

CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: Sustainable Landscape Governance; Towards Climate Resilience of Community in Tempe Lake Ecosystem

Country: Indonesia

Thematic Focal Area: Rural development

Type of Implementing Entity: National Implementing Entity

Implementing Entity: Kemitraan (The Partnership for Governance Reform)

Executing Entities: Tim Layanan Kehutanan Masyarakat (TLKM);
Yayasan Romang Celebes Indonesia;
Yayasan AKU Rimba Indonesia

Amount of Financing Requested: **993,081** (in U.S Dollars Equivalent)

Project Formulation Grant Request (available to NIEs only): Yes No

Amount of Requested financing for PFG: 50,000 (in U.S Dollars Equivalent)

Letter of Endorsement (LOE) signed: Yes No

NOTE: LOEs 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 concept has been submitted before
- This is the first submission ever of the concept proposal

In case of a resubmission, please indicate the last submission date: 1/9/2023

Project / Programme Background and Context

Provide brief information on the problem the proposed project/programme is aiming to solve. Outline the economic social, development, and environmental context in which the project would operate.

- As a unity, the **Tempe Lake Ecosystem does not only cover the waters territorial but also includes areas that affect and are affected by the lake, namely the watershed landscape.**^[1] The regions that affect Tempe Lake are the Walanae Watershed and Bila Watershed. Meanwhile, the areas affected by Tempe Lake are the Cenranae Watershed and some parts of the Walanae Watershed.^[2] Tempe Lake, located in South Sulawesi Province, is one of the 15 critical lakes in Indonesia that the Government of Indonesia has designated since 2009. Currently, the Government of Indonesia has issued Presidential Regulation Number 60 of 2021 concerning Saving National Priority Lakes and including 15 critical lakes as priority lakes, including Tempe Lake.
- Administratively, the districts that contribute as sources of impact and recipients of both positive and negative effects in the Tempe Lake ecosystem include three districts, namely Soppeng, Wajo, and Sidenreng Rappang Districts. These three districts are directly adjacent to Tempe Lake. The Tempe Lake ecosystem is surrounded by a mountain range with an elevation of 1,500 to 3,000 meters above sea level (masl). The north watershed area in the Tempe Lake ecosystem is bounded by Bulu Simauran Mountains, Rantemario Mountains, and Latimojong Mountains in Enrekang District, with an altitude of 3,397 masl. While in the west, it is bounded by the Bulu Malloci Mountains, Sidenreng Rappang District, and the Bulu Niniconang Mountains, Soppeng District in the south with an elevation of 1,022 masl. These areas are the upstream of the Tempe Lake ecosystem, which affect the water volume in Tempe Lake.^[3]
- The water supply of Tempe Lake comes from the catchment area of the surrounding rivers, so Tempe Lake becomes a secondary reservoir that collects water before flowing out into Bone Bay. As a secondary

¹ Ministry of Environment and Forestry, Indonesia. (2019). Ecosystem-Based Climate Change Adaptation: Tempe Lake Ecosystem

² Anila, C. (2022). The Directions for Land Use in the Batu-Batu Watershed as an Effort to Mitigate Siltation of Tempe Lake, Hasanuddin University: unpublished.

³ Ministry of Environment and Forestry, Indonesia. (2019). Ecosystem-Based Climate Change Adaptation: Tempe Lake Ecosystem

reservoir for many rivers, the water level fluctuations of Tempe Lake depend on the inflow and outflow to and from Tempe Lake.^[4] Twenty-three rivers are flowing into Tempe Lake. All of these rivers are included in the two main watersheds, the Bila Watershed with an area of $\pm 1,410 \text{ km}^2$ that crosses three districts, namely Enrekang, Sidenreng Rappang, and Wajo, and Walanae Watershed with an area of $\pm 3,170 \text{ km}^2$ that crosses four districts, namely, Maros, Bone, Wajo, and Soppeng.^[5]

4. Meanwhile, the water bodies of Tempe Lake are located in three districts, namely Sidenreng Rappang 1,092.80 ha (8.67%), Soppeng 3,548.07 ha (28.16%), and Wajo 7,958.85 ha (63.17%).^[6] With a total area reaching $\pm 13,000 \text{ ha}$, Tempe Lake is a source of raw water needs for approximately 23,000 people around Tempe Lake. In addition, there are about 26,883 ha of production paddy fields spread over four sub-districts directly adjacent to Tempe Lake.^[7] Tempe Lake is also a habitat for 19 fish types. Farmers and fishers are the primary jobs of the people around Tempe Lake. Most people take advantage of the lake tidal conditions to perform agricultural and fishing activities. The smallholders plant corn and chilies at low tide (dry season), while they become fishers at high tide (rainy season).

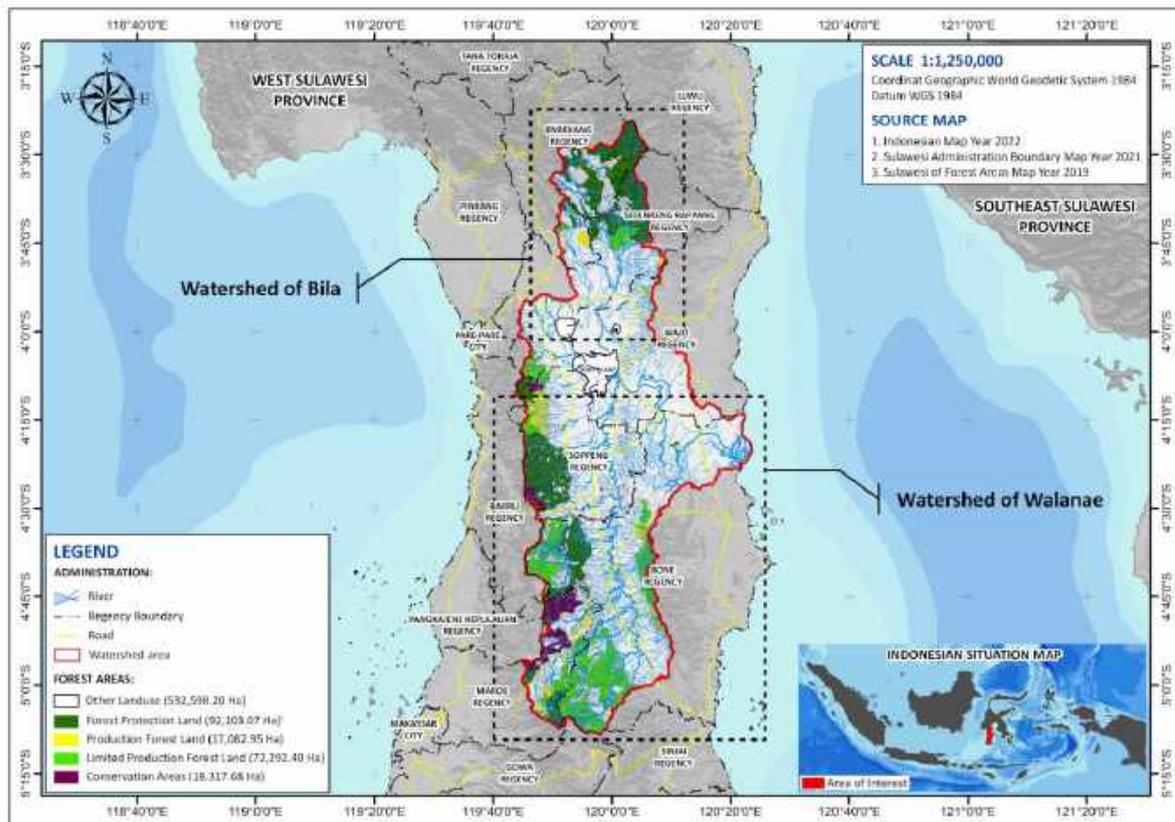


Figure 1. Tempe Lake Ecosystem Situation Map

5. The Lake Tempe ecosystem is a source of livelihood for more than 50 thousand people, most of whom are ethnic *Bugis*. The *Bugis* ethnic group is the largest ethnic group in South Sulawesi, which inhabits forest areas around Lake Tempe. They take advantage of natural resources in the Lake Tempe ecosystem. The utilization of these resources is cross-sectoral, namely forestry, agriculture, and fisheries.

Developmental Context

6. As a form of Indonesia's commitment to controlling climate change, the Government of the Republic of Indonesia has ratified Law Number 16 of 2016 concerning the Ratification of the Paris Agreement to The United Nations Framework Convention on Climate Change (UNFCCC) which is then followed up by submitting the 1st Nationally Determined Contribution (NDC) to climate change. This NDC provides a basic overview of long-term goals that will contribute to efforts to prevent a global temperature rise of 2°C and pursue efforts to limit global temperature rise to 1.5°C compared to pre-industrial times.
7. Through the NDC, the Government of Indonesia has established a climate change adaptation strategy aimed at reducing risks to all development sectors in 2030. These sectors include agriculture, water resources, forestry, increased knowledge management, and policies that converge between adaptation to

⁴ Afbiantir M. Parandangi, Rita Tahir Lopa, Bambang Bakri, 2020, Handling Floods in Tempe Lake with Regulatory Pools on Inflow, Journal of Engineering Research (JPE), Vol. 24, No. 2.

⁵ Fajar Setiawan and Hendro Wibowo, 2013, Physical Characteristics of Tempe Lake as a Flood Exposure Lake, Limnology Research Center – LIPI

⁶ Primary Data Analyzed by Tim Layan Kehutanan Masyarakat. (2022)

⁷ Darti, B.S., Bariroh, L., Herman, S.R.W. (2022). The Dilemma of the Revitalization Policy for the Utilization of Tempe Lake, Wajo Districts. Politics and Humanism. 1(1); Thing. 1 -9

changes climate change and disaster risk reduction. In addition, with regard to climate change adaptation, the Government of Indonesia is targeting NDC to realize economic and social resilience and sources of life as well as ecosystem and landscape resilience.

