truth and verify embankment sites to minimise ecological disturbance; • Apply robust technical design and independent validation for gabions and low-flow pipes; • Use participatory methods for site selection and planting; • Coordinate with local authorities to confirm land access and rights; • Use only native or locally appropriate species in revegetation.	• Number and area of embankments restored; • Area (ha) revegetated; • Number of community members engaged; • Evidence of vegetation establishment; • Instances of conflict or grievances.	SADAR; Community Committees	Aligned with Output timing	As per detailed budget (Output 2.4)
Output 2.5: Sustainable urban drainage systems (SUDs) improve urban drainage network.	• Improper siting or poor design reducing drainage effectiveness • Increased downstream flooding due to poor hydrological planning • Blockage or degradation of drainage structures due to lack of maintenance • Community resistance or misuse of infrastructure.	• Conduct detailed technical assessments to ensure hydrologically sound siting and design; • Integrate AMPs and involve municipal engineers; • Establish O&M plans and assign responsibilities to community committees;	• Length (km) of SUDs constructed; • Number of drainage points operational; • Number of trainings conducted; • Evidence of drainage function during rainfall events.	SADAR; District Authorities; Ministry of Public Works; Community Committees	Aligned with Output timing	As per detailed budget (Output 2.5)

Output	Key Risks	Mitigation Measures	Monitoring Indicators	Responsible Parties	Timing	Budget
		• Conduct awareness sessions on benefits and appropriate use of SUDs.				
Output 2.6: Waste management and its flood reduction benefits demonstrated in urban neighbourhoods.	• Improper waste disposal leading to blocked drainage and exacerbated flooding • Low participation or buy-in from community or local authorities • Exposure to health and safety hazards during waste collection • Sustainability of waste management activities post-demonstration.	• Train local authorities and community committees on waste sorting, composting and reuse; • Demonstrate practical flood reduction benefits linked to drainage performance; • Provide protective equipment and safe working protocols for waste drives; • Link activities to Output 1.4 governance structures for longer-term management.	• Number of workshops conducted; • Number of waste drives implemented; • Volume of waste removed; Number of participants engaged; • Evidence of drainage improvement in demonstration sites.	SADAR; Local Government (Urban Services); Community Committees	Aligned with Output timing	As per detailed budget (Output 2.6)
Output 3.1: Lessons learned and best practices are codified and disseminated to promote investment in NbS.	• Risk of excluding women, youth, and vulnerable groups in lesson documentation and validation processes • Inadequate protection of personal data during consultations	• Ensure inclusive community consultations (sub-activity 3.1.1.1) include gender and age disaggregation, with safe feedback channels; • Apply Do No Harm and data protection principles during information capture; • Involve technical experts in validating findings and ensure peer review of reports and briefs.	• Number of consultation sessions held with demographic disaggregation • Verification of data protection protocols • Number of peer-reviewed knowledge products disseminated	SADAR (with technical support from UNEP); Local CSOs and academic institutions	Aligned with Output timing	As per detailed budget (Output 3.1)
Output 3.2: Recommendations for policy reforms and incentive packages are available at federal, member state and local government levels to promote the development, replication and upscaling of NbS and hybrid measures.	• Risk of policy review and recommendations not adequately reflecting ground realities or community perspectives, especially those of women and marginalised groups • Risk of elite capture or favouritism in incentive mechanism design	• Ensure participatory consultations at all levels (sub-activities 3.2.1.3, 3.2.2.1, 3.2.3.4) are inclusive and gender-responsive; • apply conflict-sensitive approaches in stakeholder engagement; • ensure technical independence and evidence-based analysis in carbon credit business case development; conduct validation of findings with local stakeholders.	• Number of consultation and validation meetings with demographic disaggregation • Documentation of safeguard and conflict sensitivity considerations in the policy review • Final reports reflecting community and stakeholder feedback	SADAR (with technical support from UNEP and external experts); Government line ministries at federal and state levels	Aligned with Output timing	As per detailed budget (Output 3.2)
Output 3.3: Gender-responsive public awareness programmes developed and implemented.	• Risk of exclusion or token participation of women, youth, and marginalised groups in awareness-raising activities • Risk of reinforcing gender stereotypes or failing to reach target groups effectively due to inappropriate messaging channels or formats.	• Design and pre-test awareness materials with diverse stakeholder input, especially from women and youth; • use culturally appropriate and inclusive language and formats; • ensure media and outreach partners are briefed on gender and inclusion principles; • monitor representation and engagement in all outreach activities.	• Number of awareness materials produced with gender and inclusion review • Participation data disaggregated by gender, age, and other relevant factors • Qualitative feedback from target audiences on relevance and inclusivity of campaigns	SADAR; local CSOs and media partners; gender and communication specialists	Aligned with Output timing	As per detailed budget (Output 3.3)

Implementation Arrangements

242. The EARNSS project will be implemented under the MIE modality, with UNEP serving as the MIE and SADAR acting as the EE[10]. UNEP will oversee overall compliance with its ESSF and the Adaptation Fund ESP, and will provide quality assurance, safeguards oversight and reporting to the Adaptation Fund. SADAR will lead day-to-day project execution, coordinating activities across the three target districts in partnership with Federal Member State institutions, line ministries and local actors. Project implementation will be managed by a PMU, comprising a Project Manager, M&E Officer, Gender Officer and ESS Officer. The PMU will be responsible for operational coordination, financial management, procurement and implementation monitoring. District-level focal points will support field-level implementation and ensure alignment with safeguards protocols, including screening of USPs.

243. A PSC will provide high-level guidance, inter-institutional coordination and approval of workplans, budgets and technical deliverables. The PSC will meet biannually and convene ad hoc sessions as needed. Community committees established under Component 1 will play a critical role in participatory planning, site validation, safeguards monitoring and grievance uptake, supporting inclusive and transparent implementation. Further detail on implementation arrangements is available in the Funding Proposal. Institutional responsibilities for safeguards oversight are provided in Section 7.1 of this ESMF.

Budget for Safeguards Implementation

244. The following section outlines the estimated budget for the implementation of environmental and social safeguards under the project. The budget covers both cross-cutting safeguard functions — such as stakeholder engagement, grievance redress and safeguards oversight — as well as site-specific activities including the ESIA for water infrastructure. The budget reflects a streamlined approach, with key functions supported through co-financing or integrated within broader project delivery. Where relevant, budget items are allocated over a five-year implementation period to facilitate planning and tracking.

Table 23. Safeguards Implementation Budget

Cost Item	Assumption	Related Outputs	Total (USD)	Disbursement Schedule				
				Y1	Y2	Y3	Y4	Y5
Safeguards Focal Point – Beledweyne	Funding to support oversight of activities/infrastructure and grievance response	All Outputs	8,000	2,000	2,000	1,500	1,500	1,000
Safeguards Focal Point – Jowhar	Funding to support on-going engagement in drainage, work and urban planning.	All Outputs	8,000	2,000	2,000	1,500	1,500	1,000
Safeguards Focal Point – Afgooye	Funding to support: on-going engagement for NbS planning and infrastructure activities.	All Outputs	7,000	2,000	2,000	1,000	1,000	1,000
ESIA for Water Infrastructure	ESIA to be scoped with targeted stakeholder engagement.	Output 2.1	($15,000 – incorporated under Output budget)					
Labour Management Plan	LMP aligned with Somalia's Labour Code and ILO standards; supports basic guidance, implementation, and field-level supervision.	All Outputs	4,000	2,000	500	500	500	500
Safeguards Training	Covers in-person training and refresher support	Outputs 1.1, 1.4	7,000	3,000	2,000	2,000	0	0
Stakeholder Engagement	Top-up for consultations, facilitation and	Outputs 1.1, 1.4	6,000	2,000	2,000	1,000	1,000	0
(GRM)	Setup and outreach support; local access managed by focal points	All Outputs	7,000	3,000	1,000	1,000	1,000	1,000
Monitoring	Checklists, printable tools etc.	All Outputs	3,000	1,000	500	500	500	500
Contingency	Flexible buffer for unforeseen costs including Livelihood Access	All Outputs	10,000	2,000	2,000	2,000	2,000	2,000
Total			60,000	19,000	14,000	11,000	9,000	7,000

[10] Refer to Part III, Section A: Project arrangements in the Funding Proposal for additional detail on the PMU and PSC.

Appendices

Appendix A: Livelihood Action Framework

Purpose of the LAF

245. This Livelihood Action Framework (LAF) provides structured guidance for identifying and managing risks of access restriction and economic displacement that may arise from project interventions under the EARNSS project. It is intended for use during implementation where land-use changes, sub-catchment management plans or infrastructure siting may disrupt traditional or informal resource use patterns.

246. The purpose of the LAF is to ensure that:
- Affected individuals or communities — especially those reliant on communal lands, grazing areas or informal livelihood systems — are identified and meaningfully engaged;
- Displacement-related risks are avoided wherever possible, and where avoidance is not feasible, they are addressed through participatory mitigation measures;
- Livelihood support is context-appropriate, transparent and consistent with the principles of the UNEP Environmental, Social and Sustainability Framework (ESSF), particularly Standard 6 on Displacement and Involuntary Resettlement;
- Implementation aligns with the Adaptation Fund Environmental and Social Policy, ensuring that project benefits are not achieved at the cost of harm to vulnerable or marginalised groups.

247. This framework supports the preparation of site-level Livelihood Action Plans (LAPs) for all relevant project locations or activities where risk of economic displacement is identified.

When a LAP is Required

248. A Livelihood Action Plan (LAP) must be prepared during implementation if any project activity is expected to cause economic displacement or restrictions on access to resources, particularly where land tenure is informal or communal. This applies to situations where:

- rural or urban Adaptation Management Plans introduce zoning or land-use regulations that affect access to agricultural, rangeland or water resources;
- restoration or infrastructure works (e.g. sand dams, terraces, diversion canals) lead to temporary or permanent disruption of livelihood activities such as grazing, cultivation or water collection;
- land rehabilitation or revegetation activities result in the closure or reallocation of degraded areas traditionally used by specific groups;
- overlapping or contested land/resource claims create a risk that certain groups — especially marginalised clans or displaced persons — may be excluded or negatively impacted; or
- the grievance redress mechanism (GRM) or stakeholder consultations identify actual or anticipated impacts on livelihoods that were not fully captured during initial screening.

249. The need for a LAP will typically be identified during site-level safeguards screening, validation workshops, or early implementation of planning processes. LAPs are not required where impacts are clearly absent or negligible, but should be prepared proactively where potential risk is identified. Each LAP should be endorsed by the relevant community committee and reviewed by safeguards focal points and SADAR prior to implementation.

Core Elements of a Livelihood Action Plan (LAP)

250. Each Livelihood Action Plan (LAP) must contain the following elements. These provide a structured approach for identifying, mitigating, and monitoring any livelihood-related risks resulting from project interventions that affect land or resource access. The content should be tailored to the specific site and developed through a participatory process.

Site and Intervention Description

251. This section should describe the physical location, type and scope of the project activity that may give rise to livelihood impacts. It must clearly indicate how the intervention interacts with existing land or resource uses (e.g. grazing, farming, water access) and whether this may alter or limit such use.

Identification of Affected Groups

252. Affected individuals, households, or user groups must be identified and described, with specific attention to vulnerable groups such as internally displaced persons (IDPs), minority clans, Somali Bantu communities, women-headed households or seasonal users. The process should rely on participatory mapping and community input to ensure informal and customary users are also recognised.

Nature and Scope of Impact

253. This should provide a clear characterisation of the expected impacts on livelihoods, including the type (e.g. reduced access, relocation, restricted use), scale (household, group, or community), duration (temporary or permanent) and severity (partial or full disruption). Where uncertainty exists, it should be explicitly stated and considered in mitigation planning.

Engagement and Disclosure Process

254. Summarise how affected groups were informed of the proposed activity and how they participated in identifying risks and shaping mitigation responses. This should include the timing, methods and language of engagement, and document how information was shared and any agreements or objections raised by stakeholders.

Mitigation Measures

255. Detail the specific steps that will be taken to avoid or minimise negative impacts, including possible exclusion criteria, redesign of activities, relocation of works or negotiated access arrangements. Where residual impacts remain, outline compensation or support options to be provided in line with the principle of restoring livelihoods to at least pre-impact levels.

Livelihood Support Measures

256. Identify targeted assistance to support affected individuals or groups in maintaining or restoring their livelihoods. This may include temporary income support (e.g. prioritised access to Cash-for-Work), provision of tools, seeds or livestock, alternative access to natural resources or training in sustainable practices.

Monitoring and Oversight

257. Explain how the implementation of the LAP will be tracked and evaluated. This includes identification of key indicators, frequency of monitoring, responsible actors (e.g. SADAR focal points, community committees) and mechanisms for reporting and adjusting measures based on implementation feedback.

Grievance Redress Access

258. Describe how affected groups will be informed of and supported to use the project's grievance redress mechanism (GRM). This should include local access points, confidentiality assurances and the process for addressing complaints related to land, resource access or livelihood disruption.

259. All LAPs must be reviewed and approved by safeguards focal points at the district level and validated by the relevant community structures before implementation begins. They must also be updated as needed if project design or site conditions change.

Guidance on potential approaches to mitigate identified impacts

Mitigation Type	Strategy	Examples of Application
Avoidance	Adjust activity design, location or timing to prevent displacement.	Relocate drainage works away from cultivated fields. Exclude portion of grazing area from rezoning
Access Agreements	Negotiate seasonal or shared-use arrangements that preserve livelihoods.	Allow rotational grazing in restored rangeland zones.
Inclusion in CfW Schemes	Prioritise affected individuals for Cash-for-Work opportunities.	Temporary employment and/or training for those losing access to farming or grazing land.
Alternative Resource Access	Provide equivalent access to water, land or grazing elsewhere.	Allocate nearby communal land for relocated grazing.
Livelihood Support Packages	Offer transitional support such as seeds, tools or technical training.	Seed distribution and training for new planting zones.
Phased Implementation	Introduce restrictions gradually, allowing time for adaptation.	Stepwise zoning of grazing areas with community input.
Participatory Monitoring	Establish mechanisms to track whether impacts are occurring as predicted.	Community committee feedback on grazing restrictions.
GRM and Conflict Mediation	Use grievance redress and local dispute mechanisms to address emerging issues.	Mediation facilitated through traditional leaders or SADAR focal points.

Implementation and Oversight of Livelihood Action Plans

260. Livelihood Action Plans (LAPs) are not only technical documents but operational tools that must be actively applied and monitored throughout project implementation. This section outlines the process by which LAPs will be prepared, validated, implemented and updated to ensure safeguards compliance and equitable outcomes for all affected communities.

261. LAPs will be triggered where project activities — such as land-use changes, zoning restrictions or infrastructure siting — pose a risk of disrupting access to land or natural resources used for livelihoods. The need for LAPs will be determined during site-level screening and stakeholder engagement processes, and guided by this ESMF.

262. Each LAP will be:

- prepared by SADAR district safeguards focal points in close coordination with affected communities;
- validated through inclusive engagement with community committees and disclosed locally;
- implemented in tandem with the relevant project activity, ensuring that mitigation and support measures are in place before impacts occur;
- monitored through regular field oversight, with key indicators tracked by SADAR, community structures and UNEP; and
- updated as necessary to reflect evolving project designs or new risks, particularly where adaptive measures such as site relocation or redesign are applied.

263. Oversight responsibility rests with SADAR safeguards focal points and UNEP, who will jointly ensure that LAPs are prepared to the required standard, reflect meaningful consultation and remain living documents throughout implementation.

264. All LAPs must be aligned with the project's GRM, stakeholder engagement protocols and adaptive management processes outlined in this ESMF.

Appendix 2: Grievance Redress Mechanism

Project level GRM

Purpose and Scope

265. This project level GRM provides a clear and locally appropriate process for raising, addressing, and documenting project-related complaints. It applies across Beledweyne, Jowhar, and Afgoye, and is designed to meet compliance requirements under UNEP's ESSF and the AF's ESP and Gender Policy. The mechanism is accessible to all stakeholders, including affected persons, workers, and representatives of marginalised groups, including minority clans, pastoralist communities, and persons with disabilities. The GRM covers concerns related to exclusion, environmental and social impacts, community safety, labour conditions, and access to project benefits.

Structure and Local Implementation

266. Site-Level Procedures

- Each site will have a designated GRM focal point from the delivery team or local partner staff and grievances can be submitted:
- Verbally to the focal point or a trusted community intermediary;
- In writing via a locked grievance box at a visible public location (e.g. school, district office, worksite);
- By SMS or phone using a project number posted on-site.
- Complaints will be received in Somali or Maay. Verbal channels ensure access for low-literacy groups.
- Where appropriate and non-sensitive, the focal point may seek resolution with input from local structures (e.g. elders, village committees), with the complainant's agreement.

267. PMU-Level Oversight

- The PMU will maintain a consolidated grievance register and monitor follow-up actions.
- The grievance register will include the following core fields: date received, location, method of submission (verbal, written, SMS, grievance box), brief summary of complaint, status (open, resolved, escalated), and action taken.
- A GRM Committee, comprising UNEP, Sadar, and civil society representatives, will review unresolved or complex cases on a biannual or as-needed basis.
- All grievances, except SEA/SH cases, will be logged and tracked through the central register. Confidentiality will be ensured by the GRM focal point on request. No retaliation will be tolerated.

Table 24. Grievance handling process and timeframes

Step	Action	Timeline
1	Complaint received and acknowledged by site focal point	Within 2 working days
2	Initial review and informal resolution attempted where appropriate	Within 5 working days
3	If unresolved, referral to PMU for investigation and formal resolution	Within 14–30 working days
4	Complainant informed of decision and outcome logged	Within 5 working days
5	If not resolved, complainant may escalate to external mechanisms including UNEP and AF	As needed

SEA/SH Complaints

268. SEA/SH-related complaints will be handled confidentially and will not be processed through community structures. Focal points will refer such cases to established GBV support services. No investigation will be conducted by project personnel, excluded from grievance records and only reported in aggregate.

Accessibility and Disclosure

269. All grievance procedures will be introduced during community engagements and displayed using simple Somali language posters and fixed placards at public points in each site. Verbal communication during engagements will be used to ensure awareness among groups with low literacy or limited access to written information. Focal points will take active steps to ensure that women, minority groups, and persons with disabilities are aware of and able to use the GRM.

Monitoring and Reporting

- Site focal points will maintain grievance logs and submit monthly updates to the PMU.
- The PMU will maintain a digital register and track resolution timelines and outcomes.
- Summary data on grievances and resolutions will be included in UNEP and AF reporting.

UNEP SRM

270. In addition to the project level GRM, individuals and communities affected by projects that are subject to UNEP's ESSF have access to the UNEP Stakeholder Response Mechanism (SRM) as a process for resolving concerns and disputes. This mechanism serves as an alternative pathway to the project-level GRM, providing stakeholders opportunity to submit complaints directly to UNEP if project-level solutions have not resolved their issues. Information on the UNEP SRM will be disseminated with the project level GRM.

271. The SRM operates under the following guiding principles:
- **Adherence to the Environmental and Social Sustainability Framework (ESSF):** The SRM addresses potential breaches of the ESSF in UNEP-funded projects and works to resolve complaints related to environmental and social safeguards.
- **Neutral and Proactive Mediation:** As an independent third party, the SRM facilitates dispute resolution in a fair and impartial manner.
- **Transparency and Accessibility:** The SRM maintains a public record of complaints and progress while safeguarding the confidentiality of complainants and minimizing any risk of retaliation.
- **Cost-Free Access:** The SRM is free of charge and widely advertised to ensure awareness and ease of use for all stakeholders.

How Stakeholders Can Access the UNEP SRM

272. Stakeholders who believe they have been adversely affected by UNEP-funded projects or activities and have already utilised local or project-level grievance mechanisms can submit complaints to the UNEP SRM. This ensures that concerns are escalated when local solutions are not satisfactory.

273. To file a complaint, stakeholders can access the SRM in several ways:
1. **Online Form:** Complaints can be submitted through an online project concern form, available in English, Arabic, Chinese, French, Russian, and Spanish, on the UNEP website.
2. **Email:** Complaints can be sent via email to the Independent Office for Stakeholder Safeguard-Related Response (IOSSR) at: unep-iossr@un.org.
3. **Mail:** Complaints can also be submitted by mail to:

Independent Office for Stakeholder Safeguard-related Response (IOSSR)
Corporate Service Division, UNEP
P.O. Box 30552, 00100
Nairobi, Kenya

274. While anonymous complaints are not accepted, complainants can request that their identity remains confidential, and appropriate measures will be taken to prevent retaliation.

Complaint Processing and Resolution Pathways

275. Once a complaint is received, it is acknowledged within 10 business days and screened for eligibility within 30 business days. Eligible complaints can proceed through one of two pathways:
1. **Compliance Review:** A thorough investigation into whether UNEP activities comply with the ESSF.
2. **Dispute Resolution:** A process designed to resolve disputes through neutral mediation or other resolution methods.

276. The IOSSR manages these processes and engages independent experts where necessary. Throughout the process, complainants are kept informed, and relevant reports and decisions are made publicly available through the SRM's public registry.

Appendix 3. Labour Management Plan (Template)

Project: Enhancing Adaptation and Resilience through Nature-based Solutions in Somalia (EARNSS)
Site/District: [Insert Location]
Implementing Partner/Contractor: [Insert Entity]
Date: [Insert Date]

Purpose and Applicability

277. This Labour Management Plan (LMP) outlines measures to ensure fair, safe, and lawful working conditions for all project workers, including:
- Direct workers (e.g. SADAR staff, district focal points);
- Community labourers (e.g. through Cash-for-Work (CfW) activities);
- Contracted workers (e.g. skilled labour, local service providers);
- Volunteers or informal participants mobilised through the community.

278. It applies to all labour engagement under the EARNSS project, in line with Somalia's Labour Code (revised 2019), ILO core labour conventions, UNEP SS8 and AF ESP Principle 6.

Legal and Policy Framework

279. This plan adheres to the following:
- **Somalia Labour Code (2019)**: Prohibits forced and child labour, mandates safe working conditions, and outlines minimum wage and working hour protections.
- **ILO Core Conventions**, including:
  - C138 – Minimum Age (15 years);
  - C182 – Worst Forms of Child Labour;
  - C100 & C111 – Equal Remuneration and Non-Discrimination;
  - C87 & C98 – Freedom of Association and Collective Bargaining.
- **UNEP Environmental, Social and Sustainability Framework – SS8**
- **Adaptation Fund Environmental and Social Policy – Principle 6**

Working Conditions and Terms
- **Working Hours**: Maximum of 8 hours/day and 48 hours/week. Overtime must be voluntary and compensated.
- **Rest Breaks**: Minimum of one rest day per week; 30-minute break after 5 hours of continuous work.
- **Wages**: CfW rates must reflect local market norms and be paid in full within 14 days of work.
- **Equal Opportunity**: No discrimination on the basis of clan, gender, age, disability, or displacement status.
- **Prohibition of Forced Labour**: All engagement must be voluntary.

Child Labour Prevention
- **Minimum Age**: No person under **15 years** shall be engaged in any form of labour.
- **Verification**: Implement age verification through ID, school records, or community validation.
- **Hazardous Work**: Youth under 18 may not be engaged in any hazardous work or manual labour under CfW.

Occupational Health and Safety (OHS)
- **Site Risk Assessment**: Prior to work commencement, basic assessment of potential hazards.
- **Training**: Workers to receive short orientation on safety procedures.
- **Protective Equipment**: Gloves, boots, or tools provided depending on task (e.g. excavation, bunding).
- **Supervision**: A responsible supervisor must be present at worksites.
- **First Aid**: Kits must be present at work locations; referral procedures for accidents established.

Code of Conduct

280. All workers, supervisors and contractors must comply with the project's Code of Conduct, which outlines expected standards of respectful, non-discriminatory, and safe behaviour. The Code addresses issues such as harassment, SEA/SH, child protection, and respect for local customs. It must be introduced and explained to all workers prior to deployment, and visibly posted at worksites in Somali. Breaches of the Code may result in removal or other disciplinary action and can be reported through the GRM. A generic code of conduct is attached at the bottom of the LMP template.

Labour Grievance Access
- **Access to GRM**: Workers may raise complaints through the established project GRM.
- **Confidentiality**: Labour complaints can be submitted confidentially through any recognised channel (verbal, box, SMS).
- **Resolution**: All labour-related grievances must be addressed within 30 days.

Roles and Responsibilities

281. Clear delineation of roles and responsibilities is essential to ensure effective implementation of this LMP. All entities involved in labour deployment — including site supervisors, implementing partners, safeguards staff and grievance focal points — must understand and uphold their obligations. The table below outlines the core functions assigned to each actor engaged in labour oversight and management under the project.

Role	Responsibility
Site Supervisor	Ensure safe conditions, monitor attendance and pay
GRM Focal Point	Receive labour-related grievances and ensure resolution
Safeguards Officer	Conduct periodic spot checks and verify compliance
Contractor/Partner Lead	Ensure all workers meet minimum standards and are briefed on their rights

Monitoring and Reporting

282. Ongoing monitoring and documentation are essential to verify compliance with labour standards and identify emerging issues during project implementation. Monitoring responsibilities will be shared between implementing partners, site supervisors and safeguards focal points, with regular reporting to the PMU. Data collected will inform safeguards oversight, grievance follow-up, and Adaptation Fund reporting. The responsible parties (including site supervisor, safeguards officer and contractor) are required to:

- Maintain a **labour register** for all CfW and contracted workers: name, age, contact, days worked, payment status.
- Record and track grievances using GRM logs.
- Monitor:
  - Share of women and youth among workers;
  - Worksite safety observations;
  - Any reported violations.

Generic Code of Conduct

283. This Code of Conduct applies to all individuals engaged in the project, including staff, consultants, contractors, service providers and community-based facilitators. It outlines the minimum expected standards of conduct, aligned with the UNEP ESSF, Policy on Preventing and consistent with the Adaptation Fund's Environmental and Social Policy and the UNEP Policy on Preventing Sexual Exploitation, Abuse and Harassment (PSEAH).

284. This Code of Conduct will be translated into Somali and any other locally relevant languages to ensure full comprehension. Verbal explanation and support will be provided where literacy or language barriers may limit understanding. All personnel are required to confirm their understanding of the contents prior to signing.

285. By signing this Code of Conduct, I agree to the following commitments:

Respectful and Ethical Behaviour

- I will treat all people — including colleagues, community members and project participants — with dignity, courtesy and fairness, regardless of gender, age, ethnic identity, religion, disability, displacement status or social position.
- I will not engage in any form of discrimination, verbal abuse, intimidation or behaviour that could cause discomfort or harm.

Zero Tolerance for Sexual Exploitation, Abuse, and Harassment (SEAH)

- I will not engage in, encourage or tolerate any form of SEAH.
- I will never request or accept sexual favours in exchange for project benefits, employment or support.
- I understand that sexual activity with anyone under the age of 18 is strictly prohibited, regardless of legal majority, consent or local customs.
- I will report suspected SEAH incidents through the designated reporting channels and treat all allegations confidentially.

Prohibition of Abuse of Power and Labour Exploitation

- I will not misuse my role or influence to gain personal advantage or pressure others.
- I will ensure that all labour under the project — including Cash-for-Work — is conducted voluntarily and under safe and fair conditions.
- I will never tolerate child labour, forced labour or unpaid work in any form.

Safe and Culturally Sensitive Conduct in Communities

- I will respect local traditions, community norms, and leadership structures.
- I will not enter private spaces, schools or gender-specific areas without permission or appropriate accompaniment.
- I will communicate respectfully and refrain from coercive or manipulative behaviour in all interactions.

Adherence to Health, Safety and Environmental Protocols

- I will comply with all project health and safety measures, including those related to fieldwork, transport and infectious disease prevention.

- I will promptly report accidents, unsafe practices or environmental damage to the appropriate authority.
- I will avoid actions that harm ecosystems and contribute actively to the project's environmental protection goals.

Duty to Report and Cooperate

- I will report any observed or suspected breach of this Code of Conduct — including my own — using the project's grievance redress mechanism or by informing a designated focal point.
- I will not retaliate against individuals who report concerns in good faith.
- I understand that non-compliance with this Code may result in disciplinary action, including dismissal, contract termination or legal referral where applicable.

Acknowledgement

286. I, the undersigned, confirm that I have read and understood this Code of Conduct. I agree to uphold all responsibilities described herein while participating in any activity related to the project. These commitments apply across all project locations, including during community interactions, travel and off-site engagements.

Full Name: _____
Role/Position: _____
Signature: _____
Date: _____

Appendix 4: Environmental and Social Impact Assessment (ESIA) – Outline

287. This outline provides the recommended structure for an Environmental and Social Impact Assessment (ESIA) for project activities that require detailed assessment under the Somalia Environmental Protection and Management Act (2024) and associated ESIA Regulations. The outline is aligned with UNEP's Environmental, Social and Sustainability Framework (ESSF), the Adaptation Fund Environmental and Social Policy (ESP), and is consistent with national procedures for Category B projects.

1. Executive Summary

288. Concise summary of key risks and impacts, mitigation strategies, alternatives considered, and recommended actions.

2. Introduction

- Objectives and scope of the ESIA
- Proponent and regulatory context
- Linkage to the project's Environmental and Social Management Framework (ESMF)

3. Project Description

- Project location and site layout (maps, coordinates)
- Key features, scale and design elements of the intervention
- Activity phases:
  - Pre-construction (e.g. land preparation, mobilisation)
  - Construction (e.g. infrastructure works, excavation)
  - Operation (e.g. use and maintenance of infrastructure)
  - Decommissioning or closure (if applicable)
- Ancillary infrastructure (e.g. roads, camps, borrow pits, materials sourcing as applicable)

4. Analysis of Alternatives

- **'With and Without Project' scenario**: assessment of expected social and environmental conditions in the absence of the project
- Alternative locations, designs, or technologies considered
- Trade-offs and rationale for selected approach

5. Baseline Environmental and Social Conditions

- **Physical**: topography, climate, hydrology, soils, natural hazards
- **Biological**: ecosystems, species, habitat conditions
- **Social**: demographics, livelihoods, land tenure, gender and inclusion
- **Cultural**: physical or intangible heritage, community values
- Identification of sensitive receptors and vulnerable groups

6. Stakeholder Engagement

- Consultation process (timing, methods, participants)
- Key issues raised by stakeholders
- Responses and incorporation into assessment
- Plans for continued engagement and information disclosure

7. Environmental and Social Impact Assessment

289. Assessment of potential positive and negative impacts during:

- **Pre-construction**: land access issues, vegetation clearance, influx
- **Construction**: noise, dust, water contamination, labour risks, disruption to land use, safety hazards
- **Operation**: infrastructure performance, access to services, environmental flows, long-term safety
- **Decommissioning**: reinstatement, waste disposal, livelihood implications

290. Each impact will be analysed in terms of:

- Magnitude, extent, duration and reversibility
- Sensitivity of affected receptors
- Cumulative and indirect effects
- Significance before mitigation

8. Mitigation and Enhancement Measures

- Phase-specific mitigation measures for each significant impact
- Avoidance, reduction, compensation or offset strategies
- Responsibilities and design integration

- Enhancement measures to maximise project benefits (e.g. employment, ecosystem services)

9. Environmental and Social Management Plan (ESMP)
- Mitigation and monitoring matrix (by phase and impact)
- Institutional responsibilities and supervision structure
- Capacity needs and training plans
- Timeline and budget for safeguards implementation
- Reporting and verification mechanisms
- Linkages to cross-cutting plans (GAP, LMP, GRM, SEP)

10. Grievance Redress Mechanism
- Summary of the project GRM
- Procedures for grievance submission and resolution
- Referral pathways for sensitive complaints (e.g. SEA/SH)

11. Conclusion and Recommendations
- Summary of key risks and mitigations
- Residual risks and safeguards adequacy
- Recommendations for decision-making and monitoring

12. Annexes
- Maps and site photos
- Records of stakeholder engagement
- Technical assessments (hydrology, biodiversity, etc.)
- Screening forms and permits (if applicable)

Annex 5: Gender Assessment and Action Plan

Glossary

Unit/Abbreviation/Acronym	Definition
CARE	Cooperative for Assistance and Relief Everywhere
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
EiE	education in emergency
FGM	female genital mutilation
GBV	gender based violence
GII	Gender Inequality Index
GoFS	Government of the Federal Republic of Somalia
GPE	Global Partnership for Education
HoA	Horn of Africa
IDP	internally displaced person
IPCC	Intergovernmental Panel on Climate Change
MoECHE	Ministry of Education, Culture and Higher Education
MoPIED	Ministry of Planning and Economic Development
MoWHRD	Ministry of Women and Human Rights Development
NAP	National Adaptation Plan
NDP	National Development Plan
NGO	Non-governmental organisation
SDG	Sustainable Development Goal
SDGEA	Solemn Declaration on Gender Equality in Africa
SEAH	Sexual exploitation and harassment
UN	United Nations
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VSLA	Village Savings and Loans Association
WASH	Water, sanitation and hygiene

Gender Analysis

291. This analysis provides an overview of the gender dynamics in Somalia, with particular attention to intersections between natural resource use and the differentiated impacts of climate change on men's and women's livelihoods. The analysis was undertaken during the development of an Adaptation Fund (AF) funding proposal for a project titled 'Enhancing Adaptation and Resilience through Nature-based Solutions (EARNSS) in Somalia' using available data from, *inter alia*, the Government of the Federal Republic of Somalia (GoFS), donor agencies and multilateral development banks. Relevant to the proposed project, this analysis will discuss the role of gender in themes including: i) gender equality and empowerment; ii) international and regional commitments; iii) national commitments, legal rights and the status of women; iv) the role of gender in decision-making; v) education and literacy; vi) economic opportunities and employment; vii) women's access to and control over resources; and viii) gendered impacts of climate change.

Gender equality and women's empowerment

292. Women comprise 49% of Somalia's ~18.3 million population[11]. The country is predominantly Sunni Muslim and Islamic principles are deeply embedded in formal and informal governance systems. Islamic jurisprudence formally affirms certain rights for women — including access to education, property and consent in marriage — but their practical realisation is largely constrained by patriarchal interpretations and entrenched clan hierarchies[12]. Somalia's legal framework constitutes a pluralistic mix of statutory, customary (*Xeer*) and religious law, with clan-based structures holding considerable authority in mediating rights[13].