8. The Government of Indonesia has published the latest Nationally Determined Contribution document, namely Enhanced Nationally Determined Contribution (ENDC), which changed the emission reduction target from the previous 29% to 31.89% with its own efforts and from 41% to 43.2% with international support. This document also mentions key programs and strategies for adapting to climate change, including reducing drivers of vulnerability to climate change impacts, responding to climate change impacts and risk management, increasing community capacity and sustainability of ecosystem services, increasing the involvement of stakeholders at all levels in building climate resistance.^[8]
9. Through ENDC with major achievements in reducing emissions, Indonesia then developed a major program in order to support ENDC achievements, namely the Forestry and Other Land Use (FOLU) NET SINK 2030 program for climate change control. FOLU NET SINK is regulated in Minister of Environment and Forestry Decree No. 168 of 2022 concerning (Forestry and Other Land Use/FOLU NET SINK 2030 for climate change control. The major achievement in FOLU NET SINK is to reduce emissions through forest and land use. One of the program components in FOLU NET SINK is to reduce emissions through Social Forestry efforts. Social forestry is also later regulated in Director General Regulation No. 9 concerning social forestry management. Social forestry is a community-based forest management system that aims to improve the welfare and quality of forests and the environment. At present social forestry is not only directed at how to make people prosperous but is directed at how to maintain forests and reduce emissions.
10. The Ministry of Environment and Forestry also issued the Climate Village Program (ProKlim). ProKlim is a national scope program based on the Minister of Environment and Forestry Regulation number 84 of 2016, this program aims to reduce greenhouse gas emissions through adaptation and mitigation measures and provide incentives for the efforts made. This program can be proposed starting from the RW (*rukun warga/citizens association*), village or hamlet level. Climate change adaptation and mitigation efforts are carried out from the smallest group to the national level.
11. In the developmental context in Indonesia, Tempe Lake is one of the 15 priority lakes that must be saved. Tempe Lake is determined based on Presidential Regulation Number 60 of 2021 concerning Priority Lakes Rescue. Tempe Lake has a very vital role for the economy, social and livelihoods of the surrounding community. Tempe Lake experienced some forest and land damage in its water catchment area, high sedimentation, and overflow of water which later became a flood disaster for the lives of the surrounding community. In this regulation, a Regional Tempe Lake Rescue Working Group has been established, one of which is the Province of South Sulawesi. Even before the presidential regulation was issued, efforts to rescue the Tempe Lake had been made previously. A strategy for "Ecosystem-Based Adaptation of Climate Change: Tempe Lake Ecosystem," published by the Ministry of Environment and Forestry in 2019, served as a guide for efforts to protect Tempe Lake from climate change impact. The ecosystem of Tempe Lake is not significantly impacted by this, though. According to the evaluation's findings, a lot of tasks have not been completed because of financial challenges and the high expenditures involved. 90% of the actions in this plan are primarily focused on a technical approach (physical development), which accounts for the high costs.

Environmental and Climate Change Context

12. In the Tempe Lake Ecosystem context, **climate change has impacted weather anomalies**. The weather anomalies, such as an excess in rainfall, which raises surface runoff and affects erosion. Erosion carries accumulated soil particles into sedimentation and then flows through the rivers to Lake Tempe. Due to the siltation and capacity reduction brought on by this incident, Lake Tempe will now overflow when it rains more heavily, creating flooding in the area around the lake. Floods arise almost yearly, forcing people to change their livelihoods, and even difficult to determine the right livelihood according to climatic conditions.
13. The peak of rainy season occurs in November to February and rises again at April – July, while the dry season occurs in August – October, with annual rainfall in the lake area are 1,400 - 1,800 mm per year, while, in the forest (highland) landscape are 1,400 - 4,000 mm per year.. The maximum monthly evaporation was 310 mm recorded at Mallanroe station in October, and the minimum was 100 mm at Tanru Tedong station in June. The average annual



Figure 2. Flood Potrait

⁸ Enhanced Nationally Determined Contribution Republic of Indonesia, 2022

evaporation is about 2,010 mm.^[9]

14. The monthly rainfall in Tempe Lake ranges from 90 - 270 mm per month. The results of the rainfall projection show the percentage change in the value of future rainfall ranging from -15% to 45%, which tends to be the same throughout the Tempe Lake area. However, by two models used, the CSIRO model projects an increase in rainfall of up to 45% in August-November in almost the entire area of Tempe Lake.^[10]

Table 1. Changes in rainfall using the outputs of the Worldclim compiled climate model

Region	Rainfall (%)				
	Baseline	Future		Delta	
		CSIRO	MIROC	CSIRO	MIROC
Sidenreng Rappang	90 – 210	105 – 255	90 – 285	-15 – 45	-15 – 20
Wajo	90 – 255	105 – 270	90 – 240	-15 – 45	-15 – 20
Soppeng	90 – 270	135 – 300	75 – 300	-15 – 45	-15 – 20
Tempe Lake	90 - 210	105 - 255	90 - 210	-15 - 45	-15 - 20

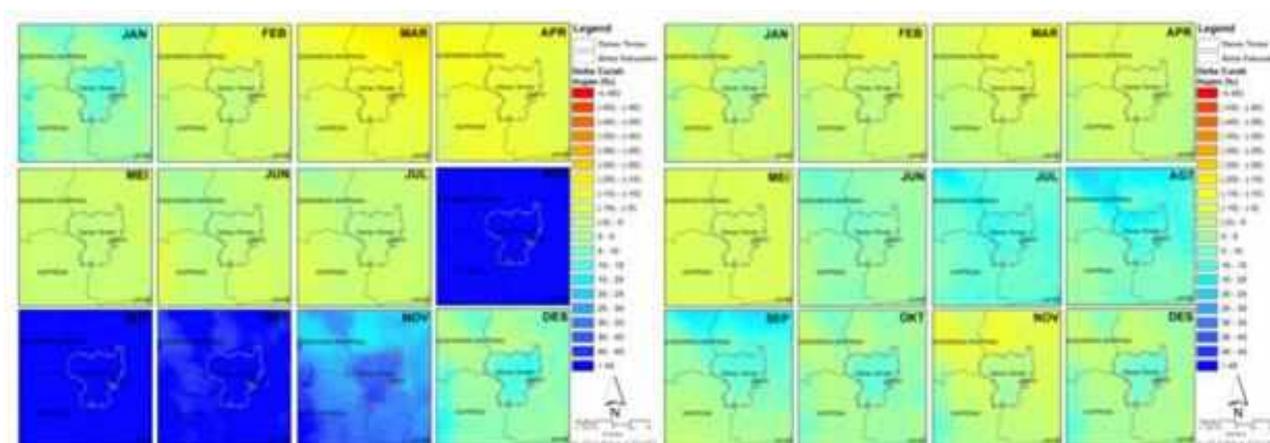


Figure 3. Percentage change in monthly rainfall models CSIRO (left) and MIROC (right) using the Worldclim compiled climate model outputs.

15. Rainfall in the Tempe Lake Ecosystem increases in intensity year after year. The most rainfall in the last ten years (2009-2019) fell in June 2018, totaling over 2,000 mm. Floods swamped 52 villages and seven sub-districts in Wajo Regency as a result of the increased rainfall, with flood heights reaching three meters. The flood's height has exceeded the floor height of most people's stilt houses, which typically stand at 2-2.5 m. Floods also caused crop failures in three districts of South Sulawesi Province, notably Wajo (7,591 ha), Soppeng (2,969 ha), and Bone (920 ha).
16. The number of flood occurrences in the Tempe Lake Ecosystem is increasing as a result of siltation in the rivers surrounding the lake, which reduces the effective area of Tempe Lake and hence expands the region of water overflow. The great intensity of erosion in the highland area causes sediment to flow into the large lake every wet season, generating this state. The utilization of land for dryland plantation agricultural activities causes significant erosion in the upper lake area (e.g corn and cloves).
17. In addition, to impacting flood events around Tempe Lake, climate change also puts pressure on the Tempe Lake ecosystem. It will result in decreased fish productivity in the next few decades. Climate change will affect the lake's physical, chemical, and biological characteristics. High rainfall will cause erosion which causes lake silting. Increased rainfall carries not only sediment but also contaminants. Various contaminants from agricultural activities and other sources are carried away by run-off flows and further exacerbate pollution in the lake. Sedimentation also causes the loss or change of aquatic biota due to changes in the physical structure of the lake ecosystem in the form of shrinking water surface area and reduced lake depth.
18. **The sedimentation rate in Tempe Lake is 1 – 3 cm per year.**^[11] The total sediment that enters Tempe Lake is 1,069,099 m³ per year from the upstream area of the Walanae and Bila watersheds, while that which is discharged through the Cenranae River is 550,490 m³ per year. The remaining sediment that

⁹ Using the RCP4.5 scenario which is a moderate scenario.

¹⁰ Ministry of Environment and Forestry, Indonesia. (2019). Ecosystem-Based Adaptation of Climate Change: Tempe Lake Ecosystem

¹¹ Siti Aisyah and Eldest Nomosatryo. (2016). Spatial and Temporal Distribution of Nutrients in Tempe Lake, South Sulawesi, OLDI. LIPI.

settles at the bottom of the lake is 518,609 m³ per year.^[12] Tempe Lake is separated into three zones based on the surrounding watershed: Zone I (Batu-Batu Zone) with an area of 7,230.94 hectares, Zone II (Sidenreng Zone) with an area of 416.06 ha, and Zone II (Bila Zone) with an area of 2,919.86 ha. According to this classification, the Batu-Batu River area (Zone I) contributed the most to the increase in sedimentation in Tempe Lake, with a total sediment value of 721,949.83 tonnes per year. **If not maintained, the worst impact of sedimentation is the loss of Tempe Lake in the future.** The rate of decline in the area of Tempe Lake reaches 1.48 km² per year, and it is estimated that in the dry season in 2093, Tempe Lake will disappear.^[13]

Table 2. Land Cover Change in 2012 – 2021 Period

Land Cover	Area (ha)	
	2012	2021
Water Body	568.32	755.97
Shrubs	6,630.84	4,209.15
Forest	24,817.62	24,790.44
Settlement	377.44	7,065.37
Agriculture	91,155.68	52,482.04
Savanna	59.59	118.62
Rice Field	12,528.89	47,860.34
Open Land	1,143.56	0.00

¹² Jeneberang-Saddang Watershed and Protected Forest Management Center (BPDASHL Jeneberang-Saddang). (2018). The role of BPDASHL Jeneberang-Saddang in the Management of Tempe Lake. Paper presented at the Priority Lake Management Coordination Meeting. 8-10 August 2018.

¹³ Ministry of Environment. (2014). Tempe Lake Rescue Movement (GERMADAN).