293. Gender inequality in Somalia is being exacerbated by climate change. Women — particularly in rural areas — typically head household chores with limited financial and basic resources. Women-headed households are responsible for growing food, gathering fuel, collecting water, cooking and raising children, yet have unequal access to resources and limited participation in decision-making[14]R. In addition, drought-induced livestock losses leave many Somali men without viable income streams, shifting some women into income-generation — by selling goats or through casual labour — while men turn to substance

[11] UNDP. 2025. Human Development Reports: Somalia. Available at: https://hdr.undp.org/data-center/specific-country-data. Accessed on 26 May 2025.
[12] UNICEF. 2002. Women's Rights in Islam and Somali Culture. https://land.igad.int/index.php/documents-1/countries/somalia/gender-4/899-women-s-rights-in-islam-and-somali-culture/file
[13] Abdullahi AM. 2016. Somalia: Historical Phases of the Islamic Movements. *Somali Studies*, 1: 19–49.
[14] UNDP. n.d. Enhancing Climate Resilience of the Vulnerable Communities and Ecosystems in Somalia. Available at https://www.adaptation-undp.org/projects/enhancing-climate-resilience-vulnerable-communities-and-ecosystems-somalia

abuse or migration[15]. These gendered responsibilities increase women's vulnerability to climate extremes.

294. Gender inequality is reflected in national development indicators. In 2023, Somalia recorded a Gender Inequality Index (GII) of 0.675, ranking 170 out of 172 countries (with the 172nd rank being the least gender equal)[16]. The GII measures gender-based disadvantage across reproductive health, empowerment and labour market participation, with a maximum value of '1' indicating complete inequality. Somalia's Gender Development Index (GDI) is 0.79[17], signalling disparities in life expectancy, education and income between women and men. These metrics confirm the persistence of structural gender inequality and underscore the need for targeted, gender-responsive adaptation interventions.

International and regional commitments

295. Somalia has ratified several regional and international agreements that focus on advancing women's empowerment and promoting gender equality and equity. At the global level, the country is a United Nations (UN) signatory to the Beijing Declaration and Platform for Action (1995). As a UN member it is committed to the 2030 Agenda and the Sustainable Development Goals (SDGs). Somalia is also signatory to the Arab Charter on Human Rights (2004) and is an African Union member. Moreover, the country has signed the Maputo Protocol on Women's Rights in Africa but has yet to ratify this protocol.

296. The United Nations (UN) Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) is a legal instrument to guide countries towards gender equality[18]. Introduced in 1979, it obliges signatory states to eliminate all forms of discrimination against women and girls and promotes the equal enjoyment of rights between men and women[19]. Its scope makes CEDAW an actionable tool for developing policies that protect the rights and promote the full participation of women and girls. Notably, Somalia remains one of the few countries that has not yet ratified the Convention[20]. Further details on international and regional commitments that Somalia has ratified are discussed in Table.

297. An increasing number of organisations and initiatives are addressing the intersection of gender and climate vulnerability in Somalia. Somalia's first UN Gender Equality Strategy (2021–2025)[21] and the UN Development Programme's (UNDP) Gender Equality Strategy (2023–2026)[22] emphasise building women's resilience in agriculture and resource management. In addition, ongoing pilot projects train rural women in flood-resilient agriculture and microfinance. Nonetheless, gender concerns remain under-prioritised in practice[23,24].

Table 25. International and regional gender-related agreements Somalia has ratified.

Commitment	Date	Overview
Beijing Declaration and Platform for Action[25]	1995	The Beijing Declaration and Platform for Action is a global agenda adopted at the Fourth World Conference on Women to advance women's rights and gender equality. It outlines strategic objectives and actions for governments, multilateral institutions, civil society and communities to address areas such as education, health, economic participation and the environment. The Platform emphasises eliminating gender disparities in education and healthcare, promoting women's leadership and ensuring sustainable management of natural resources. It remains a foundational framework guiding Somalia's gender equality efforts by advocating systemic reforms to dismantle structural barriers affecting women and girls
2030 Agenda for Sustainable Development[26]	2015	The 2030 Agenda for Sustainable Development — adopted by all UN Member States including Somalia, provides a universal framework to eradicate poverty — reduce inequalities and promote prosperity while conserving ecosystems. This goal is supported by 37 gender-related targets embedded across nine other SDGs, reflecting the cross-cutting nature of gender equality in sustainable development. Somalia's commitment to the 2030 Agenda integrates gender equality as a priority in National Development Plans (NDPs) and UN programming frameworks.
African Charter on Human and People's Rights (ACHPR) on the Rights of Women in Africa (Maputo Protocol)[27]	2003	The Maputo Protocol, adopted by the African Union, is a legally binding regional instrument dedicated to protecting and promoting women's rights across Africa. It addresses the elimination of discrimination and harmful practices, guarantees women's rights to education, health, economic and social welfare and ensures their participation in political and decision-making processes. The Protocol also mandates measures to combat gender-based violence (GBV) and promote reproductive rights. Somalia has signed but not yet ratified the Protocol, reflecting ongoing challenges in fully institutionalising these commitments within national law and policy frameworks.

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International Covenant on Civil and Political Rights (ICCPR)[28]	1966	The ICCPR was established and made available for signature, ratification and accession via the General Assembly resolution 2200A (XXI) on 16 December 1966. This Covenant, along with the International Covenant on Economic, Social and Cultural Rights (ICESCR), expands on the rights articulated in the Universal Declaration of Human Rights. The ICCPR endeavours to safeguard rights to freedom of expression, assembly and participation in public affairs, which are necessary for advancing gender equality. Nations that are parties to the Covenant have the option to join one or both of its two Optional Protocols. Somalia ratified the ICCPR on 24 January 1990 and has also acceded to its First Optional Protocol, which allows individuals to submit complaints to the UN Human Rights Committee alleging violations of their rights. However, Somalia has yet to submit its initial report and has not been reviewed by the Committee.
International Covenant on Economic, Social and Cultural Rights (ICESCR)[29]	1990	The ICESCR comprises civil, political, economic and social rights. It includes specific safeguards to protect the rights of women. The Economic, Social and Cultural Rights (ESCR) specifically encompass the rights to work, education, health, social security, adequate housing, food, water, sanitation and participation in cultural life. Somalia ratified the ICESCR on 24 January 1990. The Covenant obliges states to progressively realise these rights and to take steps to eliminate discrimination against women in accessing basic services and opportunities.
Committee Against Torture (CAT)[30]	1984	The CAT, adopted by the UN General Assembly in 1984, prohibits torture and other cruel, inhuman, or degrading treatment. It explicitly recognises violence against women — including sexual abuse, rape, forced marriage and female genital mutilation (FGM) — as forms of torture or ill-treatment. Somalia ratified the CAT on 23 February 1990, thereby committing to prevent and punish such acts. However, Somalia has not ratified the Optional Protocol to the CAT, which would establish an international inspection mechanism to monitor places of detention and prevent torture. This limits external oversight and accountability regarding torture and GBV in the country.
The African Charter on Human and Peoples' Rights (ACHPR)[31]	1981	The African Charter on Human and Peoples' Rights, also known as the Banjul Charter, is a foundational regional human rights instrument adopted by the Organisation of African Unity (now the African Union) in 1981. It enshrines a broad spectrum of rights, including civil, political, economic, social, cultural and collective rights. Somalia ratified the Charter in 1986 and is thus legally bound to uphold its provisions. The Charter establishes the African Commission on Human and Peoples' Rights to monitor compliance; however, Somalia has yet to submit periodic reports or host commission missions, reflecting ongoing challenges in governance and human rights monitoring. The Charter provides a regional framework that complements global human rights instruments and supports the protection of women's rights within Somalia's legal context.
African Union (AU) Solemn Declaration on Gender Equality in Africa (SDGEA)[32]	2004	The SDGEA is a political commitment by AU Member States, including Somalia, to accelerate gender equality and women's empowerment across Africa. It outlines the elimination of discriminatory customary practices and the promotion of women's rights to land, education, property, inheritance and housing. While Somalia is a signatory to SDGEA, it has been noted for limited progress in domestication and reporting on the declaration's implementation, particularly regarding the integration of the Maputo Protocol on the Rights of Women in Africa. The Declaration remains a relevant framework for guiding Somalia's gender equality agenda, emphasising the need for legal reforms and institutional strengthening to address persistent gender disparities.
IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI)[33]	**2013**	The IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI) is a regional strategy launched to address recurrent droughts and build long-term resilience in the Horn of Africa, including Somalia. It emphasises sustainable development, multi-sectoral coordination and community empowerment to reduce vulnerability to climate shocks. The strategy integrates gender equality by promoting women's participation in decision-making processes, gender-disaggregated data collection and measures to increase women's representation in leadership roles within IDDRSI structures, such as coordination units and governance bodies. Furthermore, the strategy collaborates with gender ministries and organisations such as UN Women to strengthen institutional capacity for gender-responsive budgeting and programming in Somalia.

National commitments, legal rights and the status of women

298. Somalia's national legal and policy framework includes binding laws and strategic planning instruments to advance gender equality. The 2012 Provisional Federal Constitution prohibited discrimination, affirmed women's representation in public institutions, banned FGM and granted special labour protections for female workers[34]. This constitutional framework has been reinforced through national development planning. For example, Somalia's first National Development Plan (2012–2016) included gender as a cross-cutting priority[35] and in 2016, the government adopted a ten-year National Gender Policy[36], coordinated by the Ministry of Women and Human Rights Development (MoWHRD). These frameworks, detailed in Table, establish an enabling policy environment for gender equality in Somalia. However, the practical implementation of gender equality commitments remains constrained by the influence of clan governance systems and customary law. These informal institutions operate alongside statutory frameworks and frequently override them in practice, particularly at the community level.

Clan governance and customary law

299. Men and women's political legitimacy and social authority is institutionalised through Somalia's clan-based governance system and customary law. At the communal level, male clan elders and religious leaders continue to dominate decision-making forums while women are rarely included in *Xeer* negotiations, conflict resolution and peace processes[37]. When it

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comes to deciding women's political involvement, 77% of Somalians regard clan leaders and elders as the most influential group[38]. In contrast, fewer recognise the influence of community forums (24%), civil society (21%) and international communities (18%)[39]. Women have historically been perceived as transient members within these clan systems and are often relegated to the peripheries of political decision-making processes. Where women do participate — through women's groups, civil society networks or as informal advisors to male relatives — their influence is indirect and contingent on existing relationships rather than formal authority[40]. Given women's marginalisation within clan and customary institutions, efforts to promote gender equality should contend with cultural norms and the formal structures of state-building — particularly in the post-2000 period of constitutional reform and transitional governance.

Table 26. Legal rights and status of women in Somalia.

Commitment	Date	Overview
Provisional Constitution[41]	2012	The 2012 Provisional Constitution of Somalia establishes a legal framework guaranteeing gender equality and the protection of women's rights. Several articles within the constitution address these themes. • Article 11 prohibits discrimination on the basis of sex, clan, or other statuses, affirming equal rights for all citizens. • Article 3 mandates the effective inclusion of women in all national institutions, including elected and appointed positions across government branches and independent commissions. • Article 24 protects women workers from sexual abuse, segregation and discrimination, requiring all labour laws and practices to uphold gender equality in the workplace. • Article 15(4) bans FGM, declaring it a cruel and degrading practice. • Article 27 commits to special support for women and minorities to realise socio-economic rights. Despite these constitutional guarantees, implementation remains uneven, with cultural, institutional and security challenges limiting their full realisation.
The Provisional Constitution of the Jubaland State of Somalia[42]	2015	The Jubaland State's 2015 Provisional Constitution explicitly safeguards women's human rights, economic entitlements and political liberties, as outlined in Article 16. It reinforces the commitment to gender equality within the regional governance framework, ensuring women's rights are recognised and protected in line with national and international standards. This regional constitution complements the federal framework by emphasising women's participation and protection at the subnational level.
The Transitional Constitution of the Puntland Regional Government[43]	2001	The Puntland Regional Government's 2001 Transitional Constitution mandates the protection of women's rights to autonomy, socio-economic participation and political engagement, as stipulated in Article 18.1. However, these rights are conditioned on their compatibility with Sharia law, reflecting the region's legal pluralism. Puntland has taken steps to legislate against harmful practices, such as passing a law banning the most severe form of FGM (Pharaonic circumcision), though some less harmful forms remain permitted. The Constitution also includes provisions for women's access to justice and special protections within the legal system. Nonetheless, the interplay between customary, religious and formal laws continue to influence the realisation of women's rights in Puntland.
Penal Code of 1962[44]	**1962**	The Penal Code of 1962 is applied in Somaliland and Puntland. As there is no specific law that addresses domestic violence in Somalia, the Penal Code addresses challenges such as assault, battery and rape. Article 398 criminalises rape, with a sentence of five to 15 years imprisonment. However, there are no explicit laws against spousal rape.

300. Beyond constitutional and legal protections, Somalia has developed national strategies and policy instruments to support the operationalisation of gender equality goals. These include long-term national development plans, sectoral strategies and civil society–led frameworks that provide direction and benchmarks for action. The development frameworks and strategies are outlined in Table.

Table 27. National plans and strategies relevant to gender equality and the social inclusion of women in Somalia.

Plan/strategy	Date	Overview
Women, Peace and Security (WPS) National Adaptation Plan (NAP)[45]	2015 (updated 2023)	Somalia's Women, Peace and Security National Action Plan (NAP), initially launched in 2015 under UN Security Council Resolution 1325, emphasises women's meaningful participation in peacebuilding, security sector reform and community reconciliation. The 2023 updated draft expands the scope to include women's economic recovery and resilience, reflecting evolving priorities in post-conflict stabilisation. The NAP institutionalises gender-responsive approaches within security and governance sectors, promotes women's leadership in peace processes and addresses GBV. Implementation challenges remain, including political insecurity, limited resources and sociocultural barriers.
Voluntary National Reviews (VNR)[46]	2018 and 2022	The Voluntary National Reviews (VNRs) submitted in 2018 and 2022 report progress on identified gender-related targets, including maternal health (SDG 3.1), quality education (SDG 4) and female labour force participation (SDG 8.5). These reviews highlight persistent gender disparities exacerbated by conflict and

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[39] Rift Valley Institute. 2023. Enabling women's representation and participation in political dialogues in Somalia. Available at https://reliefweb.int/attachments/4f85f825-01a5-4a39-935b-c68b3a543823/RVI_Womens%20participation%20report_WEB.pdf

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[42] State Government of Jubaland. 2015. Provisional Constitution of the Jubaland State of Somalia. Available at https://moifar.gov.so/wp-content/uploads/2023/02/Jubaland-Provisional-Constitution-SO_Version.pdf

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[45] Ministry of Women and Human Rights Development (MoWHRD). 2023. The Somali Women's Charter and the Women, Peace and Security Agenda. Available at https://www.wpsnaps.org/app/uploads/2024/07/Somalia-NAP-2023.pdf

[46] Federal Government of Somalia. 2022. Voluntary National Review Report 2022. Available at https://www.undp.org/sites/g/files/zskgke326/files/2022-

		displacement but reaffirm commitments to gender-responsive budgeting and inclusive policies. The SDG framework of these reviews underpins Somalia's broader development strategy, promoting multisectoral coordination to advance women's empowerment and social inclusion.
National Gender Policy[47]	2016–2026	The GoFS's National Gender Policy, adopted in 2016 and spanning a decade, provides a strategic roadmap to promote gender equality and women's empowerment. Overseen by the MoWHRD, the Policy addresses economic empowerment, political participation, elimination of GBV and the eradication of FGM. It advocates for gender-responsive budgeting and legal reforms to institutionalise women's rights. While the policy framework is comprehensive, implementation is constrained by limited institutional capacity and ongoing insecurity. The Policy supports Somalia's commitments under international agreements and NDPs.
The Somali Women's Convention and Somali Women's Charter[48]	2019	In March 2019, the Somali Women's Convention convened over 350 women leaders, activists and stakeholders from Somalia and its diaspora to articulate a unified vision for women's rights and gender equality in peacebuilding and state-building. Developed jointly by MoWHRD and UNDP, the Somali Women's Charter is a civil society-led platform articulating women's collective demands for gender equality and inclusion. The resulting Somali Women's Charter promotes: • parity in participation across political and peace-building initiatives, which includes enforcing a 50% representation quota for women; • stronger legal protections against GBV, including enactment of the Sexual Offences Bill; • women's full involvement in justice and security sectors, with training for personnel on women's rights; • economic empowerment and guaranteed socio-economic rights for women; and • inclusion of women's priorities in NDPs and transitional justice processes. The Charter serves as an advocacy tool, platforming women's voices and influencing policy dialogues around gender. The Charter reflects the aspirations of Somali women to overcome systemic barriers and achieve substantive social, political and economic equality.
National Development Plan (NDP) 9[49]	2020–2024	NDP-9 outlines Somalia's strategic framework for economic growth, poverty reduction and social development for the period 2020–2024. It explicitly integrates gender equality and women's empowerment as cross-cutting themes across its three pillars: i) inclusive and accountable politics; ii) enhanced security and rule of law; and iii) inclusive economic growth and with advanced social development. The Plan prioritises women's entrepreneurship, girls' education and access to health services, aligning closely with the SDGs. It promotes gender empowerment in all sectors and emphasises social inclusion to address systemic inequalities. The NDP-9 also incorporates strategies to combat harmful practices such as FGM through legal reforms and public awareness campaigns.
Education Sector Strategic Plan (ESSP)[50]	2018–2020	The ESSP for 2018–2020 introduces specific gender benchmarks, including parity index targets to reduce disparities in enrolment and completion rates between boys and girls. The Plan outlines reforms to increase girls' access to education by constructing girls-only schools, providing stipends and incentives to female students and integrating gender-responsive content into curricula reforms. It also focuses on improving teacher training with an emphasis on recruiting and supporting female educators. The ESP aligns with national development goals and international commitments to promote inclusive and equitable quality education.
Five Year Puntland Development Plan – 3[51]	2020–2024	The Third Five-Year Development Plan of Puntland (2020–2024) mainstreams gender as a human rights challenge across all sectors and programmes. It operationalises gender equality through policies that: i) empower women socially and economically; ii) increase women's participation in decision-making; iii) condemn GBV and harmful practices; and iv) improve access to education and healthcare for women and girls. The Plan also focuses on expanding women's access to economic resources and opportunities, recognising gender equality as a precursor for sustainable regional development.
Action Plan for the Implementation of the Human Rights Roadmap (HRRM) for Somalia[52]	2015–2016	Following the adoption of the Human Rights Roadmap (HRRM) by the GoFS in 2013, the MoWHRD led a consultative process in 2014 to develop a detailed Action Plan for 2015–2016. This plan operationalises the roadmap's 17 thematic human rights challenges, including a dedicated focus on the rights of women, children and vulnerable groups. It outlines specific activities to improve access to justice, constitutional and legal reforms, protection of civilians and promotion of economic and social rights such as education and health. The Action Plan is implemented through a multi-agency partnership involving relevant ministries, UN agencies and international partners.
UNDP Somalia Gender Equality Strategy[53]	**2023–2026**	This strategy provides a coordinated framework for UN agencies to support Somalia's gender equality commitments, focusing on: i) removing structural barriers to women's economic autonomy; ii) preventing and responding to GBV; iii) promoting women's participation and leadership in all forms of decision-making; and iv) strengthening gender-responsive strategies in crisis prevention, preparedness and recovery.

301. Despite the existence of these legal frameworks and strategic plans, limited institutional capacity, a shortage of public financing and socio-cultural resistance has resulted in the inconsistent implementation of gender equality actions[54]. This gap between formal commitments and implementation is primarily influenced by entrenched customary and clan-based systems, which have considerable authority over political institutions, decision-making and resource access[55].

07/VNR%20Report%20Somalia_2022.pdf

[47] Ministry of Women and Human Rights Development (MoWHRD)and Government of the Federal Republic of Somalia (GoFS). 2015. Draft National Gender Policy. Available at https://www.mwhrd.gov.so/en/wp-content/uploads/2018/10/Draft-of-National-Gender-Policy-4.pdf

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[51] Puntland State of Somalia. 2020. Five-Year Puntland Development Plan – 3 (2020–2024). Available at https://www.researchgate.net/profile/Mohamed-Samantar/publication/352936687_Puntland_5_YEAR_Dev_Plan_-_Jan_28_2021/links/60e06fb6a6fdccb745034da7/Puntland-5-YEAR-Dev-Plan-Jan-28-2021.pdf

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The role of gender in decision-making

302. Gendered power relations in Somalia influence who participates in decision-making processes at the household, community and institutional levels. This Section examines the historical and structural exclusion of women from political decision-making as well as the role of non-governmental organisations (NGOs) and civil society in promoting women's political engagement.

Historical and structural exclusion of women from decision-making

303. As a result of prolonged civil conflict and the collapse of central authority, Somali men experienced unemployment, trauma or forced conscription into clan militias. Under these conditions, men were no longer able to fulfil their socially expected roles as breadwinners and protectors. Consequently, women and older children assumed a greater share of familial responsibility, shifting gender roles at the household level[56]. While women's economic contributions have increased in rural and urban areas, this has not resulted in commensurate increases in political power or visibility. Authority structures — particularly those embedded in customary and clan systems — are male-dominated, often excluding women from political negotiations and resource allocation processes. In many households, women's earnings are used to pay clan contributions and maintain familial honour, yet decision-making remains the primary responsibility of men. Despite women's increasing social and economic responsibilities, their participation in public decision-making processes remains limited. This is due to the risk of gender-based violence (GBV) and reputational harm in contexts where women's public visibility is stigmatised. These gendered exclusions support the maintenance of a patriarchal political order, underpinned by persistent socio-cultural norms that restrict women's visibility and authority in public life.

304. Men and women's decision-making capacity is further complicated by the social distinctions and resultant power dynamics between different groups of men — particularly young and old, minority clan members, socio-economic classes, settlements and regional origins. Equality and status are not afforded to all men, as social status is determined by ethnic and occupational identities. Both men and women who are designated as caste or outcast will subsequently be socially and politically marginalised[57]. These socially excluded individuals are considered the lower strata of Somali society and are limited to menial and culturally unfavourable occupations such as shoe-making and blacksmithing[58]. Matrimonial alliances with majority clan families are also considered prohibitive. For example, women who marry into different clans are often excluded from community decision-making within their new families[59]. While masculinity remains a powerful organising principle in Somali society, it is contested — with intersecting hierarchies of age, clan and socio-economic status creating differential access to decision-making among men. These exclusions reflect and reinforce the gendered authority of clan-based institutions.

Women's political participation

305. Women's representation in formal political institutions remains limited across federal, regional and district levels. In the 2021/2022 House of the People election in the Federal Republic of Somalia, women won 54 out of 275 seats, equivalent to 20%. This included:
- 13 out of 46 seats in Somaliland (28%);
- 13 out of 66 in South West (20%);
- 9 out of 37 in Galmudug (24%);
- 8 out of 46 in Jubaland (17%);
- 6 out of 37 in Puntland (16%);
- 5 out of 38 in Hirshabelle (13%); and
- 1 out of 5 in the Banadir Administrative Region (20%)[60].

306. At present, there are 14 women MPs in the Upper House of the Somali Parliament[61]. It is noteworthy that, of the 275 seats allocated to the Lower House, clan-based selections have resulted in the appointment of only 44 women. Women comprised just over half of the 48,535 voters registered in the election. While there is no gender-disaggregated data of voter participation, reported observations indicated high voter turnout among women[62].

307. In 2024, Somalia amended its Electoral Law to secure a 30% quota for women's representation in Parliament, a landmark achievement supported by UN Women and other development partners[63]. To enact this quota, 83 seats in the House of the People and 10 in the Senate would need to be reserved for women[64]. As of 2025, this has not been implemented. No woman

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has held one of Somalia's top executive roles and ministerial posts are rarely given to women. For example, recent cabinets have included three women among a total of more than 30 ministers. Somalia's first popular local elections — expected June 2025 — suggest an intended departure from its traditional clan-based voting system[65]. This has been supported by legislation outlining a one-person, one-vote system, which will support women's engagement in the democratic process.

NGOs and civil society

308. Given the limited state enforcement of gender reforms, NGOs, women's associations and local committees have emerged to promote women's political participation. In Beledweyne and Jowhar, active women's committees — often linked to NGOs or UN agencies — have begun engaging in community meetings. However, these committees are usually consultative rather than decision-making bodies. In Somalia, 92% of women indicate their preference for increased opportunities to participate in decision-making and 87% would prefer female leaders[66], indicating strong public demand for women's political representation. Affirmative action is, therefore, a necessary intervention. Without quotas, Somali women are unable to access the financial resources and traditional support needed to compete in politics[67,68]. In wider civil society, women are most visible in NGOs, women's associations and community groups. While these networks have expanded the spaces in which women may participate in decision-making, they remain structurally constrained by the same patriarchal logics that limit formal political inclusion.

Education and literacy

309. Women and girls in Somalia encounter several challenges that hinder their access to education[69]. Approximately 30% of children are enrolled in schools, with only 40% of this amount representing girls[70]. Learning institutions in Somalia are largely under-funded, under-staffed and have limited basic facilities such as water and sanitation[71]. Gender disparities are also evident in the composition of teachers, with only ~15% of school staff being women, while men constitute ~86%[72]. Only ~25% of Somali girls complete primary school and 65% have not achieved a full secondary education by age 24[73]. In 2020, girls comprised 38% of students writing the Form 4 Examination — Somalia's secondary school-leaving assessment[74]. However, pass rates were found to be nearly identical between boys and girls, at 74% and 75%, respectively[75]. This indicates that female students in Somalia are equally capable and motivated to succeed academically as their male counterparts. Literacy rates in Somalia remain low and gender differentiated, with 38% of men and only 26% of women able to read and write[76].

310. Unequal access to education is further influenced by the geography of students. Those in urban areas consistently show higher overall enrolment rates than their rural and nomadic counterparts, but gendered disparities persist within all spatial categories (Table 28). These spatial disparities reflect how limited infrastructure, restricted mobility and uneven access to educational services reinforce gendered barriers to schooling — particularly for girls in rural and nomadic areas.

Table 28. Net student enrolment ratios, based on the 2022 Somalia Integrated Household Budget Survey (SIHBS)[77].

Background characteristics	% of primary student enrolment (6–13 years old)			% of secondary student enrolment (14–17 years old)		
Type of residence	Girls	Boys	Gender Parity Index	Girls	Boys	**Gender Parity Index**
Urban	42.7	48.6	0.9	31.9	43.0	**0.7**
Rural	43.3	39.8	1.1	22.7	22.5	**1.0**
Nomadic	9.0	12.0	0.8	1.2	1.7	**0.7**
Total	**39.0**	**41.7**	**0.9**	**26.8**	**34.1**	**0.8**

[65] UN News. 2024. Somalia: UN official reports on electoral progress, ongoing security challenges**.** Available at https://news.un.org/en/story/2024/10/1155306
[66] Ministry of Women and Human Rights Development (MoWHRD). 2020. Somali Women Forging Alliances to Safeguard Equal Rights for All. Available at https://www.undp.org/sites/g/files/zskgke326/files/2023-03/Somali-Women-Forging-Alliance-Report-October-2020-1.pdf#:~:text=y%20An%20overwhelming%20majority%20of,institutions%20that%20are%20accessible%20and
[67] Ministry of Women and Human Rights Development (MoWHRD). 2020. Somali Women Forging Alliances to Safeguard Equal Rights for All. Available at https://www.undp.org/sites/g/files/zskgke326/files/2023-03/Somali-Women-Forging-Alliance-Report-October-2020-1.pdf#:~:text=y%20An%20overwhelming%20majority%20of,institutions%20that%20are%20accessible%20and
[68] United Nations Security Council. 2021, September 28. Realizing women's 30 per cent quota, political participation in Somalia 'a game changer' for sustainable peace, Deputy Secretary-General tells Security Council (SC/14648, 8867th meeting [PM]). Available at https://press.un.org/en/2021/sc14648.doc.htm#:~:text=The%20representative%20of%20the%20Saint,thus%20achieving%20the%20aspirations%20Somali
[69] Ministry of Women and Human Rights Development (MoWHRD) and Government of the Federal Republic of Somalia (GoFS). 2020b. Somalia women forging alliances to safeguard equal rights for all. Available at https://www.undp.org/sites/g/files/zskgke326/files/2023-03/Somali-Women-Forging-Alliance-Report-October-2020-1.pdf
[70] UN Women. 2022b. Study report: Gender, climate and conflict analysis in Somalia and assessment of opportunities for climate agriculture and livelihood opportunities for crisis-affected and at-risk women in Somalia. Available at https://africa.unwomen.org/en/digital-library/publications/2022/04/gender-climate-and-conflict-analysis-in-somalia-and-assessment-of-opportunities-for-climate-smart-agriculture-and-livelihood-opportunities-for-crisis-affected-and-at-risk-women-in-somalia
[71] Ministry of Women and Human Rights Development (MoWHRD) and Government of the Federal Republic of Somalia (GoFS). 2020b. Somalia women forging alliances to safeguard equal rights for all. Available at https://www.undp.org/sites/g/files/zskgke326/files/2023-03/Somali-Women-Forging-Alliance-Report-October-2020-1.pdf
[72] Somali National Bureau of Statistics (SNBS). 2023. Women and Men in Somalia. Available at https://nbs.gov.so/wp-content/uploads/2025/04/Gender-Statistics-Booklet-2023-1.pdf
[73] Concern Worldwide US. 2023. The everyday challenges faced by Somali women and girls. https://concernusa.org/news/somali-women-girls-challenges/#:~:text=Amid%20conflict%2C%20drought%2C%20displacement%2C%20and,Women%2C%20Peace%20and%20Security%20Index
[74] UNESCO. 2024. Somalia: Education Country Brief. Available at https://www.iicba.unesco.org/en/somalia
[75] UNESCO. 2024. Somalia: Education Country Brief. Available at https://www.iicba.unesco.org/en/somalia
[76] UN Women. 2022b. Study report: Gender, climate and conflict analysis in Somalia and assessment of opportunities for climate agriculture and livelihood opportunities for crisis-affected and at-risk women in Somalia. Available at https://africa.unwomen.org/en/digital-library/publications/2022/04/gender-climate-and-conflict-analysis-in-somalia-and-assessment-of-opportunities-for-climate-smart-agriculture-and-livelihood-opportunities-for-crisis-affected-and-at-risk-women-in-somalia
[77] Somali National Bureau of Statistics (SNBS). 2023. Women and Men in Somalia. Available at https://nbs.gov.so/wp-content/uploads/2025/04/Gender-Statistics-Booklet-2023-1.pdf

311. Patriarchal norms — combined with safety and security concerns — limit the promotion of equal education. In addition, child marriage is widespread with ~36% of girls married by 18[78]. Girls are often required to stay at home to fulfil domestic work obligations and assist with caring for younger siblings[79]. This limits their time and energy for school tasks, creating an additional barrier to educational attainment. In addition, there is limited gender-responsive school infrastructure — such as separate latrines and safe transportation — which exacerbates safety concerns, increasing vulnerability to harassment and violence both en route to and within schools, further discouraging attendance[80]. These intersecting barriers create a reinforcing cycle of low attendance.

312. Women's participation in technical training workshops is also low[81]. Rural Somali women seeking training in technical programmes are constrained by limited mobility as programmes are often conducted in locations far from their villages. This distance makes attendance unfeasible for many women, given that some programmes take ~40 days to complete[82]. Limited education and literacy levels also hinder women's capacity to engage effectively with and benefit from training materials and opportunities[83]. Women's low literacy levels create additional challenges in optimising agricultural benefits, establishing income generating activities and participating in formal market activities.

Economic Resources and Employment

313. Somali women participate in formal and informal economic sectors. Despite their contributions, gender disparities in employment, income and resource access constrain women's economic enfranchisement. Pastoralist and agro-pastoralist women are disproportionally impacted by: i) constrained access to markets and services, ii) limited ownership over the means of production; iii) limited access to technical information; iv) policies favouring large- scale producers or external markets; v) competing resource uses; vi) prohibited ownership of land; vii) weak institutions; and ix) marginalisation and impoverishment[84].

314. In 2024, 21% of women participated in the labour force compared to 47% of men[85]. Women are overrepresented in informal trade[86,87] and subsistence agriculture — comprising ~50% of Somalia's agricultural labour force[88]. Of all economically active women, 29% are self-employed, 23% are engaged in informal employment and 29% identify as homemakers[89]. Limited education[90] has resulted in the constrained participation of women in formal entrepreneurship. Consequently, women's average earnings are below men's, with wage equality being nearly non-existent in Somalia.

315. Women occupy a precarious position in the labour market, with an overrepresentation in vulnerable employment sectors such as micro- and small enterprises. Conversely, they are underrepresented in formal public and private sectors and are frequently assigned to subordinate positions in sizeable corporations[91]. Cultural norms and unequal educational levels between women and men contribute to this underrepresentation. Moreover, in regions controlled by Al-Shabaab, the exclusion of women from economic activities is supported by perceptions that their participation conflicts with Islamic principles[92].