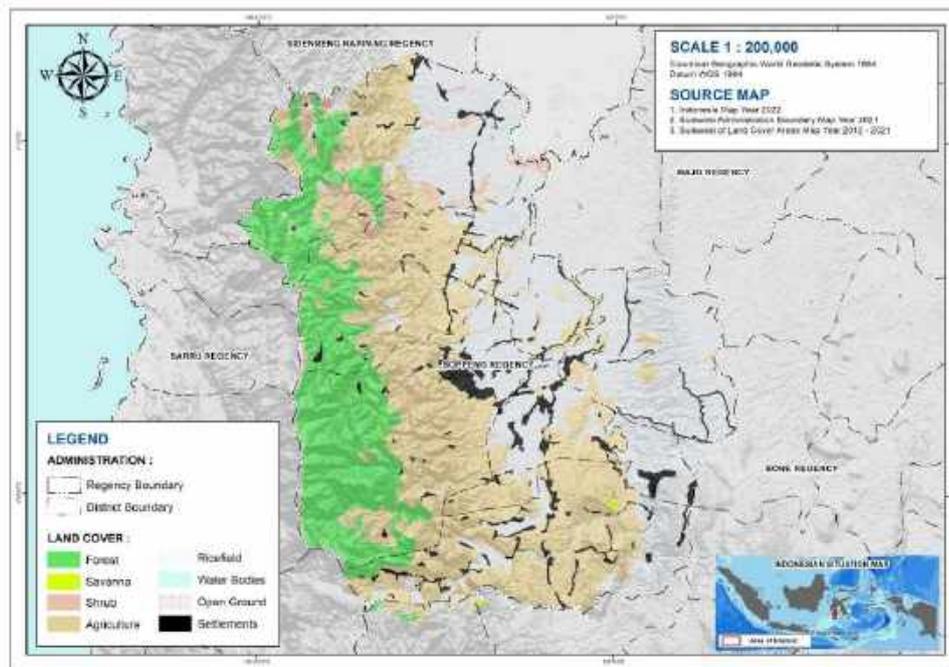


Figure 5. Tempe Lake Ecosystem Land Cover Map in 2012

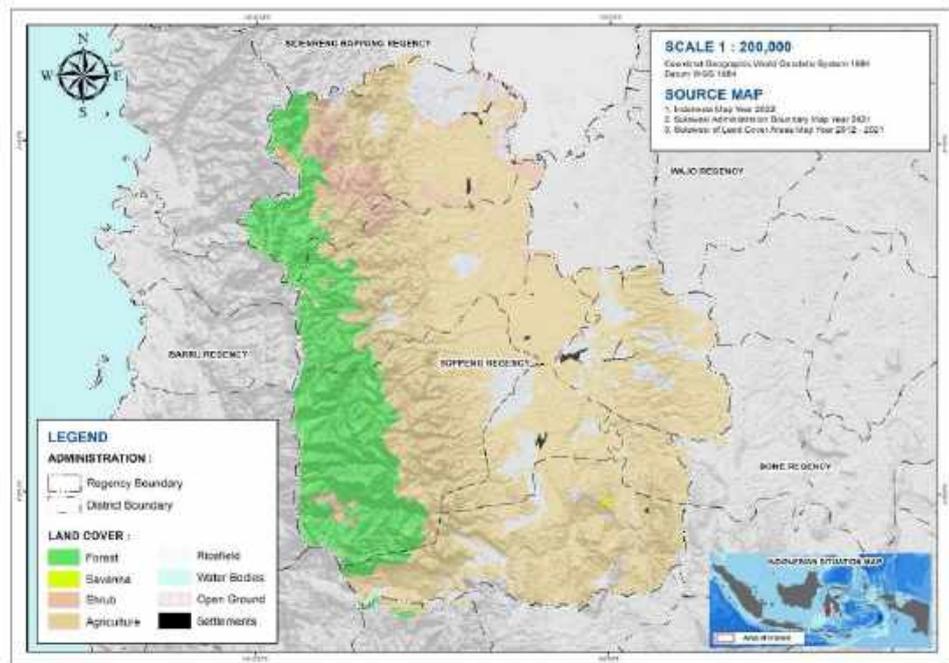


Figure 4. Tempe Lake Ecosystem Land Cover Map in 2021

19. The map and table above depict the situation of land cover changes in the Tempe Lake ecosystem over the last 10 years in areas that are included in the forest area and other land use. The most significant changes in land cover have happened in settlement areas over the last decade. The settlement had an area of 377.44 ha in 2012, but by 2021 it had grown to 7,065.37 ha (1,772%). Apart from settlements, rice fields are the second greatest land cover that has expanded in the Tempe Lake ecosystem. In 2012, the area of rice fields was only 12,528.89 ha, but by 2021, it had grown to 47,860.34 ha (282%). In the previous ten years, the growth in settlement and rice field land cover has also had an impact on the area of agricultural land and plantations in Soppeng Regency. The amount of agricultural and plantation land in 2012 was 91,155.68 hectares, but by 2021 it had decreased to 52,482.04 ha (-42%).
20. Despite a major decline in area over the last decade, agricultural land and plantations remain the majority of land cover in Soppeng Regency. This is because, in addition to experiencing a decline in area due to conversion to diverse land uses, numerous additional land covers have been turned into agricultural land over the last decade. This situation indicates a lack of vegetation that can tolerate surface runoff, increasing the possibility of erosion and increasing the sedimentation rate.

Socio-Economic Context

21. People in forest areas and other land in the Tempe Lake ecosystem rely on the state forest area for agriculture in general. Through a Social Forestry agreement, they currently have access to manage the state forest land. Social forestry is a sustainable forest management system implemented in state forest areas, private forests, customary forests by communities surrounding the forest, or customary law communities as the main actors for 35 years. In Indonesia, social forestry is regulated by Minister of Environment and Forestry Regulation No. 9 of 2021. Social forestry permits provide access for communities in and around forests to utilize forest sources. Corn, cloves, candlenut, and coffee are among the principal commodities cultivated in the forest region. Aside from that, there are other opportunities in the forest, such as palm sugar, candlenut, and honey. So yet, the palm sugar and honey potential has not been adequately handled.

22. Corn and cloves are intolerant of other plants, resulting in the **clearing of forest areas**. Erosion is unavoidable during the wet season, resulting in sedimentation in Tempe Lake. Corn is popular because it is simple to raise. Corn does not require irrigation like rice fields and, more significantly, has a stable market, which is why corn is planted in mountainous locations. In 2020-2021, erosion in highland areas would cause sedimentation, and some of the community's agricultural goods will fall into water bodies, leading in crop failure on 4,677 hectares of paddy fields and 2,311 hectares of corn fields. A farmer is expected to lose approximately IDR 20,000,000, which is the primary source of income for his family. Furthermore, the high rainfall caused a decline in productivity among clove plants. When it rains excessively, many freshly developed clove flowers fall to the ground, preventing the clove bushes from producing. Clove productivity varies greatly depending on the weather. The overall clove yield is 500-1,000 kg, which is much below the typical national production of 1,800-2,000 kg. Based on how the community's testimonies were when interviewed, this is also felt in the coffee commodity that the community is currently farming.



Figure 6. Portrait of a corn plant in the highlands

23. Other potentials in forest areas now underutilized because they do not provide a primary source of revenue for the local people. On the other hand, **the value of commodities is still very low**, such as honey, whose selling price is currently around IDR 100,000 per bottle (600 ml), which when compared to market honey with high value is around IDR 200,000 per bottle (600 ml) which means that it is twice as expensive as the price of honey sold by the community. Apart from honey, palm commodities also have a very low value. So far, people have used palm sap to produce traditional drinks and palm sugar (in the shape of shell). The value of palm sugar is around IDR 5,000 per piece, which is relatively cheap when compared to the selling price of palm sugar on the general market, which is around IDR 20,000 per piece, or four times the present value sold by the community. Candlenut was once the major commodity of the people in the forest area of Tempe Lake. However, it is currently experiencing a decline in productivity. According to a farmer interviews, this is related to the age of the plants, which are quite old and no longer productive. The candlenuts in his garden can only yield 500 kg of round candlenuts per year, whereas formerly they could generate one to two tons per year. In the market, round candlenuts are worth IDR 30,000. So, he can earn IDR 15,000,000 per year. This condition, combined with the lengthy processing process, makes farmers hesitant to collect candlenuts in the forest. When the candlenuts are dry, it must be broken from its shell during the processing process. This procedure takes a long time and excessive effort.

24. Meanwhile, the majority of the people of Tempe Lake are farmers and fisherman. On the shores of Tempe Lake, farmers grow rice and corn. In recent years, their agricultural area has been repeatedly swamped by floods caused by severe rains and the silting of Tempe Lake. The rise in rainfall corresponds to the increase in flood frequency. Flooding happens at least twice a year, from April to June and November to February.

25. Fishermen who rely on Tempe Lake for a living, on the other hand, face difficulties as well. Tempe Lake was submerged for an extended period of time due to flooding. As a result, the lake's fish are unable to reproduce optimally. Low tide conditions are required for fish to incubate eggs on soil or plants in shallow water. This cycle is broken, fish breeding is disrupted, and fish productivity is clearly declining. Currently, fishermen can only capture one bucket every day; if they are lucky, they can catch three buckets. Collectors value a bucket of fish at roughly IDR 100,000. The current catch is substantially below the previous two years, when more than three buckets of fish were caught per day. **This causes a decrease in income from fish catches for the fisherman.**

26. The aforementioned factors make it significantly more difficult for community households in Tempe Lake ecosystem areas (both on forest and/or waters), particularly for women and vulnerable groups. The assessment results show that participation, access, and control over resources and benefits for women and vulnerable groups are still low. Gender roles in the Tempe Lake ecosystem areas are still unequal. This is inextricably linked to societal assumptions that divide men and women's roles. Women's roles in the home are closely related to domestic matters such as cooking, raising children, and managing household finances. Meanwhile, the man is responsible for making a living as the head of the household. This disparity exists not just within the household, but also at formal village gatherings. This disparity exists not only within the household but also in formal village meetings.
27. As in the forest, very few women are members of Forest Farmer Group (KTH). This is also supported by research results, which prove that only 12% of women in South Sulawesi participate in Social Forestry Groups. Thus, group meetings are dominated by male members. Likewise, decision-making and access to building capacity in the group are only filled by men. Similar to what happened in the Forest Area, the Waters Body Area has normative constructs related to men's and women's roles that become a problem in the livelihood process. Because fishermen are still associated with men, many female fishermen are marginalized, and the benefits of capacity building are only followed by men. As a result, women who are also fishermen are not facilitated.
28. Not only women, but even youth, are still marginalized inside the village. Youth are not a demographic that should be excluded from initiatives to improve mountain and water governance. Because youth have the right to a better life. In actuality, however, youth are nearly never involved in village development or development activities. Youth are deemed insufficiently mature to take on roles, much alone make decisions in the home and in society. The Village Government has developed youth groups in the village (i.e Karang Taruna) to meet the needs of the young. The presence of this group, however, is merely a village structural formality. Youth are exclusively participating as manual laborers in the development of community facilities through this group. Youth are rarely seen in discussion forums, especially to participate to decision-making in village discussion forums.
29. There are no restrictions imposed by the general public on persons with disabilities in the target places. It's just that the family restricted their freedom of movement. They are not permitted to engage in strenuous activities such as farming or fishing, and some are not even permitted to leave the area near their house. Family members believe that participating in activities outside the house is dangerous for people with disabilities. Special infrastructure and facilities for people with disabilities are currently lacking in both of the project's target regencies.
30. There were no restrictions imposed by the general population on the elderly. Although there are very few senior fishermen, there are numerous elderly farmers who are still working. Their ages range from 60 to 70. They, too, aim to produce commodities on the land. There are also older persons who own land but delegate land cultivating rights to their offspring or in-laws. Those that grant land cultivating rights continue to receive a share of the harvest. However, there are some older persons who only perform activities at home since they are deemed old and pose a risk to their health if they do activities outside the house.
31. The *Bugis* culture, who reside in the Tempe Lake ecosystem, acknowledge five sorts of gender: (1) women; (2) men; (3) women with homosexual tendencies known as 'Calalai,' (4) men with homosexual tendencies known as 'Calabai,' and (5) someone who is not inclined to either known as 'Bissu'. *Bissu* used to be religion and ritual leaders in the local kingdom, but as government structures changed and the Samawi religion was introduced, *Bissu*'s activities were eventually limited the activity, and can only participate in local kingdom agendas. Meanwhile, Calalai and Calabai continue to participate in community social activities on a regular basis.

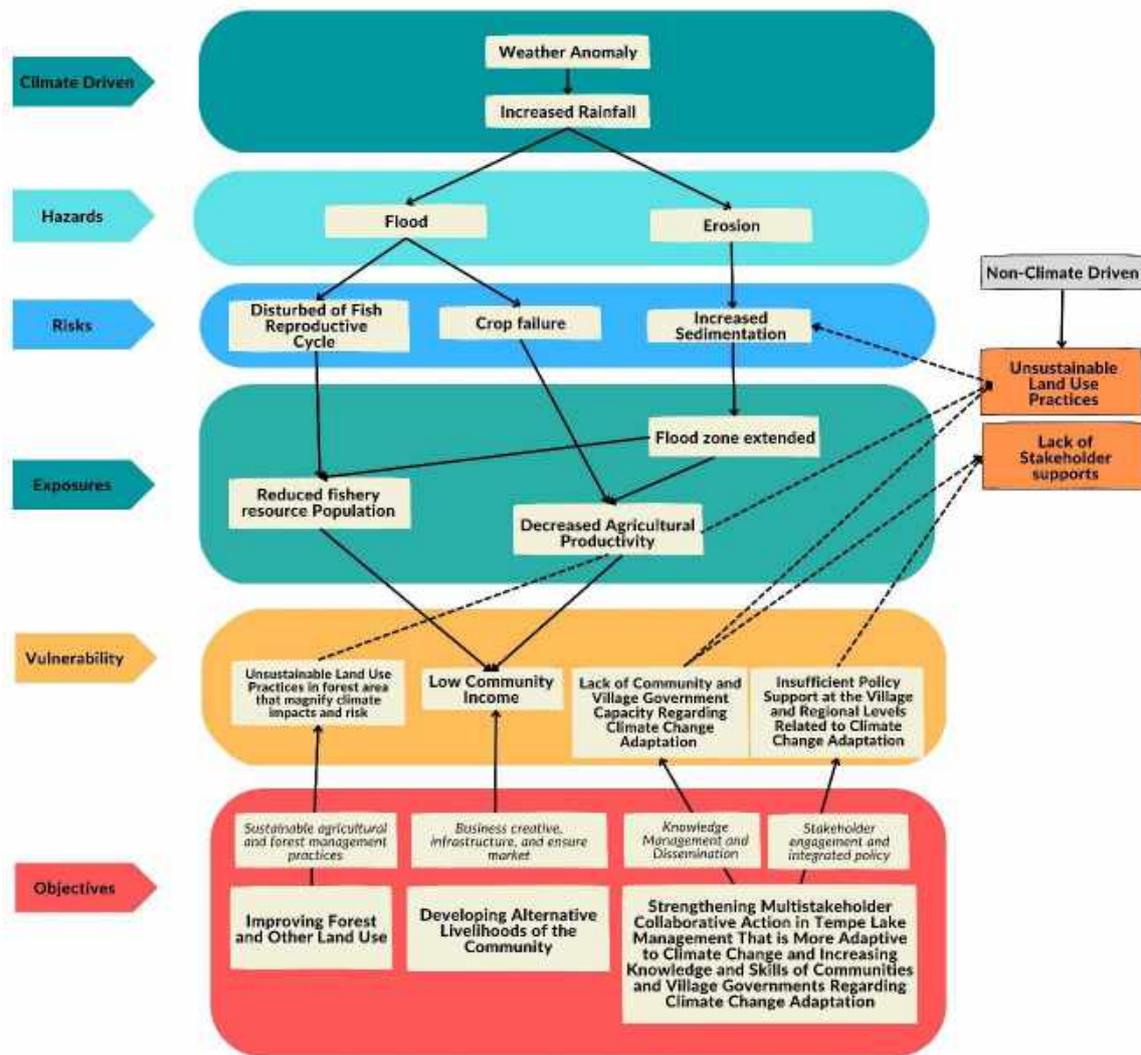


Figure 7. Project Climate Rationale

Adaptation Challenge

32. In the Tempe Lake environment, communities, stakeholders, or governmental systems are dealing with a number of difficulties brought on by climate change. The community, stakeholders, or government in the Lake Tempe environment will undoubtedly become more vulnerable as a result of their low level of adaptation capacity. This project will address climate challenges faced by communities and stakeholders in several categories namely, environment, livelihood, and policy and knowledge capacity.
33. In terms of the environment aspects, unsustainable land management techniques in forest areas show the difficulties communities have adjusting to them, while flood events in water areas have had an impact on the low productivity of fishermen by reducing fish populations.
34. In the livelihood aspect, the adaptation challenge for both people in forest areas and in water areas of the Tempe Lake ecosystem is the low value of managed commodities (especially forestry and fishery resources). Lack of market certainty for the community-managed commodities is another challenge.
35. In terms of policy, the lack of collaborative action among stakeholders for climate change adaptation at multiple levels is a challenge in and of itself for developing a more climate-resilient management of the Tempe Lake environment. This is exacerbated by the absence of integrated policy concerning the climate change adaptation in the project's target locations.
36. In terms of capacity, achieving the economic resilience of those most impacted by climate change is challenging due to a lack of community knowledge and skills in the management and use of resources related to forestry and fisheries. Another challenge is the lack of awareness and education about problems with adaptation from different spheres of life. Youth, particularly members of the millennial age, still play a very small part in promoting problems related to adaptation to climate change. The table below provides a more thorough explanation of these adaptation issues:

Table 3. Adaptation Challenges

Aspects	Challenges	Descriptions
Environment	Unsustainable land management practices in forest areas that increase climate vulnerability.	Community has not implemented an integrated management and utilization system for forest areas that takes into account social, economic, and ecological aspects. Current land management practices have changed land cover in forest areas to monoculture agriculture through the cultivation of corn and cloves. As a result, the amount of vegetation that can withstand surface flow when rainfall increases are decreasing, causing erosion to occur repeatedly.
	Fishery resource population decline due to flooding.	Increased rainfall continues to cause flooding every year and causes the Tempe Lake water body to never recede. This condition has an impact on the disruption of the fish reproduction cycle. Fish need low tide conditions to reproduce in shallow waters.
Livelihood	Low value of commodities managed by the community in the forest areas.	The development of potential forestry commodities has been less than ideal for the community surrounding and within the forest area. This is due to the fact that the value of managed commodities remains low. There has been no attempt to increase the added value of commodities. As a result, the community only focuses on cultivating monoculture agricultural commodities that already have value without paying attention to the ecological consequences of the commodity business. Furthermore, the low added value has yet to have a significant impact on community livelihoods.
	No market certainty to ensure the sustainability of community livelihoods in forest areas.	Without clear market certainty, management commodities are only sold in bundles. Most communities only sell managed commodities in the form of raw materials to traders whose prices are highly volatile. This condition also has an impact on the community's commodity development. They are concerned that their products will not be marketed. The community, on the other hand, must face this challenge because they have no option but to market the commodities they manage. This will certainly have an impact on the sustainability of community livelihoods.
	Low value of fishery resource commodities managed by the community in the Lake Tempe water ecosystem.	Flooding caused by weather anomalies reduces fishermen's catches because the number of fish populations decreases as the reproduction cycle is disrupted. There has been no attempt to present alternative livelihoods related to fishing resources. The fishermen have not dared to take this step because the added value of the fishery resources from which they make a living has not increased. This forces the fishermen to face the challenge, despite the fact that their livelihoods are in danger.
	No market certainty to ensure the sustainability of community livelihoods in water ecosystems.	In fact, the decline in productivity that has occurred in recent years has significantly affected their livelihoods. However, they have not been able to develop alternative livelihoods with higher economic value from managing fisheries resources. They have been hesitant until now because there is no clear market if they develop alternative livelihoods.
Policy	Lack of collaborative action in addressing climate Change issues in the Tempe Lake	To cope with the context of climate change, which has significantly impacted the Tempe Lake ecosystem, multi-stakeholder cooperation is required; this relates to several regional development sectors such as the economy, environment, agriculture, and fisheries. As a result, Tempe Lake management has not occurred in an integrated manner involving all components of society at the village, regional, and provincial levels, with each component focusing entirely on its own program objectives and directions. This will have an impact on all elements of the Tempe Lake ecosystem's climate resilience.
	No integrated policy support for addressing climate change adaptation issues in the Tempe Lake Ecosystem.	The attention of local governments has not been fully focused on the issue of climate change adaptation, instead focusing on the major sectors of regional development. On the other hand, weather anomalies continue to occur and have a huge regional impact. It has even influenced the occurrence of natural disasters such as floods, as well as damaged some infrastructure and impacted people's livelihoods. As a result, if this condition occurs, the region's climate resilience will suffer even more.
	Lack of Local Adaptation	Most communities in the Tempe Lake ecosystem have not