316. Rural women in particular are restricted when it comes to accessing finance and assets. There is limited gender-disaggregated credit market data, but available information suggests that Somali women rarely own bank accounts or collateral. In 2011 only 0.8% of women had received loans from formal financial institutions, compared to 2.3% of men[93]. Approximately 74% of women-owned businesses in Somalia do not have bank accounts and are not formally registered with the Somaliland Chamber of Commerce[94]. Without formal land titles (see Section 0), women are unable to secure loans. In 2019, Somalia's federal government launched the Gargaara Company — a micro, small and medium enterprise (MSME) loaning facility — to incentivise lending to underserved businesses. As of 2024, the Gargaara Company had loaned more than US$23 million and while women-owned businesses account for nearly half of these loans by number, they represent

[78] Concern Worldwide US. 2023. The everyday challenges faced by Somali women and girls. https://concernusa.org/news/somali-women-girls-challenges/#:~:text=Amid%20conflict%2C%20drought%2C%20displacement%2C%20and,Women%2C%20Peace%20and%20Security%20Index
[79] UN Women. 2022b. Study report: Gender, climate and conflict analysis in Somalia and assessment of opportunities for climate agriculture and livelihood opportunities for crisis-affected and at-risk women in Somalia. Available at https://africa.unwomen.org/en/digital-library/publications/2022/04/gender-climate-and-conflict-analysis-in-somalia-and-assessment-of-opportunities-for-climate-smart-agriculture-and-livelihood-opportunities-for-crisis-affected-and-at-risk-women-in-somalia
[80] Ministry of Education, Culture and Higher Education. 2020. Gender Policy for the Education Sector in Somalia. Available at https://moe.gov.so/wp-content/uploads/2022/04/Gender-Policy-for-Somali-Education_Dec-2020.pdf
[81] Food and Agriculture Organisation of the United Nations (FAO). 2021. National gender profile of agriculture and rural livelihoods — Somalia. Available at https://www.fao.org/3/cb6316en/cb6316en.pdf
[82] Food and Agriculture Organisation of the United Nations (FAO). 2021. National gender profile of agriculture and rural livelihoods — Somalia. Available at https://www.fao.org/3/cb6316en/cb6316en.pdf
[83] Food and Agriculture Organisation of the United Nations (FAO). 2021. National gender profile of agriculture and rural livelihoods — Somalia. Available at https://www.fao.org/3/cb6316en/cb6316en.pdf
[84] Musau BM. 2021. Effects of climate change on pastoralist women in the Horn of Africa. Journal of Conflict Management and Sustainable Development. (6)3: 60–76.
[85] International Labour Organization. 2025. ILO Modelled Estimates and Projections database. ILOSTAT. Available at https://ilostat.ilo.org/data/
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[88] Food and Agriculture Organisation of the United Nations (FAO), European Union (EU) and CIRAD. 2022. Food Systems Profile – Somalia. Catalysing the sustainable and inclusive transformation of food systems. Available at https://doi.org/10.4060/cc0074en
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[90] For further details see Section 1.5: Education and literacy.
[91] National Economic Council (NEC) of Somalia. 2024. Assessment of Women's Economic Participation in Somalia. Available at https://nec.gov.so/wp-content/uploads/2024/10/Women-Economic-Participation.pdf
[92] African Development Bank (AfDB) and UN Women. 2022. Republic of Somalia. Country gender profile. Trends of change in a fragile and fragmented context. Available at https://africa.unwomen.org/sites/default/files/2023-11/somalia_country_gender_profile_0.pdf
[93] Food and Agriculture Organisation of the United Nations (FAO). 2021. National gender profile of agriculture and rural livelihoods – Somalia. Mogadishu. Available at https://doi.org/10.4060/cb6316en
[94] AECF. n.d. Growing Women's Entrepreneurship in Somalia for Impact. Available at https://www.aecfafrica.org/growing-womens-entrepreneurship-in-somalia-for-impact/

less than 10% of the total loan value[95].

317. Financial access is even more restricted in pastoralist and agro-pastoralist communities because rural microfinance schemes are limited[96]. Without land deeds or group guarantees, rural women are unable to obtain bank loans[97]. The combination of low education and limited collateral has resulted in women starting non-farming businesses. Without measures to address this exclusion, customary restraints prohibit pastoralist women from gaining authority.

318. Women's participation in agro-pastoral value chains is further curtailed by prevailing insecurity and conflict. The exclusion of women from agricultural decision-making and value chains limits productivity and increases household vulnerability, particularly in contexts where women are primary providers[98]. While women are active in segments of the agricultural sector — particularly those requiring less land, capital and skills, and characterised by shorter production cycles and modest profits — they remain largely absent from decision-making processes and governance forums[99]. This limited representation is reinforced by insecure land tenure and restricted authority over production decisions, which reduce women's control over both the land they cultivate and the benefits derived from it[100].

Women's access to and control over resources

319. Women's ability to access and control productive resources in Somalia is determined by a combination of socio-cultural norms, institutional exclusions and structural inequalities in education and economic participation. Limited access to formal education reduces women's ability to navigate legal and administrative systems related to land, water and finance. Similarly, unequal access to income, credit and employment restricts women's capacity to accumulate assets or engage with resource governance mechanisms.

320. Women in Somalia are frequently responsible for resource provision within their households[101]. Approximately 74% report being the primary income earners, while 62% indicate that they are the sole providers[102]. Many women also take on additional responsibilities, with 64% supporting children and smaller percentages providing for spouses (8%), elderly relatives (9%) or individuals with disabilities (6%)[103]. In total, 13% report that other family members depend on their earnings for financial support[104]. Despite women's reduced likelihood to benefit from paid employment (see Section 0), households remain largely dependent on their economic contributions[105].

321. Women's access to and control over basic resources is also limited. Rural water sources such as wells and boreholes are typically managed by community committees led by elders or village chiefs[106]. Within these structures, traditional norms and male authorities determine the legitimacy of water demands and control decisions related to distribution, operation and maintenance[107]. These decisions are made on behalf of the broader community, often without direct consultation between these authorities and community members. Men typically manage commercial wells, while women often oversee those serving domestic needs. Commercial wells tend to be in better condition, as their upkeep is tied to income from external sources — mainly herders seeking water for their livestock. Trained women tend to outperform men in the management and upkeep of community water sources — however, they are typically excluded from decision-making processes regarding water governance[108].

322. In the Shabelle River Basin's pastoralist and agro-pastoralist communities, gender roles in accessing resources and opportunities are marked by distinct responsibilities for men and women.[109]. Women's roles include managing small livestock, milking, fetching water and cultivating kitchen gardens, while male clan leaders retain control over the major rangeland resources. Decision-making and owning livestock is considered the responsibility of pastoral men, whereas women are

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[95] UN Women. 2022. Village Saving and Loan Associations can be a solution to lost livelihoods. Available at https://africa.unwomen.org/en/stories/news/2022/05/village-saving-and-loan-associations-can-be-a-solution-to-lost-livelihoods
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[99] Food and Agriculture Organisation of the United Nations (FAO). 2021. National gender profile of agriculture and rural livelihoods — Somalia. Available at https://www.fao.org/3/cb6316en/cb6316en.pdf
[100] Food and Agriculture Organisation of the United Nations (FAO). 2021. National gender profile of agriculture and rural livelihoods — Somalia. Available at https://www.fao.org/3/cb6316en/cb6316en.pdf
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[104] Ministry of Women and Human Rights Development (MoWHRD) and Government of the Federal Republic of Somalia (GoFS). 2020b. Somalia women forging alliances to safeguard equal rights for all. Available at https://www.undp.org/sites/g/files/zskgke326/files/2023-03/Somali-Women-Forging-Alliance-Report-October-2020-1.pdf
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[109] Musau BM. 2021. Effects of climate change on pastoralist women in the Horn of Africa. Journal of Conflict Management and Sustainable Development. 6, 3: 60–76.

expected to assume the roles of child-rearing and executing domestic chores[110]. Rural Somali women spend an additional four hours each day performing domestic and agricultural labour[111]. This uneven allocation of labour results in extended working hours and time poverty[112] for women[113]. Furthermore, women are tasked with securing food, water and firewood for their households[114]. However, limited access to safe drinking water in pastoral communities means that water collection is a demanding activity, often requiring three to five hours from women daily[115]. This activity is labour and time intensive, creating an additional strain on the wellbeing of pastoral women.

323. In pastoral communities, women and men participate in livestock care, but responsibilities are assigned according to gender, location and the type of animal. Women typically manage animals kept near the household, including those requiring special care such as pregnant cows, newborn calves and the sick or injured[116]. In contrast, men oversee larger livestock — such as cattle and camels — that are typically kept further from the household[117]. However, when large animals such as milking cows are housed near the homestead, women also take on responsibility for their care[118]. This division of labour is complicated by women's insecure ownership of livestock. For example, animals given to women by male relatives are reclaimed upon marriage or death, decreasing their food security during crises such as droughts. In such times, men often migrate with herds in search of water, while women and children remain behind to care for the remaining animals[119].

324. Women in pastoral and agropastoral communities have control over the distribution of their produce — however, men are the primary beneficiaries of generated income[120]. This restriction is often attributable to cultural conventions that confer priority to men over the control of monetary assets, in conjunction with regulatory and policy constraints that curtail women's access to financial opportunities[121].

Access to Land and inheritance

325. Negligible land tenure and exclusion from decision-making processes has resulted in women having minimal power over the land they cultivate. Land use and ownership is highly gendered in Somalia. The 1975 Land Law[122] nationalised rural land and required registration of use, but after state collapse that law lapsed[123]. As of 2025, customary law (*Xeer*) and Islamic principles govern property, but both tend to favour men. Under prevailing custom, women seldom hold land titles in their own names as land is passed down through patrilineal clans[124]. Widows are often unable to inherit land or property under clan practices, despite Islamic law entitling female heirs to fixed shares[125]. Forced evictions of widows have been reported following the death of a husband or during clan clashes, as women are dispossessed of family land by stronger clans[126].

326. Under Somalia's customary system, women are prohibited from owning, renting or inheriting land and access to land is largely dependent on women's relation to male relatives [127]. This leaves women vulnerable if family structures change. Only ~15% of Somali women own land or housing individually[128]. In the riverine districts of Beledweyne, Jowhar and Afgooye women traditionally manage small farm plots around homesteads, but they rarely have formal title. Women who do have access to land typically acquire ownership by purchase, gifts (*hiba*), dower (*mahr*) or collective ownership[129]. However, women who own land or housing may have limited authority over its use or the allocation of value derived from land-based income strategies. Somali men typically possess land titles and benefit from holding the property rights over land, whereas women's ownership is contested in the presence of male household members[130].

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[110] Musau BM. 2021. Effects of climate change on pastoralist women in the Horn of Africa. Journal of Conflict Management and Sustainable Development. 6, 3: 60–76.
[111] Food and Agriculture Organisation of the United Nations (FAO). 2021. National gender profile of agriculture and rural livelihoods — Somalia. Available at https://www.fao.org/3/cb6316en/cb6316en.pdf
[112] Time poverty reflects a deficit in time available for personal and leisure activities due to excessive work demands — often in the form of unpaid domestic and care work.
[113] Food and Agriculture Organisation of the United Nations (FAO). 2021. National gender profile of agriculture and rural livelihoods — Somalia. Available at https://www.fao.org/3/cb6316en/cb6316en.pdf
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[118] Food and Agriculture Organisation of the United Nations (FAO). 2021. National gender profile of agriculture and rural livelihoods – Somalia. Mogadishu. https://doi.org/10.4060/cb6316en
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[130] Food and Agriculture Organisation of the United Nations (FAO). 2021. National gender profile of agriculture and rural livelihoods — Somalia. Available at https://www.fao.org/3/cb6316en/cb6316en.pdf

327. In rural Somalia, land is typically communally owned, with clan elders holding the authority to decide its use[131]. These elders allocate land to individuals or households, specifying its purpose and duration of use. However, women's representation in these decision-making groups is minimal or, in some instances, absent[132]. Local community committees, which handle various matters including land allocation and dispute resolution, are predominantly male. Minimal female participation in land governance and administration, in rural and urban settings, negatively affects women's property rights and hinders their empowerment[133]. Given the male dominated structure of these governance systems, women's needs and concerns are rarely engaged with.

328. State laws provide limited protection when it comes to equitable land ownership. Additionally, no national land law exists after 1991. A draft land policy under the 2012 Constitution encouraged a national land policy with equity of ownership, but progress has stalled[134]. Without legal titles, women are unable to leverage land as collateral or receive compensation when development projects displace communities.

Gendered impacts of climate change

329. The effects of climate change are not uniformly evident among different groups, with variations in impact based on factors such as age and sex. Somalia is among the most vulnerable countries to climate change, with over 80% of its arid lands increasingly exposed to climate change induced hazards, such as droughts and flash floods[135,136]. These hazards are exacerbating pre-existing gender inequalities, as women often experience increased vulnerability to climate-related disasters and food insecurities in comparison to men[137]. The consequences of climate change have been particularly visible for women engaged in pastoralist and agro-pastoralist livelihoods[138]. Given that pastoral livelihoods are climate-sensitive, limited rainfall and pasture availability has a negative impact on the income of pastoralist women[139]. In the Shabelle River Basin, women contend with the loss of livestock and crops during droughts and displacement during floods[140]. This restricts their capacity to access financial resources, subsequently limiting their economic independence.

330. Climate change has resulted in alterations for the roles and responsibilities of women within Somali households. Women, conventionally tasked with food production, processing, water and fuelwood collection, are finding these responsibilities increasingly challenging and time-consuming because of the increased scarcity of rainwater and declining availability of pasture[141,142]. Consequently, women are required to travel greater distances in search of water, which simultaneously reduces the time available for family care and income generation. Additionally, the health of women and girls has been adversely affected as covering these distances in search of water sources exposes them to increased risks of violence and illness[143]. Somali Bantus — minority agriculturalists along the Shabelle River Basin — have a history of marginalisation[144]. Bantu women in camps are frequently victims of rape and feel unprotected by clan elders[145]. Female-headed households — estimated at ~50% nationally[146] — typically have limited assets. Additionally, disabled or elderly women have even less capacity to migrate or rebuild. Consequently, a climate hazard resulting in water shortages, animal loss or crop failure is likely to result in severe livelihood insecurity, thereby exacerbating poverty.

331. In the agro-pastoral context, women's nutritional security is also compromised. When herds are lost, men often receive priority in scarce food distribution while women and girls eat less, undermining their nutritional health[147]. Women are also primarily responsible for looking after the health and well-being of their family members. Climate-induced droughts, which result in food and water shortages, render this task particularly challenging because of the increased risk of malnutrition and illness[148]. Women and girls — particularly those who are pregnant or nursing — are exceptionally vulnerable to malnutrition[149]. Flooding, which is a frequent occurrence in the Shabelle River Basin, also has gendered effects. When the river bursts its

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[131] Food and Agriculture Organisation of the United Nations (FAO). 2021. National gender profile of agriculture and rural livelihoods — Somalia. Available at https://www.fao.org/3/cb6316en/cb6316en.pdf
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[139] Gaheir MA. 2019. Effects of drought on pastoralist and agro-pastoralist women in Somaliland. Somaliland Peace and Development Journal. 3, 62–69.
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[142] Gaheir MA. 2019. Effects of drought on pastoralist and agro-pastoralist women in Somaliland. Somaliland Peace and Development Journal. 3, 62–69.
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[145] Minority Rights Group. n.d. Bantu in Somalia. Available at https://minorityrights.org/communities/bantu/#:~:text=with%20numerous%20cases%20of%20rape,clan%20structures%20in%20the%20camps
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[147] O'Hirsi AI. 2024. Reducing Vulnerability of Somali Women to the Global Climate Crisis: A Call to Action for Gender-Sensitive Adaptation and Mitigation Strategies. American Journal of Climate Change, 13(04): 779–792.
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[149] Gaheir MA. 2019. Effects of drought on pastoralist and agro-pastoralist women in Somaliland. Somaliland Peace and Development Journal. 3, 62–69.

banks, communities along the river are forced to leave their homes. Women and children — who are often out of school — typically end up in internally displaced person (IDP) settlements or with relatives where their care responsibilities multiply[150].

332. Climate change is contributing to more frequent and intense climate disasters, which — alongside conflict — are often accompanied by an escalation in GBV and sexual exploitation and harassment (SEAH) of women and girls[151]. This increase is closely linked to the intensification of pre-existing inequalities, vulnerabilities and detrimental traditional gender norms[152]. Women and girls' vulnerability is exacerbated in densely populated evacuation centres and IDP settlements which are characterised by limited electricity and water supplies. As a result, women and children are compelled to undertake extensive journeys in unsafe conditions to access basic resources[153]. There has also been an increase in male-on-male GBV since 1991[154]. This violence manifests in the form of, *inter alia*, coerced incorporation of boys and young men into armed factions, gender-biased massacres targeting males and the resurgence of clan-associated revenge killings exclusively directed at men[155]. This impact of increased male insecurity is felt by: i) the individual man — influencing his mobility, personal agency and self-perception; and ii) his dependents, primarily spouses and children[156]. When drought constrains livelihoods, many men leave home in search of work, often increasing domestic tension[157]. Consequently, women often became sole breadwinners and sell livestock, crops or perform other labour as a means of income during extreme climate events. Some men resent women's new economic roles, contributing to increased incidences of domestic violence. As a result, climate displacement has exacerbated already high levels of sexual and GBV in Somalia[158].

333. Climate change has also exacerbated existing gender inequalities in education, particularly impeding girls' regular attendance at school. Droughts have caused numerous families to migrate from their villages for displacement camps, which in turn poses substantial challenges for girls in maintaining consistent school attendance[159]. In addition to these challenges, a considerable number of women and their dependents are unable to relocate to safer areas during flood events, contributing to increased fatalities from climate hazards[160]. Moreover, the increased frequency and severity of climate-related disasters often culminate in a decline in household income. Consequently, families find it arduous to manage school fees and ancillary education-related expenses[161].

334. Improving Somali women's climate resilience requires women's access to climate finance and decision-making, as well as training in drought- and flood-resilient agriculture[162]. The long-term success of localised adaptation projects will be dependent on women's active involvement in planning and benefit-sharing. Projects should also address the distinct effects of droughts and floods on women, as recommended in the Somali Women's Charter[163]. By prioritising women's empowerment and recognising the link between women's wellbeing and household survival, adaptive capacity will be strengthened for the wider Somalian community.