Aspects	Challenges	Descriptions
	Actions in the Tempe Lake Ecosystem That Support by the National Authorities.	prioritized climate change adaptation principles in their daily lives. Of course, in the midst of climate change, conditions that continue to occur require the community's constant attention and active participation in climate change adaptation efforts. Although some areas in the Tempe Lake ecosystem have taken various adaptive steps, this has not been done widely and has not even received support at the national level (for example, through the Climate Village Program).
Capacity	Lack of knowledge and skills in sustainable land management and forest areas utilization.	Most forest land management and utilization systems in place today are solely concerned with increasing productivity while ignoring ecological conditions. Monoculture farming practices are widespread. They are confused about the steps to take to manage and utilize forest areas with high economic value and sustainability. Similarly, there is no sustainable form of forestry commodity business development, either through intensification or diversification, for developing productive businesses based on forestry commodities. If this continues, sustainable management and utilization will be difficult.
	Lack of knowledge and skills in the management of fisheries resources, particularly among women and vulnerable groups.	They only rely on fish catches, which in recent years have decreased due to the impact of climate change. This is due to the lack of knowledge and skills in the community to develop productive businesses. Especially for women and vulnerable groups, even though they have the potential that can be optimized in efforts to manage and utilize fishery resources through productive business development. In addition, by developing productive businesses optimally, of course, this will become an alternative livelihood for the community in the waters of the Tempe Lake ecosystem. If productive business opportunities for Tempe Lake ecosystem fisheries resources are not maximized, the community's vulnerability to climate change will increase.
	Lack of knowledge and learning about climate change issues.	In general, local information dissemination and learning about climate change issues remain limited. Local communities should play an important strategic role in the Tempe Lake ecosystem's climate change adaptation actions. So far, no independent efforts have been made to disseminate information and learn about climate change. If there is still a lack of common understanding and awareness of the issue of climate change, community initiative and sensitivity to climate change adaptation actions will be difficult to implement.
	Lack of youth participation as influencers to disseminate climate knowledge and awareness.	Youth are rarely involved in local development activities. They are regarded as less mature in terms of taking on roles and making decisions. In fact, youth exclusively participate as technical workers in the development of community facilities and infrastructure. Youth are rarely seen in discussion forums, particularly in decision-making forums in villages. Youth, on the other hand, are capable of capturing data and processing it into information. They rarely miss information because they can access and convert data into knowledge. However, youth are still rarely involved in climate change issues, despite the fact that they can serve as mobilizers, at least among their closest peers.

Project / Programme Objectives

List the main objectives of the project/programme.

37. The ultimate objective of this project is to encourage sustainable governance as an effort to adapt and increase the climate resilience of the Tempe Lake ecosystem community. Specifically, the objectives of this project address:
- 1) Increase adaptation capacity through improving forest and other land use areas of the Tempe Lake ecosystem;
 - 2) Increase adaptation capacity through reinforcing community livelihood resilience in water areas of the Tempe Lake ecosystem;
 - 3) Strengthening collaborative action of stakeholders and cross-sectoral policies and knowledge management.

Project / Programme Components and Financing

Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the attached instructions for a detailed description of each term. For the case of a programme, individual components are likely to refer to specific sub-sets of stakeholders, regions and/or sectors that can be addressed through a set of well defined interventions / projects.

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)
1. Adaptation through improving forest and other land use areas of the Tempe Lake ecosystem	1.1.1. The presence of agroforestry system plantation and erosion restraint plantation	1.1. Strengthening forest and land management practices in order to reducing sedimentation rates	\$337,975
	1.1.2. The presence of participatory Village Land Use Plan in order to increase climate resilience		
	1.2.1. Increased community knowledge capacity on forest and land management-based erosion restraint and managing social forestry based businesses	1.2. Increasing the climate adaptive capacity of the community through improving sustainable livelihood strategies in the landscape of forest and other land use	
	1.2.2. Increased the added value of agroforestry commodities cultivated by the community		
	1.2.3. The presence of marketing network and partnership of social forestry based business		
2. Adaptation through reinforcing community livelihood resilience in water areas of the Tempe Lake ecosystem	2.1.1. Increased knowledge capacity and skills of the fisherman, women, and vulnerable groups on fisheries livelihood resources management	2.1. The development of alternative livelihoods based on women and vulnerability groups in water areas of the Tempe Lake ecosystem	\$ 163,358
	2.1.2. Increased source and value of fisheries livelihood resources managed by the community		
	2.1.3. The presence of marketing network and partnerships of fisheries livelihood resources business		
3. Strengthening collaborative action through cross-sector policies, and knowledge management	3.1.1. The establishment of the Working Group for tempe Lake Rescue and increased their capacity for climate change adaptation issues	3.1. Strengthening the capacity of stakeholders and cross-sectoral policies in supporting climate change adaptation actions in the Tempe Lake ecosystem	\$341,797
	3.1.2. The presence of policy of Action Plan to Tempe Lake Rescue based on climate change adaptation		
	3.1.3. The presence of Climate Village (ProKlim) as the climate change adaptation actions at the village level		
	3.2.1. Increased knowledge capacity and awareness of local communities regarding climate change issues through dissemination and learning	3.2. Increasing the knowledge capacity and awareness of community climate change adaptation through knowledge management and youth-based initiatives	
	3.2.2. Increasing the role and initiatives of local youth for campaigning the climate change adaptation issues		
4. Project/Programme Execution cost			\$79,735
5. Project/Programme Cost			\$922,865
6. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			\$70,216
Amount of Financing Requested			\$993,081

Projected Calendar

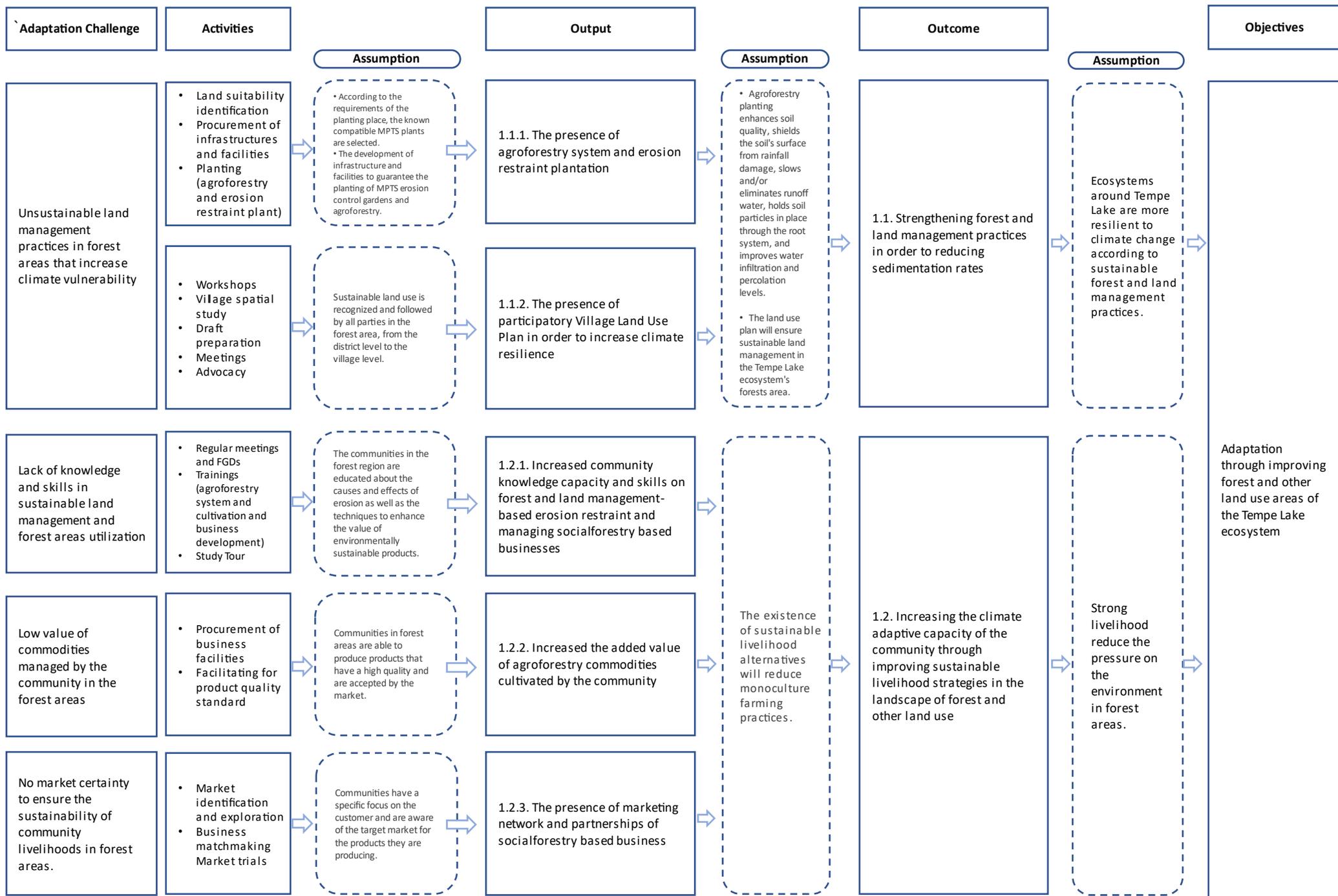
Indicate the dates of the following milestones for the proposed project/programme

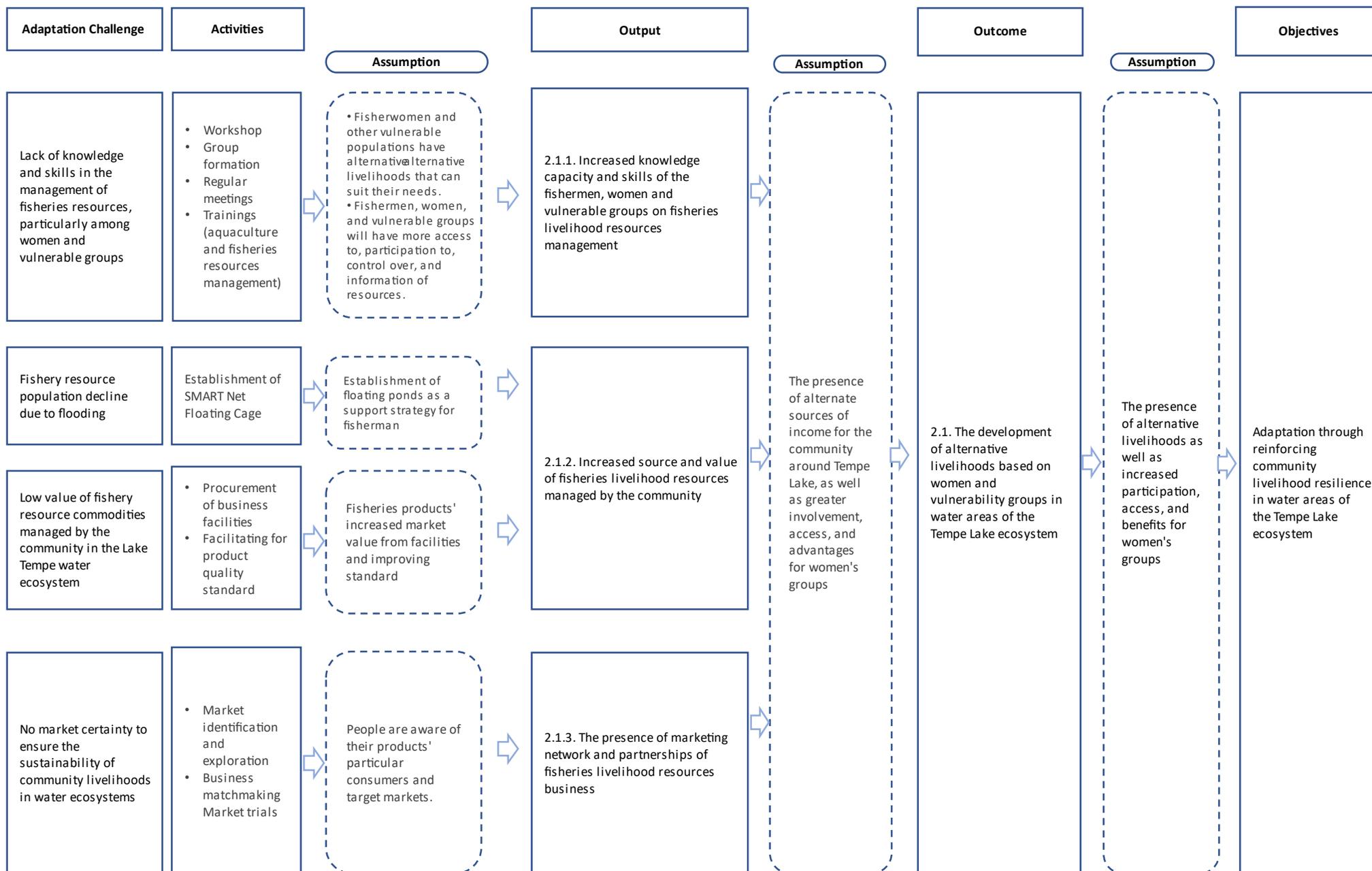
Milestones	Expected Dates
Start of Project/Programme Implementation	June 2023
Mid-term Review (if planned)	May 2024
Project/Programme Closing	May 2025
Terminal Evaluation	August 2025

A. Project Component

Describe the project / programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

38. The “**Sustainable Landscape Governance; Towards Climate Resilience of Community in Tempe Lake Ecosystem**” project will lead to improved governance based on the Tempe Lake ecosystem. The elements that this project will address are adaptation in forest and other land use landscape (agroforestry development, erosion restraint, strengthening local community institutions, and developing the sustainable livelihood through social forestry); adaptation in waters landscape (sustainable aquaculture practices, livelihood enhancement, and strengthening community institutions); and strengthening collaborative actions and knowledge management (multi-stakeholder forum, cross-cutting policies, dissemination, capacity building, and youth-based climate change initiative). The adaptation challenges that will be followed up in this project categorized by environment, livelihood, policy and capacity challenges. These adaptation challenges will be handled by this project by adapting to forest areas and other areas in the Tempe Lake ecosystem through the development of agroforestry in social forestry, suppressing erosion, and strengthening local communities; adaptation of water areas in the Tempe Lake ecosystem through sustainable aquaculture practices, development of alternative livelihoods, and strengthening of community institutions; and strengthening collaborative action through multi-stakeholder forums, cross-sectoral policies; as well as knowledge management through dissemination and learning, and youth-based climate change initiatives. The principal components of this project include:
- a) **Adaptation through improvement of forest and land use** in Tempe Lake ecosystems. This project promotes agroforestry practices as well as erosion control in forest regions, as well as on land and riparian. To ensure the effectiveness of this approach, institutional strengthening, knowledge and community skills related to causes and impacts, as well as erosion control based on climate change adaptation, are implemented. This project will also facilitate the development of a participative Village Land Use Plan that highlights the principles of climate change adaptation. The village administration and community can manage and utilize the land in the Village through this Village Land Use Plan based on the potential of existing resources and climatic circumstances, reducing the failure of land exploitation. The development of forestry commodity-based enterprises will be encouraged through social forestry initiatives to strengthen the economic resilience of communities in forest landscapes.
 - b) **Adaptation through reinforcing community livelihood resilience** in Tempe Lake waters area . This project promotes community-based creative business development in fishery sectors that can contribute to community livelihood enhancement. It will be executed through increasing product value, capacity building, and delivering access to market information, in the context of developing community-based businesses in product management in the water body/lake landscape. There will be sustainable group-based business development in the Tempe Lake ecosystem, involving vulnerable groups, especially women.
 - c) **Strengthening multi-stakeholder collaborative action** through cross-sectoral policies and developing collective intelligence by strengthening the capacity and awareness through **knowledge management**. This project will strengthen the parties' synergy to develop sustainable climate resilience. It will be achieved by establishing and strengthening multi-stakeholder forums as a means of communication and coordination in encouraging regional initiatives for climate change adaptation in the Tempe Lake ecosystem. To ensure increased knowledge capacity and awareness of community climate change adaptation, dissemination of information and development of appropriate learning systems will increase local communities' adaptive capacity. Thus, local initiatives (especially youth) can be strengthened to prevent potential losses from climate change impacts from being more significant. The involvement of youth, as the center of the change movement, at the local level will be initiated in this project to build awareness of the importance of climate change adaptation issues at the local level.





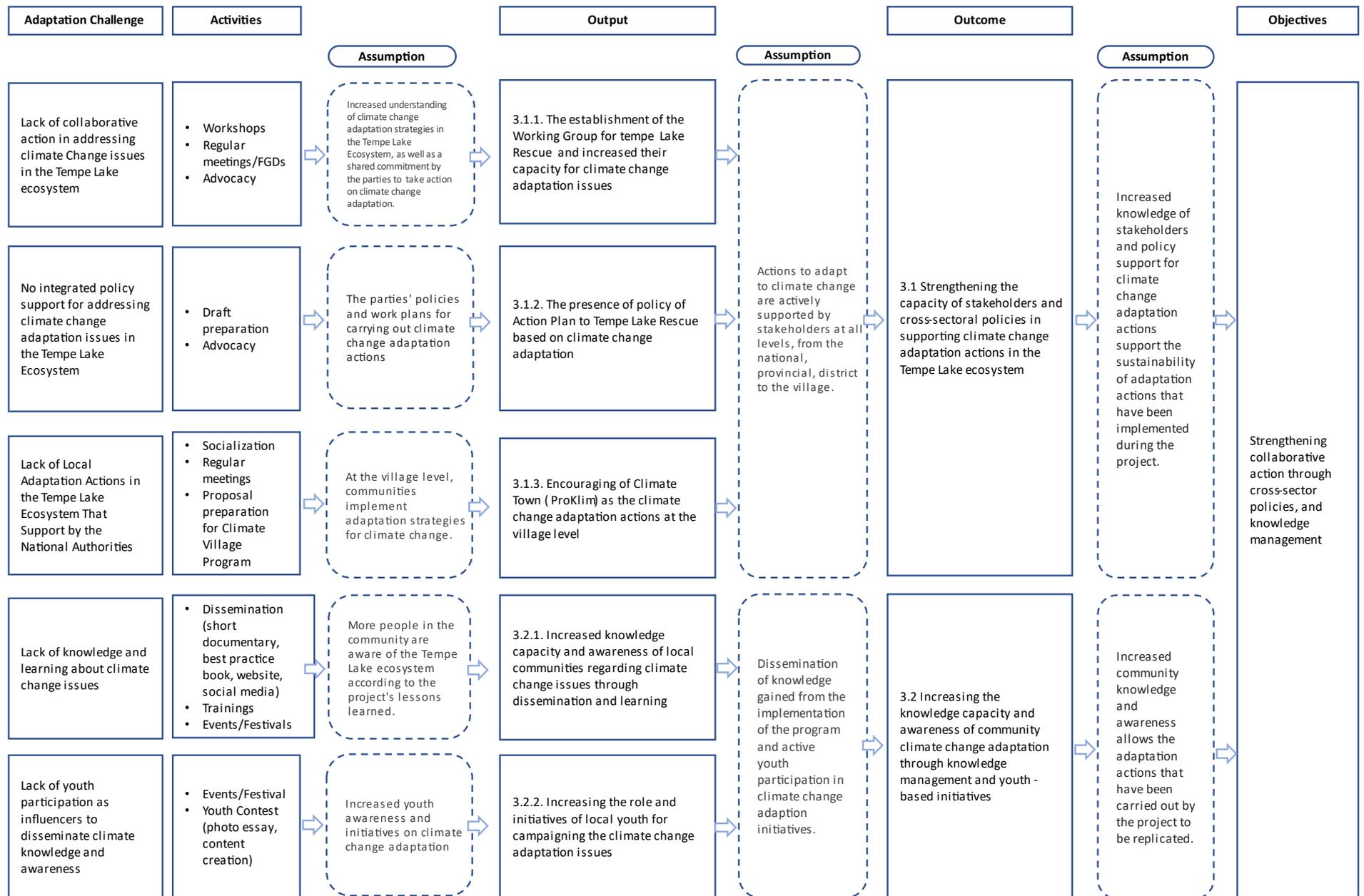


Figure 8. Theory of Change

Component 1: Adaptation through improving forest and other land use areas of the Tempe Lake ecosystem

39. Lake Tempe's sedimentation rate is 1-3 cm per year. This is influenced by extremely high rainfall and land use patterns in upstream areas that are dominated by monoculture agriculture such as corn and cloves. Monoculture farming is more common in the highlands of Tempe Lake. This is due to the community's high economic needs, as well as the lack presence of alternative livelihoods. As a result, these factors increase the rate of erosion into Tempe Lake. As a result, this project will improve land use practices by focusing on agroforestry management and crop planting to reduce erosion in the forest and other land use areas. This component objective will be realized as a result of the following outcomes:

Outcome 1.1. Strengthening forest and land management practices in order to reducing sedimentation rates

40. This project is directed to improving land governance with sustainable agroforestry systems in ecosystems to intervene in the adaptive behavior of the parties. This effort is expected to minimize land clearing for agricultural purposes in the forest area of the Tempe Lake ecosystem and will contribute to the control of sedimentation in Tempe Lake. This outcome will be achieved through:

Output 1.1.1. The presence of agroforestry system plantation

41. This output will address one of the adaptation challenges, specifically the presence of unsustainable land management practices in the project intervention area's forest areas. Among the key activities undertaken to achieve this output are:

42. **Land suitability identification.** Before planting, the types of plants will be determined by determining the suitability of the land in each target planting location. This is done to ensure that the crops planted are truly appropriate for the local land conditions.