Part Two: Gender Action Plan

Introduction

335. The Gender Action Plan (GAP) has two primary objectives: i) to guide the project in understanding and addressing the differential impacts of climate change on women and men; and ii) identify gender entry points for actions that ensure equitable benefits for women, men, and vulnerable populations in the target areas. The GAP serves as the main strategy for integrating gender metrics into the proposed project's implementation. Building on the gender assessment (Part One), the GAP ensures targeted actions to address existing gender gaps and inequalities faced by women.

Impact statement

336. Research and anecdotal evidence indicate that women, children and youth are among the groups most vulnerable to the

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impacts of climate change. In addition, a large number of vulnerable people in communities that are highly dependent on local natural resources for their survival are women and children. Therefore, gender-responsive planning, resource-allocation and implementation in the context of this proposed project will be a priority. Supporting transformational change both in the lives of women beneficiaries and in prompting gender mainstreaming in national climate change policymaking and implementation was therefore seen as a priority in stakeholder consultations.

Expected total numbers of direct and indirect beneficiaries (reduced vulnerability or increased resilience) are:

- ~20,870 people directly benefit from project interventions (11,867 youths, 4,524 adult women and 4,479 adult men); and
- ~1,351,193 people indirectly benefit from the project interventions (766,049 youths, 294,330 adult women and 290,814 adult men).

The project will also:

- ensure that all reviewed policies, recommended policy revisions, and economic development planning frameworks and guidelines promote gender inclusion and responsiveness;
- ensure sustainability and long-term impact of gender-responsive outcomes, outputs and actions;
- build capacity for government institutions, traditional authorities and faith-based institutions in acknowledging gender differentials in responding to climate risks;
- ensure that women take leadership with regards to project components related to them, however, without the marginalisation of men with the intent to avoid their resistance and negative influence; and
- increase social accountability.

Outcome statement

337. The project will enhance the climate resilience of ~4,524 women directly and ~294,330 women indirectly, by implementing Nature-based Solutions (NbS) and hybrid solutions in the target districts to reduce land degradation and control erosion, establish sustainable land management practices, and construct flood and drought risk mitigation infrastructure. The GAP outlined in Table 5 serves as a framework for integrating gender considerations into the Enhancing Adaptation and Resilience through Nature-based Solutions (EARNSS) project in Somalia. It will be used to ensure that men, women, the youth and persons with disabilities are actively involved in and benefit from planning, decision-making and the implementation of project interventions. The Sadar Development and Resilience Institute (SADAR), the Federal Ministry of Environment and Climate change (MoECC), the Ministry of Energy and Water Resources (MoEWR) and other governmental bodies will collaborate closely with the project management unit's (PMU) Environmental and Social Safeguards (ESS) and Gender Officer, who holds primary responsibility for overseeing gender mainstreaming efforts. The plan will be monitored through gender-disaggregated indicators such as participation rates and consultation outcomes, with reporting scheduled at intervals throughout the project's implementation. Regular workshops, focus group discussions, and training sessions will be used to ensure continuous feedback and adaptation of the plan. The implementation status of the GAP will be a recurring agenda item for all project steering committee (PSC) meetings.

Costed gender-specific activities

338. The activities outlined in Table 5 are designed to build the institutional and technical capacity required to deliver the gender equality and social inclusion (GESI) objectives of the project. These interventions focus on equipping personnel with the skills, tools and knowledge to apply GESI principles across their respective roles. During the inception phase, a full-time ESS and Gender Officer will be engaged to develop all training materials and operational guidance required to apply the GAAP. This specialist will then deliver foundational training to the PMU, ESS Specialist and implementing partners to ensure consistent and effective GESI mainstreaming. Training modules and short-term technical support are tailored to strengthen the integration of GESI considerations within the project's implementation. These costed activities are enabling measures required to implement the action plan effectively. A detailed breakdown of the costing is further described in the projects budget table.

Table 29. Gender Action Plan

Project management activities	Gender action	Indicators and targets	Means of verification	Timeline	Responsible entity	Budget
Gender-balanced PMU	Promote a gender balance in establishing the Project Management Unit (PMU) and in managing its human resources.	Indicators: • Proportion of women employed in unskilled, technical, management, or supervisory roles. Targets: • Demonstrable efforts to recruit at least 40% women, including in project positions	Documentation of contracting process, such as vacancy announcements, shortlisting, interview notes	Year 1	UNEP Task Manager	**Integrated within PMU establishment budget**
GESI induction and SEAH/GBV training for PMU and ESS specialist	Provide training for the PMU on SEAH and GBV risks and safeguards, differential gender impacts and strategies for equitable access to project benefits. Additionally, training will include familiarisation with relevant national, regional and international gender policy frameworks and conventions.	Indicators: • Percentage of PMU staff trained on SEAH and GBV risks Targets: • 80% of relevant staff complete the training and demonstrate improved understanding of SEAH and GBV risks.	Workshop reports, including post-workshop assessments on SEAH and GBV	Year 1	PMU ESS and Gender Officer	**US$10,000**
Component 1: Capacity building for the replication and upscaling of innovative NbS and hybrid technologies in Somalia						
Output 1.1: Capacity development programmes for flood and drought management, integrating innovative NbS and hybrid technologies, developed and delivered for institutional stakeholders.	Ensure the capacity needs assessment (Activity 1.1.1) explicitly captures gender-specific and social inclusion gaps in planning and implementing NbS and hybrid technologies. Use findings to inform the development of context-appropriate NbS protocols (Activity 1.1.2) that consider the differentiated needs, knowledge systems and access constraints of women, the youth, PWDs and other marginalised groups in urban and rural settings. In collaboration with the University for Peace and Somali academic institutions, co-design university modules that incorporate gender-transformative content — including women's roles in traditional ecosystem management, barriers to equitable participation in climate resilience planning and inclusive governance models for NbS and hybrid solutions.	Indicators: • RF Indicator 1.1.1 Number of government, state and district-level authorities as well as NGO/CSO representatives trained through programmes developed and delivered, disaggregated by gender • GAP Indicator 1,1 All capacity assessment tools that include gender and inclusion-related questions. . Targets: • 20 (including at least five women) ministry and NGO/CSO representatives at the state level and 10 (including at least three women) at the national level trained, for a total of 30 representatives • 100% of assessment tools.	Review of finalised capacity needs assessment, university course modules and registrations by PMU ESS & Gender Officer	Year 1–2	PMU ESS and Gender Officer	**US$351**
Output 1.2: Three Adaptation Management Plans in prioritised sub-catchment and floodplain area, with protocols for planning and implementing NbS and hybrid technologies for adaptation generated.	Ensure that technical assessments and cost-effectiveness analyses (Activity 1.2.1) are gender-responsive by incorporating gender-disaggregated data on water access, flood vulnerability, and land-use patterns. This includes conducting participatory risk mapping with women, the youth and marginalised groups to identify how gendered roles and responsibilities (such as water collection and subsistence farming) affect exposure to climate risks in each sub-catchment. Create structured, gender-balanced consultation and validation platforms during the development (Activity 1.2.2) and validation (Activity 1.2.3) of the AMPs to ensure that	Indicators: • RF Indicator 1.2.1 Number of Adaptation Management Plans (AMPs) developed in sub-catchment and floodplain areas and validated including gender-responsive NbS and hybrid technology protocols • GAP Indicator 1,2 Percentage of participants in AMP validation workshops who are women, disaggregated by age and social group. Targets: • Three Adaptation Management Plans developed and validated for the target sub-catchment and floodplain areas including gender-responsive NbS and hybrid technology	. Review of AMPs by PMU ESS & Gender Officer. Validation workshop report and participant list	Year 1–2	PMU ESS and Gender Officer	**US$660**

	women, especially from Indigenous, rural, and marginalised communities, meaningfully influence the prioritisation of NbS/hybrid solutions and sites. Use culturally appropriate engagement techniques such as women-only focus groups and local language materials.	protocols . • AMPs validated with direct input from at least 40% women participants, and documentation reflects integration of their feedback in site selection and design of NbS and hybrid adaptation measures.			
Output 1.3: Three Adaptation Management Plans in prioritised urban areas, with protocols for planning and implementing urban green infrastructure technologies in flood-prone areas generated.	Ensure the development of urban Adaptation Management Plans (Activity 1.3.2) incorporates a gender analysis of how urban flooding and poor waste management differently affect women, men, youth and persons with disabilities. Use participatory approaches such as. transect walks, safety audits and time-use surveys to identify women's safety, mobility, health and livelihood concerns in flood-prone informal settlements and public spaces. Establish and support gender-balanced urban planning committees or forums to co-lead the development and validation of the urban Adaptation Management Plans (Activities 1.3.2 and 1.3.3), ensuring that women — particularly from informal settlements and flood-prone communities — are empowered to influence decision-making on green infrastructure and waste management priorities.	Indicators: • RF Indicator 1.3.1 Number of urban Adaptation Management Plans (AMPs) developed in urban areas and validated including gender-responsive urban green infrastructure technology protocols • GAP Indicator 1.3 Percentage of participants in AMP validation workshops who are women, disaggregated by age and social group. Targets: • Three Adaptation Management Plans developed and validated for the target urban areas including gender-responsive urban green infrastructure technology protocols. • Women constitute at least 40% of leadership and technical input roles in planning and validation processes, with documented evidence of their contributions shaping site prioritisation and infrastructure choices.	Review of urban AMPs by PMU ESS & Gender Officer Validation workshop report and participant list	Year 1–2	PMU ESS and Gender Officer **US$360**
Output 1.4: Six local community committees established or capacitated, and trained on participatory planning, implementation and monitoring of Adaptation Management Plans.	Establish mandatory quotas and inclusive selection criteria to ensure that all six community committees (Activity 1.4.1) are at least 50% women, including young women, Indigenous women, and women from agropastoral and water-user groups. Include provisions for rotating leadership roles to build women's experience in community governance and decision-making on adaptation planning and implementation. Design and deliver the training workshops (Activity 1.4.2) using gender-responsive methodologies that account for different literacy levels, languages and time availability of women, including those with caregiving responsibilities. Ensure training content addresses gendered dimensions of climate vulnerability, social inclusion in monitoring processes and skills for influencing AMP decisions.	Indicators: • GAP Indicator 1.4.a Percentage of female members across all six committees, disaggregated by age and social group. • GAP Indicator 1.4.b Number of women trained on participatory AMP planning, implementation and monitoring, with satisfaction scores or demonstrated competency increase. Targets: • All six committees are gender-balanced and include at least two women in decision-making or leadership roles. • At least 50% of trained participants are women, with documented application of skills by female committee members in AMP implementation and monitoring within 12 months of training.	Establishment charters of community committees, outlining initial participants and representative quotas. Training workshop reports, including post-training assessments on AMPs.	Year 1–2	PMU ESS and Gender Officer **US$3,238**
Component 2: Protection of productive assets and livelihoods by innovative and proven adaptation NbS and hybrid technologies					
Output 2.1: Six combined V-shaped weirs and sand dams built and equipped with solar pumps, elevated storage tanks, and gravity distribution systems in Beledweyne.	Establish or strengthen women-led water user associations in communities benefiting from the sand dams and weirs (Activities 2.1.1 and 2.1.2), ensuring women's leadership in the management, and operation of the solar-powered water supply and distribution systems. Provide targeted training for women on technical system maintenance, equitable water allocation and conflict resolution related to water use for domestic needs and livestock.	Indicators: • GAP Indicator 2.1 Number of women in leadership roles such as chair, treasurer or technical leads within water user sub-committees managing the sand dam and weir infrastructure. Targets: • At least one women-led or gender-balanced water user sub-committees established or strengthened in	Establishment charter of rural community committee in Beledweyne, outlining initial participants and representative quotas.	Year 2–3	PMU ESS and Gender Officer **US$188**

		Beledweyne, with documented decision-making authority over water management and evidence of sustained women's participation in system governance.			
Output 2.2: Rangelands brought under climate smart management practices through community empowerment in the three target districts.	Ensure women agropastoralists and pastoralists are actively engaged and trained in climate-smart rangeland management (Activity 2.2.2), including enrichment planting, nursery management (Activity 2.2.1), and sustainable grazing practices. Develop tailored training modules that integrate Indigenous knowledge and address gender-specific roles in rangeland use (such as fodder collection, small livestock care) and provide start-up inputs to support women's participation in restoration activities.	Indicators: • RF Indicator 2.2.2 Number of community members, including women, with a demonstrated understanding of climate-smart rangeland management gained through demonstration plot training . Targets: • Women make up at least 50% of participants in nursery operations and rangeland management training, with documented evidence of women-led climate-smart practices adopted on at least 30% of the targeted rangeland area.	Training workshop reports on climate-smart rangeland management practices. Reporting by community committee chairpersons to PMU during annual field visits based on nursery and demonstration plot logs.	Year 2–3	PMU ESS and Gender Officer **US$7,052**
Output 2.3: Soil bunds constructed to reduce soil erosion and water run-off at the watershed level in Beledweyne.	Ensure that women — particularly those from female-headed households and agropastoralist groups — are actively included in the training (Activity 2.3.1) and implementation of soil bunds (Activity 2.3.2). Distribute gender-appropriate tools such as lightweight hoes and provide training in local languages using inclusive methods to ensure women gain technical knowledge and participate meaningfully in soil erosion control and watershed restoration.	Indicators: • RF Indicator 2.3.2 Percentage of trained participants and tool recipients disaggregated by gender with post-training assessments showing improved knowledge and engagement in bund construction and maintenance. Targets: • At least 50% of participants in soil bund construction activities are women, with documented evidence of their sustained involvement in watershed restoration and decision-making on land management at the community level.	Training workshop reports on soil erosion control, including post-training assessments. Reporting by community committee chairpersons to PMU during annual field visits based on demonstration plot logs.	Year 3	PMU ESS and Gender Officer **US$6,183**
Output 2.4: River embankments restored and riverine areas revegetated or restored for the reinforcing of river embankments and retention and infiltration of flood water in Jowhar and Afgooye	Actively involve women — particularly those from flood-affected and low-income households — in the revegetation and eco-restoration of river embankments (Activities 2.4.1 and 2.4.2) through targeted training in ecosystem restoration techniques. Facilitate women's access to these green job opportunities by addressing barriers such as childcare and mobility.	Indicators: • RF Indicator 2.4.3 Number of community members including women employed and trained in embankment restoration and revegetation activities in Jowhar and Afgooye. Targets: • Women constitute at least 50% of the restoration workforce, with documented skills development and increased household income among female participants, contributing to long-term community resilience and ownership of flood protection infrastructure.	Training workshop reports on soil embankment restoration and revegetation, including post-training assessments. Reporting by community committee chairpersons to PMU during annual field visits based on demonstration plot logs.	Year 2–5	PMU ESS and Gender Officer **US$9,172**
Output 2.5: Sustainable urban drainage systems (SUDs) improve urban drainage network.	Involve women — particularly from informal settlements and low-income urban households — in the design, implementation and oversight of Sustainable Urban Drainage Systems (SUDs) (Activities 2.5.1 and 2.5.2). Train community committees in maintaining ditches and ponds.	Indicators: • RF Indicator 2.5.1 Number of households benefiting from SUDs • GAP indicator 2.5 Percentage of women participating in urban community committees Targets: • At least 100 households benefiting from SUDs with 50% of direct beneficiaries being women • Women constitute at least 30% of the community	Establishment charters of urban community committees, outlining initial participants and representative quotas.	Year 3–4	PMU ESS and Gender Officer **US$846**

		committee members involved in the design, implementation and oversight of SUDs			
Output 2.6: Waste management and its flood reduction benefits demonstrated in urban neighbourhoods.	Mobilise and train women — particularly those from informal urban settlements and women-headed households — as key actors in flood-resilient waste management (Activities 2.6.1 and 2.6.2). Provide tailored training on waste segregation, flood risk reduction, and safe handling practices to community committees. Ensure women's leadership in planning and executing community waste drives and link them to income-generating opportunities through recycling or composting initiatives.	Indicators: • RF Indicator 2.6.2 Number of community members including women trained and actively leading or participating in community-led waste collection drives. Targets: • Women constitute at least 50% of trained participants and lead at least three high-visibility waste management initiatives (one per town), with documented reductions in localised flooding and improved community awareness of the gendered benefits of waste management.	Training workshop reports on waste management, including post-training assessments. Reports on community-led waste collection drives.	Year 2–5	PMU ESS and Gender Officer **US$1,705**
Component 3: Improved enabling environment for investment in the replication and upscaling of adaptation NbS and hybrid solutions in Somalia					
Output 3.1: Lessons learned and best practices are codified and disseminated to promote investment in NbS.	Systematically document and integrate gender-specific lessons learned, challenges and success stories from women and marginalised groups involved in the implementation of Nature-based Solutions (NbS) and hybrid interventions (Activities 3.1.1 and 3.1.2). Ensure that knowledge products and reports explicitly highlight how gender-responsive approaches enhanced effectiveness, equity and sustainability. Disseminate these insights to government stakeholders and development partners (Activity 3.1.3) to inform gender-responsive planning and financing of future NbS investments.	Indicators: • RF Indicator 3.1.1 Number of knowledge products and reports generated and shared by the project that incorporate gender-specific insights and recommendations; Targets: • All project reports and dissemination materials include a gender-responsive section, with at least three gender-informed best practices documented.	Review of knowledge products and reports by PMU ESS & Gender Officer.	Year 1–5	PMU ESS and Gender Officer **US$1,878**
Output 3.2: Recommendations for policy reforms and incentive packages are available at federal, member state and local government levels to promote the development, replication and upscaling of NbS and hybrid measures.	Ensure that all policy reviews, incentive mechanism designs, and feasibility assessments (Activities 3.2.1 to 3.2.3) explicitly examine and address gender-related barriers and opportunities for women's participation in and benefit from NbS. Engage women's organisations, female community leaders, and gender experts in consultations to co-develop inclusive incentive packages and inform policy reform recommendations. Present gender-responsive findings and recommendations during federal and state-level workshops (Activity 3.2.4) to promote institutional uptake.	Indicators: • RF Indicator 3.2.1 Number of relevant policies analysed and policy recommendations generated to promote NbS and hybrid adaptation measures including gender-responsive provisions • GAP Indicator 3.2 Number of women's organisations or gender stakeholders consulted during policy and incentive development. Targets: • All policy reform and incentive mechanism recommendations include specific measures to enhance women's access to NbS resources, finance and decision-making. At least one gender-transformative incentive mechanism is included in the final package presented to government stakeholders. • At least six (one rural and one urban per district) women's organisations or gender stakeholders consulted.	Review of policy and incentive recommendations by PMU ESS & Gender Officer. Workshop reports, including post-workshop assessments on integrating NbS/hybrid solutions into policy.	Year 1–5	PMU ESS and Gender Officer **US$438**
Output 3.3: Gender-responsive public awareness programmes developed and implemented.	Co-create awareness raising strategies with women from diverse social groups, ensuring that content, language and delivery channels are accessible, relevant and empowering. Engage women's organisations, youth groups and female community leaders in the development of messages that address gendered climate risks, promote	Indicators: • GAP Indicator 3.3 Proportion of awareness-raising materials and broadcasts developed with input from women and designed to be gender-inclusive • RF Indicator 3.3.2 Number of men and women reached through tailored awareness campaigns	Review of awareness-raising materials by PMU ESS & Gender Officer.	Year 4–5	PMU ESS and Gender Officer **US$3,193**

	women's roles in NbS, and challenge harmful norms. Prioritise media platforms most used by women, including local radio, mobile-based messaging and visual tools suited to low-literacy audiences.	Targets: • All awareness programmes are co-designed with women and delivered through channels accessible to them • 10,000 men and 10,000 women reached through tailored awareness campaigns message sent by SMSs [164]	Surveys during annual community awareness events.			
	Component 4: M&E and knowledge management plan					
Activity 4.1.1: Update all project management plans and implement the Stakeholder Engagement Plan, Gender Action Plan and Environmental and Social Management Plan.	Ensure that the project inception workshop is designed and facilitated in a gender-inclusive manner, with balanced participation from women and men across national, federal state, and district levels. Present the Gender Action Plan (GAP) as a core component of the inception agenda and allocate dedicated time for discussion and endorsement of gender commitments. Actively engage women government representatives, women's ministries and gender focal points in reviewing the GAP and providing feedback to strengthen implementation and ownership.	Indicators: • GAP Indicator 4.1.a Proportion of workshop participants who are women, disaggregated by government level • GAP Indicator 4.1.b Acceptance of Gender Action Plan by stakeholders. Targets: • Women represent at least 30% of workshop participants across all governance levels • The Gender Action Plan is formally acknowledged.	Workshop reports, including participant lists, post-workshop assessments and signatories to the formal approval of the GAP.	Year 1–4	PMU ESS and Gender Officer	**Integrated within the activity budget**
Activity 4.1.2: Implement the Monitoring and Evaluation Plan and Knowledge Management Plan.	Include the ESS and Gender Officer as part of the M&E and knowledge management team to ensure gender considerations are sufficiently monitored and reported on during the project's implementation period.	Indicators: • **RF Indicator 4.1.1**Presence of an ESS and Gender Officer formally integrated into the M&E and Knowledge Management team, with documented inputs in M&E reports, progress reviews, and knowledge products Targets: • An ESS and Gender Officer is appointed and actively engaged throughout the project implementation period, with gender-specific data, analysis, and recommendations included in all M&E reports.	PMU ESS & Gender Officer Terms of Reference. Annual Performance Reports produced by the PMU.	Years 3 and 5	PMU ESS and Gender Officer	**Integrated within the activity budget**

[164] Since 500,000 SMSs are intended to be sent to notify subscribers in the target districts of upcoming radio shows (which take place over two implementation years), consultations, waste collection drives and other project-related events (see budget note C29 in Annex 2), it is assumed that SMSs will be sent out once per month over two years, resulting in 20,833 recipients, half of which (10,417) should be women, which is rounded to 10,000.

Annex 6. Logical Framework

Logical framework for the proposed project according to AF core indicators.

AF Core indicators	Baseline	Target	Means of verification	Assumptions
Number of beneficiaries	• Direct: 0 youths, 0 adult women and 0 adult men • Indirect: 0 youths, 0 adult women and 0 adult men	• Direct: 20,840 total beneficiaries, including 11,748 youths, 4,564 adult women and 4,528 adult men • Indirect: 1,351,223 total beneficiaries, including 766,143 youths, 293,710 adult women and 291,370 adult men	• The rural community committee in Beledweyne will monitor and record water dispensed to local residents and report this to the Project Management Unit (PMU). • The training of ministerial representatives and community committees will be tracked using attendance registers and recorded in the appropriate reports. • The number of households receiving agropastoral inputs such as seeds and saplings will be tracked in nursery logbooks by the community committees operating the nurseries.	**Water supply** • It is estimated that the 6 sand dams can supply water to 6,000 persons all year round[165]. • It is further estimated that low-flow pipes will provide water supply to a further 2,520 beneficiaries[166]. • Given that youths (aged 0–14) comprise 58.1% of the population of Beledweyne, 4,950 youths will benefit from improved water supply. Of the adults, 1,792 will be women and 1,778 men, given that women comprise 50.2% of the population in the district[167,168]. **Capacity-building** • 30 ministerial representatives will benefit from capacity-building[169]. • Six committees will be capacitated within each district, numbering on average 15 adult persons; therefore, 90 community members will directly benefit from training on NbS and hybrid solutions. • It is assumed that 50% of ministry representatives and committee members will be adult women and 50% adult men, resulting in 60 persons of each gender benefitting from training. **Community training on NbS** • Training on implementing NbS at demonstration plots for smallholder farmers, pastoralists and agropastoralists will benefit an estimated 12,200 people[170,171,172] • Based on youth and female population proportions of 56.7% and 50.3% averaged across the three districts, the expected beneficiaries will include 6,917 youths, 2,657 adult women and 2,626 adult men. **Indirect beneficiaries**[173,174]

[165] Assumes each of the six sand dams fills to capacity twice per year and stores ~10.8 million L of abstractable water (total volume of 36,000 m³ and porosity of 30%). During dry seasons (180 days), 20 L/person/day can be abstracted. Minimal losses are assumed due to subsurface storage and use of plastic liners. Therefore, it is estimated that 6,000 people would access the minimum water requirements all year round. It is further assumed that the full water supply will be abstracted; therefore, 6,000 direct beneficiaries will receive direct benefits through improved water supply from sand dams.

[166] Assumes that low-flow pipes installed in restored embankments will supply water to surrounding farms at seven breakage sites each restored in Jowhar and Afgooye. A low-flow pipe at each restored breakage will provide water to 18 farms (10 residents/household) based on average canal length of 1,700 m and assumed 2 ha farms measuring 200 m along the river. These pipes will supply water to an additional 2,520 beneficiaries

[167] Population figures, including age- and gender-disaggregation are based on the most recent district census data.

[168] UN OCHA. 2025. Somalia - Subnational Population Statistics. https://data.humdata.org/dataset/cod-ps-som. Accessed on 26 June 2025.

[169] Two representatives from each of the Ministry of Environment and Climate Change (MoECC), Ministry of Energy and Water Resources (MoEWR), Ministry of Livestock, Forestry and Range (MoLFR), Ministry of Agriculture and Irrigation (MoAI), Ministry of Planning, Investment and Economic Development (MoPIED) at the state and national levels will be capacitated by training activities. 30 ministerial representatives will directly benefit from training (Federal Member States: 2 FMS * 5 sectors * 2 persons = 20; National: 5 sectors * 2 persons = 10). The 12 ministerial staff enrolled in master's degree programmes will be among these 30 representatives and are therefore not counted.

[170] Smallholder farmers, pastoralists and agro-pastoralists will receive training on implementing NbS at demonstration plots and some will benefit financially from a Cash-for-Work modality. Moreover, smallholders that adopt NbS practices will be supported by access to inputs such as seeds and saplings from nurseries. Assuming that these smallholder households own or use ~2 ha of land, the intervention to place 4,000 ha under improved management will benefit 2,000 households. Assuming 6.1 persons per rural household, this training will directly benefit 12,200 persons across the target districts. It is further assumed that training on other NbS interventions will take place on the same land and cover the same beneficiaries, therefore these are not counted.

[171] Adaptation Fund. 2025. Green and Resilient Ecosystems for Somali Livelihoods (Hal-abuur). https://www.adaptation-fund.org/wp-content/uploads/2025/03/3_AFB.PPRC_.35.17-Proposal-for-Somalia-1.pdf. Accessed on 27 June 2025.

[172] National Bureau of Statistics. 2023. 2022 Somalia Integrated Household Budget Survey (SIHBS). https://nbs.gov.so/wp-content/uploads/2023/07/SOMALIA-INTEGRATED-HOUSEHOLD-BUDGET-SURVEY.pdf. Accessed on: 26 June 2025.

[173] The AF defines direct beneficiaries as individuals or households that are targeted by the project and receive high-intensity support — such as cash transfers, water resources agricultural extension services or direct training. In contrast, indirect beneficiaries are those who either receive low- or medium-intensity support or are not directly targeted but live within the influence area of the intervention.

[174] Adaptation Fund. 2014. Methodologies for reporting Adaptation Fund core impact indicators. https://www.adaptation-fund.org/wp-content/uploads/2016/04/AF-Core-Indicator-Methodologies.pdf. Accessed on 10 July 2025.

				• Indirect beneficiaries will include the entire populations of the target districts (350,682 in Beledweyne, 445,905 in Jowhar and 575,476 in Afgooye), excluding the direct beneficiaries.
Assets Produced, Developed, Improved or Strengthened	• 0 assets produced. • The capacity of government ministries to adapt to climate change, including disaster risk reduction and climate-resilience is not improved (1).	• 6 sand dams with V-shaped weirs, protected wells, solar pumping systems, elevated storage tanks and gravity distribution systems. Increase in water supply in the targeted areas to withstand impacts of climate change (6,000 people gain access to a minimum of 20L during the two dry seasons (180 days)). • 3 community managed tree nurseries operational and collectively providing seeds and saplings to ~2,000 agricultural, pastoral or agropastoral households to support revegetation of 4,000 ha of degraded rangelands. • SUDs (ditches, vegetated swales, detention basins and/or retention ponds) developed. SUDs improve floodwater drainage in three urban areas for at least 100 households and serve as demonstration sites. • The capacity of government ministries to adapt to climate change, including disaster risk reduction and climate-resilience is mostly improved (4) because of training delivered under the proposed project.	• Community committees and district PMU technical staff will be responsible for reporting on the construction, operation and maintenance of infrastructure associated with the nurseries, such as storage sheds. • The construction firm(s) contracted to construct the combined sand dams and weirs, associated water extraction, storage and distribution systems and drainage ditches will report on their construction and maintenance. • Additionally, an independent civil engineer will conduct two inspections of the combined sand dams and weirs and their water extraction, storage and distribution systems during construction. • The PMU Monitoring and Evaluation (M&E) Officer will report on capacity-building based on workshop reports.	• These targets are set under the assumption that it will be possible to implement project interventions in all planned areas. Although there is currently no conflict that would preclude this, it is possible that such conflict will arise during implementation as the security situation in the target districts is unstable. • Strengthening of service delivery in the disaster risk and climate resilience sector is rated as mostly improved (4) on the assumption that the combination of capacity building in workshops, production of rural and urban Adaptation Management Plans and a policy reform recommendations package will sufficiently capacitate ministries to replicate and upscale NbS and hybrid solutions interventions. It is assumed that the expertise and skills developed will be disseminated throughout all five ministries by those representatives receiving capacity-building.
Natural Assets Protected or Rehabilitated	• 0 ha of natural assets protected or rehabilitated. • Targeted urban areas are polluted extensively by poor waste management and drainage (1).	• 4,000 ha of agropastoral land will be rehabilitated or placed under climate-smart rangeland management. • 130 ha of riverine areas revegetated. • 200 ha with soil bunds constructed on slopes, reducing soil erosion. • Urban areas in target districts, including the Shabelle River, are polluted less extensively with improved waste management and drainage (4).	• Specialist consultants hired to establish demonstration plots for NbS will report on the establishment of these plots. • Urban community committees will report on the extent of urban pollution and floodwater accumulation, particularly within drainage channels.	• These targets are set under the assumption that it will be possible to implement project interventions in all planned areas. Although there is currently no conflict that would preclude this, it is possible that such conflict will arise during implementation as the security situation in the target districts is unstable. • Urban pollution reduction resulting from improved waste management is rated as mostly improved (4) on the assumption that the demonstration of its effect on flood risk will incentivise communities and district government to implement improved waste collection and disposal. This will be enabled by capacity-building within ministries and the production of urban Adaptation Management Plans.

Logical framework according to project components.

Project strategy	Project objective indicators	Baseline	Target	Means of verification (MoV)	Assumptions
Project objective: To increase the resilience and adaptive capacity of rural and urban communities in the Shabelle River basin through the effective replication and upscaling of established NbS and hybrid measures.	0.1 Number of people, disaggregated by gender, benefiting from innovative NbS and hybrid adaptation technologies and practices	0 individuals benefitting from innovative NbS and hybrid adaptation technologies and practices	20,840 individuals [175,176,177] benefitting from innovative NbS and hybrid adaptation technologies and practices, of which at least 4,564 are adult women	• Completion certificates of works under Component 2 • Result measurement exercises	• The proposed NbS and hybrid adaptation technologies and practices are implemented as planned and not impacted by operational constraints.
	Number of innovative NbS and hybrid adaptation technologies and practices replicated in the target areas and surroundings with protocols and knowledge products developed for upscaling	0 innovative NbS and hybrid adaptation technologies and practices replicated in the target areas and surroundings with protocols and knowledge products developed for upscaling	At least four innovative NbS and hybrid adaptation technologies and practices replicated in the target areas and surroundings with protocols and knowledge products developed for upscaling	• Replication of innovative NbS and hybrid practice will be assessed in the Annual Progress Report based on feedback from the Community Committees and PMU M&E Officer, • Replication will be assessed more comprehensively by independent assessment firm during Mid-term and terminal evaluations	• Training at demonstration plots and follow-up support from community committees provide adequate assistance to enable replication of NbS by attendees • NbS interventions are implemented and maintained appropriately by sufficient number of training attendees
Component 1. Capacity building for the replication and upscaling of innovative nature-based solution (NbS) and hybrid technologies in Somalia					
Outcome 1. Strengthened institutional capacity to use innovative NbS/hybrid solutions to reduce flood and drought risks	1.1 Percentage change in the capacity of ministry staff to implement NbS solutions, disaggregated by gender	• Capacity score baseline value to be determined during inception phase	• At least 20% average increase in capacity scores of ministry staff, including women	• Capacity scorecard results disaggregated by gender at project inception and closure.	• Training provided through the project results in improved capacity scores
Output 1.1. Capacity development programmes for flood and drought management, integrating innovative NbS and hybrid technologies, developed and delivered for institutional stakeholders.	1.1.1 Number of government, state and district-level authorities as well as NGO/CSO representatives trained through programmes developed and delivered, disaggregated by gender 1.1.2 Number of undergraduate and Masters modules in Sustainable Water Resources Management and Climate Change Adaptation developed	• 0 government, state and district-level authorities as well as NGO/CSO representatives trained through programmes developed and delivered • 0 undergraduate and Masters modules in Sustainable Water Resources Management and Climate Change Adaptation developed	• 20 (including at least five women) ministry and NGO/CSO representatives at the state level and 10 (including at least three women) at the national level trained, for a total of 30 representatives • One undergraduate and one Masters module in Sustainable Water Resources Management and Climate Change Adaptation developed	• Attendance lists • Training programmes • Training reports and feedback forms • Copies of training materials/manuals	• Active participation and involvement of authorities • Strong vertical partnerships developed to facilitate knowledge sharing and continuous learning • Local security and political context allow for smooth delivery • Programmes are contextually appropriate and accessible to all genders and social groups • Sufficient data is available on gender-differentiated challenges to be remedied by NbS to create gender-responsive assessment tools and NbS protocols

[175] The number of training beneficiaries includes ministry, CSO and NGO representatives (30), six community committees each comprised of 15 people (90) and 2,000 beneficiaries of training on demonstration plots (Outputs 2.2, 2.3 and 2.4) for a total of 2,120. 12,200 direct beneficiaries receiving training on demonstration plots were calculated based on the target of 4,000 ha of rangelands to be brought under climate-smart management and average household land ownership of 2 ha (Adaption Fund, 2025). As a result, ~2,000 ha will benefit from improved rangeland management, comprising 12,200 people at 6.1 persons per household (National Bureau of Statistics, 2023). It is assumed that the beneficiaries of soil bunds and restored riverine areas will be included among these 12,200, so no additional beneficiaries are included to prevent double counting. Of these 12,200 direct beneficiaries, 2,000 will be counted under the Project Objective Indicator (one person per household across 2,000 households).
[176] Adaptation Fund. 2025. Green and Resilient Ecosystems for Somali Livelihoods (Hal-abuur). Retrieved from: https://www.adaptation-fund.org/wp-content/uploads/2025/03/3_AFB.PPRC_.35.17-Proposal-for-Somalia-1.pdf. Accessed on 27 June 2025.
[177] National Bureau of Statistics. 2023. 2022 Somalia Integrated Household Budget Survey (SIHBS). Retrieved from: https://nbs.gov.so/wp-content/uploads/2023/07/SOMALIA-INTEGRATED-HOUSEHOLD-BUDGET-SURVEY.pdf. Accessed on: 26 June 2025.