43. **Procurement of infrastructures and facilities.** This project will facilitate the procurement of facilities and infrastructure to support the sustainability of agroforestry management. This facility is in the form of construction of "Seedling Houses" and procurement of commodity cultivation equipment in eight villages. It will be done by field facilitators using the live-in method to assist farmers in conducting nurseries independently in producing superior seeds and reducing costs in the cultivation process. Vulnerable communities and marginalized groups are directly involved as actors in the management of agroforestry systems that will provide ecological and economic benefits.

44. **Planting (agroforestry and erosion restraint plant).** Planting of 80,000 seeds is carried out in forest areas. The types of plants selected are Multi Purpose Tree Species (MPTs) to reducing the sedimentation rate by reducing the surface runoff rate and has economic value that can increase farmers' income. Planting options for agroforestry will include breadfruit, *rambutan* (*Nephelium lappaceum*), candlenut, and other woody and fruiting plants. Planting is also carried out on other lands outside forest areas and riparian. This planting was carried out to contribute that can improve soil quality, protect the soil surface from rainwater collisions, reduce runoff water velocity and volume, retain soil particles through the root system, increase infiltration and percolation rates of water in the soil. Plants such as *Arachis pintoi* and Vetiver are also planted to help reduce erosion rates; these plants are highly recommended for planting along riparian areas.

Output 1.1.2. The presence of participatory Village Land Use Plan in order to increase climate resilience

45. This output will also address adaptation challenges related to unsustainable land management practices in forest areas in the project intervention area by establishing participatory land use planning. Among the key activities undertaken to achieve this output are:

46. **Workshops.** This activity is an initial initiation that brings together all stakeholders at the village and regional levels to build a common understanding and agreement on the land use plan that will be developed.

47. **Village spatial study.** A village-level spatial study is carried out to investigate information about the landscape and potentials in the target village.

48. **Draft preparation.** The village land use plan document is being prepared in draft form. This is done in a participatory manner so that this document can fulfill all of the community's needs in terms of managing and utilizing land in the village. This document will be used to ensure that the village's land governance prioritizes climate change adaptation actions.

49. **Meetings.** To ensure that the village land use plan goes according to plan, regular meetings involving all components of the community are conducted with the intention of monitoring, evaluating, receiving input,

and making adjustments to other matters related to the dynamics that occur in the village

50. **Advocacy.** The village land use plan will then be internalized into a village regulation, allowing the entire village community to implement it. Therefore, advocacy for the development of village regulations will be facilitated.

Outcome 1.2. Increasing the climate adaptive capacity of the community through improving sustainable livelihood strategies in the landscape of forest and other land use

51. This project targets 200 households from eight villages to increase their capacity concerning the causes and impacts of erosion as an effort to ensure the improvement initiatives in Tempe Lake ecosystems, as well as enhancing their livelihood that directed towards sustainable manners. This capacity building is aimed at increasing community understanding and perspectives that are more oriented toward environmental improvement and the sustainability of their livelihoods. This outcome will promote the development of productive household scale businesses based on the utilization of commodities in forest areas, which will subsequently serve as the foundation for the community to transition to land management with a sustainable agroforestry system. This outcome will be achieved through:

Output 1.2.1. Increased community knowledge capacity on forest and land management-based erosion restraint

52. This output is intended to address the adaptation challenge in Tempe Lake, where the community lacks knowledge and skills in the management and sustainable use of land in forest areas. This will be accomplished by increasing community understanding and perspectives toward environmental improvements that are compatible with the sustainability of their livelihoods. The following are the primary activities carried out to achieve this output:
53. **Regular meetings and FGDs.** Regular meetings and FGDs are conducted with community groups as an effort to distribute information related to sustainable land management and utilization based on social forestry. This activity will assist the community in understanding and realizing the causes and effects of erosion, which will then serve as the foundation for the community to carry out sustainable land management with agroforestry systems and develop productive businesses based on social forestry.
54. **Trainings (agroforestry system and cultivation and business development).** This capacity training is aimed at increasing community understanding and perspectives that are more oriented toward environmental improvement and the sustainability of their livelihoods (including local business development). This project will assist the community in knowing and comprehending the causes and effects of erosion, which will then serve as the foundation for the community to carry out sustainable land management with agroforestry systems. Cultivation training and agroforestry system models are among the trainings that will be provided. In addition, there will also be serial training related to business development as an effort to strengthen and develop social forestry business group institutions (KUPS) to increase the group's institutional capacity with knowledge related to procedures for managing finances, managing capital, determining the cost of production, and financial management.
55. **Study Tour.** Study tours are conducted so that the target group can see and learn about the success of various external parties related to the management and utilization of forest areas and business development. This study tour will broaden the group's understanding of how to run and grow their business. This will also serve as a space for information sharing between groups, which will subsequently replicate these good practices in running their livelihoods.

Output 1.2.2. Increased the added value of agroforestry commodities cultivated by the community

56. This project will stimulate the establishment of forest commodity-based productive businesses to ensure sustainable management and utilization of forests and land as part of addressing the adaptation measures to strengthen climate resilience and the community's livelihood. Productive household businesses will be created in groups through the Social Forestry Business Group (KUPS), which is a part of Social Forestry. This business development is expected to increase productivity and income, hence increasing the community's adaptation to climate change. Key activities undertaken to achieve this output include:
57. **Procurement of business facilities.** This group will thereafter be assigned to manage profitable firms through home industries. This project will enable the procurement of all infrastructure and facilities required for the development of this profitable business. It will acquire home industry facilities and production houses to focus and make it easier to conduct group business activities in order for production to exist and be sustainable, as well as to streamline work.
58. **Facilitating product quality standard.** Facilitating business licensing, as well as lab tests and *hala* certificates, can result in higher-quality items that can be marketed more widely and at a higher selling price. Regular meetings will be arranged to monitor and evaluate fellow group members in order to ensure that this quality is maintained.

Output 1.2.3. The presence of marketing network and partnerships of social forestry based business

59. This output aims to address adaptation challenges in the context of livelihoods, where it has been discovered that there is no market certainty to ensure the sustainability of community livelihoods in forest areas. The following are the primary activities undertaken to achieve this output:
60. **Market identification and exploration.** Through assessment and market research approaches, the project will facilitate the processes of identifying, exploring, and determining potential markets for social forestry business products.
61. **Business matchmaking.** The project will facilitate meetings between potential business actors in order to establish a market network for the group's processed goods. This meeting will include vulnerable groups (youth, women, and people with disabilities) as creative business management actors.
62. **Market trials.** Market trials will be conducted by submitting processed products to product exhibitions or competitions to determine product quality and market needs.

Component 2: Adaptation through reinforcing community livelihood resilience in water areas of the Tempe Lake ecosystem

63. Weather anomalies caused by climate change cause annual floods in the area surrounding Lake Tempe. Because of the disruption of the fish breeding cycle, as well as the large population of invasive species in Lake Tempe, fish yields are greatly reduced. All of this has an effect on people's income, so efforts to strengthen the Tempe Lake ecosystem community's economy are important. This component objective will be realized as a result of the following outcomes:

Outcome 2.1 The development of alternative livelihoods based on women and vulnerability groups in water areas of the Tempe Lake ecosystem

64. This project is oriented towards strengthening the community's economy in waters area of Tempe Lake, which focuses on increasing the adaptability of women and vulnerable groups to have an economic foundation and gain access to a more equal and sustainable livelihood. This outcome will be achieved through:

Output 2.1.1 Increased knowledge capacity and skills of the fishermen, women and vulnerable groups on fisheries livelihood resources managemen

65. This output will address adaptation challenges, especially those related to a lack of knowledge and skills in fisheries resource management, particularly for women and vulnerable groups. The following are the primary activities undertaken to achieve this output:
66. **Workshop.** In the first stage, a workshop with all relevant stakeholders will be held. This is done in order to develop a common understanding and agreement on the management of fisheries livelihood resources.
67. **Group formation.** The formed group consists of women and vulnerable people who will be taken around Tempe Lake with the aim of diversifying livelihoods in addition to being fisherman by forming business groups that handle fisheries products. To maintain sustainability, fish cultivation groups, particularly in fisheries business groups, will be strengthened.
68. **Regular meetings.** The project will facilitate regular meetings with the target group. This will serve as an information distribution platform for the group to share information, latest knowledge, and strategies in developing the business.
69. **Trainings (aquaculture and fisheries resources management).** To ensure the accomplishment of this output, members' capacity will be strengthened through a series of entrepreneurship trainings. Administrative training and the development of group rules will improve group institutions so that there are routine group procedures and activities as a medium for documenting and monitoring members' evaluations of the group's operation. Modules will be created for the group in order for production to have standard procedures that are used together.