Project strategy	Project objective indicators	Baseline	Target	Means of verification (MoV)	Assumptions
Output 1.2. Three Adaptation Management Plans in prioritised sub-catchment and floodplain area, with protocols for planning and implementing NbS and hybrid technologies for adaptation generated.	1.2.1Number of Adaptation Management Plans (AMPs) developed in sub-catchment and floodplain areas and validated including gender-responsive NbS and hybrid technology protocols	• 0 Adaptation Management Plans in the target sub-catchment and floodplain areas	• Three Adaptation Management Plans developed and validated for the target sub-catchment and floodplain areas including gender-responsive NbS and hybrid technology protocols	• Workshop reports and validation minutes, including participant lists (gender-disaggregated). • Validated rural Adaptation Management Plans, demonstrating explicitly how feedback was integrated. • Validated protocols.	• Improved capacity of stakeholders to develop planning instruments focusing on NbS and hybrid technologies • Timely and accurate hydrological modelling to support early development of rural Adaptation Management Plans • Validation workshops are able to achieve 50% female participation rates and women participants are willing and able to share feedback for integration into AMPs and their NbS protocols
Output 1.3. Three Adaptation Management Plans in prioritised urban areas, with protocols for planning and implementing urban green infrastructure technologies in flood-prone areas generated.	1.3.1Number of Adaptation Management Plans (AMPs) developed in urban areas and validated including gender-responsive urban green infrastructure technology protocols	• 0 Adaptation Management Plans in the target urban areas	• Three Adaptation Management Plans developed and validated for the target urban areas including gender-responsive urban green infrastructure technology protocols	• Workshop reports and validation minutes, including participant lists • Validated urban Adaptation Management Plans, demonstrating explicitly how feedback was integrated • Validated protocols	• Improved capacity of stakeholders to develop planning instruments focusing on NbS and hybrid technologies • Accurate urban runoff data is available • Validation workshops are able to achieve 40% female participation rates and women participants are willing and able to share feedback for integration into AMPs and their NbS protocols
Output 1.4. Six local community committees established or capacitated and trained on participatory planning, implementation and monitoring of rural and urban Adaptation Management Plans.	1.4.1Number of local community committees established or capacitated and trained on participatory planning, implementation and monitoring of Adaptation Management Plans 1.4.2Number of community training workshops on implementation of catchment and urban greening plans developed and delivered	• 0 local community committees established or capacitated. • 0 training workshops delivered.	• Six local community committees established or capacitated, composed of at least 50% women with at least two women in decision-making positions. • Two training workshops developed and delivered, attended by at least 50% women participants.with documented application of skills by female committee members in AMP implementation and monitoring within 12 months of training.	• Committee registration and governance documents. • Training workshop reports and materials. • Attendance lists. • Supervision missions.	• Active community participation, monitoring and evaluation. • Committees are recognised by local governance structures.
Component 2. Protection of productive assets and livelihoods by innovative and proven adaptation NbS and hybrid technologies					
Outcome 2. Enhanced resilience of vulnerable rural and urban populations to droughts and floods through the adoption of innovative adaptation practices, tools and technolog ies	2.1 Number of individuals, disaggregated by gender, with access to improved water supply and flood and drought protection thanks to innovative NbS/hybrid solutions achieved through the project	• 0 community members with access to improved water supply and flood and drought protection thanks to innovative NbS/hybrid solutions achieved through the project	• 20,810[178] community members with access to improved water supply and flood and drought protection thanks to innovative NbS/hybrid solutions achieved through the project, of which at least 4,557 are adult women	• Completion certificates of works • Activity completion certification. • Household surveys in rural communities.	• NbS solutions will be implemented effectively and census information used in beneficiary calculations provide accurate estimations

[178] Considers 90 community committee members receiving training, 8,520 beneficiaries of improved water supply and 12,200 beneficiaries of improved rangeland management, soil bunds and riverine restoration.

Project strategy	Project objective indicators	Baseline	Target	Means of verification (MoV)	Assumptions
Output 2.1. Six combined V-shaped weirs and sand dams built and equipped with solar pumps, elevated storage tanks, and gravity distribution systems in Beledweyne.	2.1.1 Number of fully equipped sand dams and V-shaped weirs built and equipped with solar water supply systems.	• 0 sand dams and V-shaped weirs built and equipped with solar water supply systems in the target areas	• Six sand dams and V-shaped weirs built and equipped with solar water supply systems	• Construction completion certificates • Site inspection reports and photographs. • GPS data and infrastructure maps.	• Communities will maintain infrastructure as a result of awareness raising and community-ownership facilitated under the proposed project. • Timely procurement of materials • Sediment loads do not undermine dam/weir functionality. • Community water governance structures are in place or established to oversee equitable use and maintenance. • Equipment (solar pumps, tanks) is appropriately sized, installed with local capacity, and spare parts are available.
Output 2.2. Rangelands brought under climate smart management practices through community empowerment in the three target districts	2.2.1Hectares of rangelands brought under climate smart management practices by the project in the target areas . 2.2.2 Number of community members including women with a demonstrated understanding of climate-smart rangeland management gained through demonstration plot training	• 0 ha of rangelands brought under climate-smart management practices by the project in the target areas • 0 community members including women trained and supported to implement climate-smart rangeland practices across the 4,000 ha target area	• At least 4,000 ha of rangelands brought under climate- smart management practices by a workforce consisting of at least 50% women • Women make up at least 50% of participants in nursery operations and rangeland management training, with documented evidence of women-led climate-smart practices adopted on at least 30% of the targeted rangeland area.	• Field reports and GIS mapping of rangeland areas. • Activity completion report. • Community training reports and attendance lists. • Supervision missions. • Direct reporting by the NbS specialist.	• Communities will use rangelands sustainably as a result of awareness raising and community-ownership facilitated under the proposed project. • Nurseries are maintained beyond initial establishment and are equipped to meet planting demand. • Demonstration plot learn-by-doing training will be sufficient for community committee members.
Output 2.3. Soil bunds constructed to reduce soil erosion and water run-off at the watershed level in Beledweyne	.4.1 Hectares of soil bunds constructed .4.2 Percentage of trained participants and tool recipients disaggregated by gender with post-training assessments showing improved knowledge and engagement in bund construction and maintenance.	• 0 ha of soil bunds constructed with support of the project in the target areas • 0 of participants in soil bund construction	• 200 ha of soil bunds constructed by a workforce consisting of at least 50% women • At least 50% of participants in soil bund construction activities are women, with documented evidence of their sustained involvement in watershed restoration and decision-making on land management at the community level.	• Field validation using GIS or drone imagery. • Labour records and implementation logs. • Community participation records and attendance lists. • Site inspection reports	• Bund spacing and design are adapted to local soil type, slope gradient and rainfall intensity. • Communities understand the long-term soil and water benefits and are motivated to maintain the structures after project support ends. • Tools provided (hoes, spades) are sufficient and equitably distributed to avoid friction or bottlenecks. • Demonstration plot learn-by-doing training will be sufficient for community committee members.
Output 2.4. River embankments restored and riverine areas revegetated or restored for the reinforcing of river embankments and retention and infiltration of flood water in Jowhar and Afgooye	.4.1 Number of embankment breakage sites restored or strengthened. .4.2 Hectares of riverine areas revegetated. .4.3 Number of community members including women employed and trained in	• 0 breakage sites restored in the target areas with support of the project • 0 ha of riverine areas revegetated in the target areas with support of the project	• 20 breakage sites restored or strengthened by a workforce consisting of at least 50% women • At least 130 ha of riverine areas revegetated by a workforce consisting of at least 50% women.	• Construction completion certificates • Mapping and geotagged monitoring photos. • Site inspection reports. • Nursery logbooks and planting records.	• Low-flow pipes remove incentive to create embankment breakages. • Tree and grass species are flood-tolerant, fast-growing, and well-adapted to waterlogged soils. • Demonstration plot learn-by-doing training will be sufficient for community committee members.

Project strategy	Project objective indicators	Baseline	Target	Means of verification (MoV)	Assumptions
	embankment restoration and revegetation activities in Jowhar and Afgooye.	• Women constitute 0% of the restoration workforce.	• Women constitute at least 50% of the restoration workforce, with documented skills development and increased household income among female participants, contributing to long-term community resilience and ownership of flood protection infrastructure.	• Direct reporting from community committees on restoration workforce attendance (gender-disaggregated).	
Output 2.5. Sustainable urban drainage systems (SUDs) improve urban drainage network.	2.5.1 Number of households benefiting from SUDs.	• 0 households benefiting from SUDS supported by the project in the target areas	• At least 100 households benefiting from SUDS with 50% of direct beneficiaries being women. .	• Construction completion certificates. • GIS-mapped drainage networks. • Field verification and photographic evidence. • Site inspection reports. • Most recent census data/UN population data, indicating the percentage of women in the town, thus the percentage of beneficiaries directly benefiting.	• Drainage designs align with municipal infrastructure and do not disrupt existing water or sanitation lines. • Community understanding of the link between solid waste and flooding supports use of drainage systems. • Local authorities commit to long-term maintenance budgets or assign roles to community groups. • Demonstration plot learn-by-doing training will be sufficient for community committee members.
Output 2.6. Waste management and its flood reduction benefits demonstrated in urban neighbourhoods.	2.6.1 Number of waste management demonstration sites established. 2.6.2 Number of community members including women trained and actively leading or participating in community-led waste collection drives.	• 0 waste management demonstration plots in the target areas • 0 women trained and actively leading or participating in community-led waste collection drives	• 10 waste management demonstration plots established in each district by a workforce consisting of at least 50% women. • Women constitute at least 50% of trained participants and lead at least three high-visibility waste management initiatives (one per town), with documented reductions in localised flooding and improved community awareness of the gendered benefits of waste management.	• Training attendance and feedback forms (gender-disaggregated). • Waste collection logs. • Field inspection before/after demonstrations.	• Local authorities or private partners are willing to collect and transport waste after demonstration events. • Demonstration sites remain visible and functional throughout the project duration to demonstrate flood reduction benefits.
• **Component 3. Improved enabling environment for investment in the replication and upscaling of adaptation NbS and hybrid solutions in Somalia**					
Outcome 3. Enhanced policies, incentives and guidelines to promote the use of proven innovative NbS measures and soil carbon trading	3.1 Number of incentive guidelines, policy recommendations and carbon credit viability assessments validated by government stakeholders	• 0 incentive guidelines, policy recommendations and carbon credit viability assessments validated by government stakeholders	• At least one gender-responsive incentive guideline and policy recommendations provided for each relevant policy and one carbon credit viability assessment	• Incentive guidelines, policy briefs and the carbon viability assessment finalised.	• Knowledge products generated in the project can effectively inform policy recommendations and carbon credit viability assessment.
Output 3.1. Lessons learned and best practices are codified and disseminated to promote investment in NbS.	3.1.1 Number of knowledge products and reports generated and shared by the project that incorporate gender-specific insights and recommendations	• 0 knowledge products and reports generated by the project that incorporate gender-specific insights and recommendations	• All project reports and dissemination materials include a gender-responsive section, with at least three gender-informed best practices documented.	• Reports, briefs and learning notes (digital and hard copies). • Web analytics from knowledge management platform. • Research and communication with government stakeholders (including MoECC and MoWER	• Stakeholders are willing to share lessons and best practices transparently, even when activities face challenges. • The online knowledge platform is maintained beyond the project duration or linked to institutional knowledge hubs.

Project strategy	Project objective indicators	Baseline	Target	Means of verification (MoV)	Assumptions
				representatives) to determine whether gender-informed best practices are discussed.	• Government stakeholders will prioritise gender-informed best practices.
Output 3.2. Recommendations for policy reforms and incentive packages are available at federal, member state, and local government levels to promote the development, replication and upscaling of NbS and hybrid measures.	3.2.1 Number of relevant policies analysed and policy recommendations generated to promote NbS and hybrid adaptation that include gender responsive provisions.	• 0 climate change, land planning and water management policies with recommendations generated to promote NbS and hybrid adaptation that include gender-responsive provisions.	• At least three gender-responsive climate change, land planning and water management policies with recommendations generated to promote NbS and hybrid adaptation that include gender-responsive provisions. . • . .	• Policy review reports and recommendations. • Workshop attendance (gender-disaggregated) and validation reports. • Policy reform recommendations package. • Attendance records from consultations under Activity 3.2.2 (gender-disaggregated).	• Government agencies remain committed to climate adaptation and NbS mainstreaming throughout project duration. • Legal frameworks allow for policy amendments at federal, member state and district levels. • Cross-sectoral coordination platforms (e.g. between environment, water, agriculture and planning sectors) are functional and inclusive. • There is political continuity and stability to sustain reform and uptake of recommendations.
Output 3.3: Gender-responsive public awareness programmes developed and implemented.	3.3.1 Number of community awareness events, SMS and radio programmes disseminated. 3.3.2 Number of men and women reached through tailored awareness campaigns.	• 0 community awareness events. • 0 SMS sent. • 0 bi-weekly radio programmes broadcast across two years • 0 men and 0 women reached through tailored awareness campaigns, via SMSs.	• Six community awareness events. • 500,000 SMS sent. • One bi-weekly radio programme broadcast across two years, with gender-differentiated programming. • 10,000 men and 10,000 women reached through tailored awareness campaign messages sent by SMSs [179].	• Media logs (radio airtime, SMS analytics). • Attendance lists from events. • Community surveys and baseline-endline assessments. • SMS-messaging lists containing phone numbers (gender-disaggregated) produced by community committees (see Activity 3.3.1; paragraph 157 in FP).	• Radio, SMS and print media platforms used for awareness have sufficient reach and credibility across target districts. • Awareness materials are context-specific, engaging, and presented in Somali and relevant local dialects. • Literacy levels and gender dynamics are considered in campaign design and delivery. • Community events are not disrupted by insecurity or political unrest. • Feedback from awareness and advocacy activities is used to iteratively improve messaging. • Women have similar mobile network access to men and community committees will be able to subscribe an equal number of women as men.
4 Component 4: Monitoring & Evaluation and Knowledge Management					
Outcome 4: Effective monitoring and evaluation and knowledge management implemented.	.4 Number of project evaluations completed (providing lessons learned and corrective actions).	• 0 project evaluations completed.	• Two project evaluations completed (one Mid-term Evaluation (MTE) and one Terminal Evaluation (TE)).	• MTE and TE reports.	• MTE and TE reports are completed accurately and on time by an independent consulting firm.
Output 4.1: Implementation of the Stakeholder Engagement Plan, Gender Action Plan,	4.1.1 Presence of an ESS and Gender Officer formally integrated into the M&E and Knowledge	• 0 ESS and Gender Officers appointed and actively engaged	• One ESS and Gender Officer is appointed and actively engaged throughout the project	• Sections within Annual Progress Reports and MTE and TE reports focusing on implementation of	• Gender Action Plan recommendations are acceptable to stakeholders.

[179] Since 500,000 SMSs are intended to be sent to notify subscribers in the target districts of upcoming radio shows (which take place over two implementation years), consultations, waste collection drives and other project-related events (see budget note C29 in Annex 2), it is assumed that SMSs will be sent out once per month over two years, resulting in 20,833 recipients, half of which (10,417) should be women, which is rounded to 10,000.

Project strategy	Project objective indicators	Baseline	Target	Means of verification (MoV)	Assumptions
Environmental and Social Management Framework, Monitoring and Evaluation Plan and Knowledge Management Plan.	Management team, with documented inputs in M&E reports, progress reviews, and knowledge products.	throughout the project implementation period.	implementation period, with gender-specific data, analysis, and recommendations included in all M&E reports.	Stakeholder Engagement Plan, Gender Action Plan, Environmental and Social Management Framework, Monitoring and Evaluation Plan and Knowledge Management Plan. • Direct reporting from ESS & Gender Officer .	• An experienced ESS or gender expert is available to assume the position of ESS & Gender Officer.