Output 2.1.2 Increased source and value of fisheries livelihood resources managed by the community

70. This output will address the environmental and livelihood challenges in the aquatic ecosystem of Tempe Lake. The activities in this output are directed at addressing the environmental context, where the current condition is that the population of fishery resources in the lake is decreasing day by day due to flooding. The low value of fishery resource commodities managed by the community is also an adaptation challenge in the context of community livelihoods. Among the main activities carried out to achieve this output are:

71. **Establishment of SMART Net Floating Cage.** The construction of sustainable net floating fish cage will be carried out in an effort to launch alternate techniques for fishing fisherman and to ensure the supply of fish raw materials in Lake Tempe. The key operation to ensure the viability of this group will be the acquisition of facilities and equipment to support cages, as well as the acquisition of fish fingerlings. The development of SMART floating net cages, which are extremely concerned with aspects of ecological sustainability in their application, is encouraged. SMART floating net cages can accommodate excess feed and fish metabolic waste and deposit it in the leftover feed storage system, reducing the input load of organic matter pollution in lake waters.^[14]
72. **Procurement of business facilities.** This project will centralize and facilitate the implementation of group businesses in home industries in order to maintain production and sustainability, as well as to make work more efficient. To run the home industry, the procurement of fishery resources processing business facilities and infrastructure tailored to the processed fishery resources products that will be managed by the community will be carried out.
73. **Facilitating for product quality standard.** The facilitation of product certification ensures product quality so that it can be accepted in a larger market, thus further improving quality standards. In addition, it will be done by procuring production equipment and facilities as well as facilitating business licensing to obtain standards that can access a wider market. Furthermore, lab test results and halal certificates that can be displayed on the packaging increase the product's marketability.

Output 2.1.3. The presence of marketing network and partnerships of fisheries livelihood resources business

74. The purpose of this output is to address adaptation challenges in the livelihood context, where it was discovered that there is no market certainty to ensure the sustainability of community livelihoods in Tempe Lake's aquatic ecosystem. The following are the main activities carried out to achieve this output:
75. **Market identification and exploration.** Assessment on market potential is needed to ensure that group members know the flow of goods, the types of markets they can access, and how the market accepts the products produced by the group. This research shows that the group has several market access options.
76. **Business matchmaking.** The project will encourage cooperation agreements (MoUs) between local communities and business actors who already have business entities and conduct various promotions. Access to capital will be facilitated in addition to market certainty to ensure sustainability and increase business production capacity.
77. **Market trials.** Market trials will be carried out by incorporating products into events in order to ensure market access for the developed products.

Component 3: Strengthening collaborative action through cross-sector policies, and knowledge management

78. The lack of multi-stakeholder collaboration in efforts to adapt to climate change in the Tempe Lake ecosystem has resulted in a lack of improvement. Furthermore, there are inefficient regional policies for climate change adaptation. In addition, climate change knowledge and awareness have not been widely disseminated throughout the community, particularly at the district level. As a result, efforts to increase knowledge and awareness among youth are important. So, this component objective will be realized as a result of the following outcomes:

Outcome 3.1 Strengthening the capacity of stakeholders and cross-sectoral policies in supporting climate change adaptation actions in the Tempe Lake ecosystem

79. This project aims to increase climate resilience from the district to the village level by integrating all aspects of the village community in climate change adaptation initiatives and enhancing the adaptive capacity of local communities in forest areas, land, riparian, and waters around Tempe Lake. This project will promote the Tempe Lake Rescue Working Group (POKJA) and ProKlim to be implemented at the intervention site. Reinforcing the Tempe Lake Rescue Working Group (POKJA) are conducted through a series of meetings and capacity building so that while organizing the movement, it may consider factors of climate change adaptation. In addition, ProKlim, a national program to create climate change adaptation actions at the local level, will be supported. This outcome will be achieved through:

Output 3.1.1 The establishment of the Working Group for tempe Lake Rescue and increased their capacity for climate change adaptation issues

80. This output will address adaptation challenges, particularly in terms of policy and stakeholder support. The collaborative actions of various parties in addressing climate change issues in the Tempe Lake ecosystem

¹⁴ Astuti, L. P., Hendrawan, A. L. S., & Warsa, A. (2020, June). Controlling pollution from floating cage culture in reservoir and lake using SMART-FCC system. In *IOP Conference Series: Earth and Environmental Science* (Vol. 521, No. 1, p. 012013). IOP Publishing. DOI 10.1088/1755-1315/521/1/012013. Link access: <https://iopscience.iop.org/article/10.1088/1755-1315/521/1/012013/pdf>

are currently found to be minimal. Among the main activities carried out to achieve this output are:

81. **Workshops.** The workshop activities will serve as the first step toward developing relevant multi-stakeholder collaborative actions to address climate change adaptation issues. Furthermore, all involved parties' capacity will be enhanced so that a common understanding can be developed and collaborative action between parties in Tempe Lake management that emphasizes climate resilience and the people's economy may be created. This allows stakeholders to improve regional efforts and assure their long-term viability.
82. **Regular meetings/FGDs.** The project will facilitate regular meetings of the Tempe Lake Rescue Working Group (POKJA). These regular meetings will discuss a series of possible actions to save Tempe Lake. In addition, this regular meeting will also be a space to monitor and evaluate the progress of the Working Group.
83. **Advocacy.** This project will facilitate advocacy for policy making related to the management of Tempe Lake. Furthermore, this output will encourage the parties to develop policies for Tempe Lake zoning through a Regent's Regulation Tempe Lake can be used by stressing characteristics of sustainability through this zoning regulations

Output 3.1.2 The presence of policy of Action Plan to Tempe Lake Rescue based on climate change adaptation

84. The absence of an integrated policy that serves as a reference for parties to jointly encourage regional-based climate change adaptation initiatives is one of the main challenges in encouraging landscape-based adaptation actions in the Tempe Lake ecosystem. As a result, through an action plan policy aimed at mainstream climate change adaptation issues, this project will encourage the initiative to save Tempe Lake. Among the main activities carried out to achieve this output are:
85. **Draft Preparation.** The elements of the intervention in the policy of Tempe Lake Rescue will focus on integrated management of Tempe Lake so that disaster risk reduction and greater community readiness for the threat of climate change can be implemented in one Tempe Lake management unit. Every local government unit involved in the environment, agriculture, and climate, as well as CSOs and academia, will be included in the policy formulation process for this Action Plan.
86. **Advocacy.** This activity is carried out to advocate for or ensure the issuance of an integrated policy related to the preservation of Tempe Lake during the project period.

Output 3.1.3 Encouraging of Climate Village (ProKlim) as the climate change adaptation actions at the village level

87. This output will also encourage local-level actions that have the opportunity to receive national support through the Climate Village Program. This is to address the challenge of the lack of village-level actions supported by various parties. Climate Village Program (ProKlim)^[15] will urge community and other stakeholders to participate in order to develop adaptation capability to the effects of climate change and obtain recognized for adaptation and mitigation actions performed. ProKlim will involve all components of society in order to achieve this, including the Village Government, fisherman groups, farmer groups, and marginalized groups like as youth and women. The following are the primary activities undertaken to achieve this output:
88. **Socialization.** Socialization at the district level is carried out so that information related to the climate village program can be disseminated to various parties. This is expected to build a shared vision of adaptation actions from the local to regional levels, allowing all stakeholders to contribute to any adaptation strategies encouraged by the climate village program.
89. **Regular meetings.** A series of regular meetings will be held with the group to share information about the climate village program. All provisions and procedures, as well as other technical matters related to climate change adaptation, will continue to be communicated in these meetings, so that the community, as the main actor in this ProKlim, can increase its capacity and be expected to build climate change adaptation action initiatives.
90. **Proposal Preparation for Climate Village Program (ProKlim):** Target communities will be registered in the climate change control national registration system (SRN) in order to be encouraged to become Climate Villages in accordance with the national objective of 20,000 climate villages by 2024.

¹⁵ ProKlim is a national program guided by the Ministry of Environment and Forestry. The implementation of ProKlim refers to the Regulation of the Minister of Environment and Forestry Number 84 of 2016 concerning the Climate Village Program

Outcome 3.2 Increasing the knowledge capacity and awareness of community climate change adaptation through knowledge management and youth-based initiatives

91. Climate change knowledge and awareness have not been widely disseminated throughout the community, particularly at the district level. Climate change adaptation action is not only a question of how to achieve community resilience but also provides broad access to information. Strengthening access to information and increasing knowledge capacity in projects is carried out by disseminating project lessons learned, from capturing and processing, to disseminating climate learning to beneficiaries. To ensure the learning process will continue, the project will build a knowledge management system, which is carried out through data and information system management and knowledge production. Knowledge and lessons learned from climate change adaptation actions obtained from the village are expected to be accepted and replicated in various regions in the future. In addition, project orientation is centered on participatory, transparent, and open activities because climate change adaptation will target all levels of society in adapting and anticipating the worst climate conditions, including youth groups. As the next generation, youth must be actively involved in climate change adaptation actions and be the center of efforts to increase local community awareness. Especially in today's digital era, youth can be a stimulus for change in society, including a change in mindset. This outcome will be achieved through:

Output 3.2.1 Increased knowledge capacity and awareness of local communities regarding climate change issues through dissemination and learning

92. This output will address the challenge of adaptation, especially in the aspect of knowledge capacity that is specific to the issue of climate change. Dissemination and learning processes in this project will be carried out to ensure community understanding and awareness are built to be able to continue climate change initiatives in the future. The following are the primary activities undertaken to achieve this output:
93. **Dissemination (short documentary, best practice book, website, social media).** Knowledge products that will be made are short video documentary, best practice book, poster, banner, infographic, operating website, and social media platform which will provide the best learning from the project achievements. The dissemination mechanism used differs depending on the knowledge product created. A short documentary video will be created from the beginning to the end of the project (the aim is to see what changes have occurred). We provide a team that creates video documentaries, and their job is simply to capture the changes that occur. Best Practice Book, a book based on the project's success stories, including how these changes can occur and what approach is used in the process, which is then published and disseminated to the general public as a lesson for others. Local governments, villages, and communities will receive posters, banners, and infographics. This is a lesson and resource for many aspects of the importance of climate change adaptation. The website and social media platforms will be used to disseminate information about program developments and adaptation actions. The target of information dissemination is the beneficiaries in village interventions in the Lake Tempe ecosystem, including the governments. Approximately 20,000 persons from 11 villages interventions will get the information by the dissemination process.
94. **Trainings.** Capacity building is conducted through training at local (village) and regional (district and province) scales. The training is aimed at increasing beneficiaries' capacity to read and understand the village microclimate. Local knowledge in reading climate patterns for rural communities will be strengthened by the design of integrating scientific knowledge that is relevant to stakeholders to ensure that learning can be accepted readily.

Output 3.2.2 Increasing the role and initiatives of local youth for campaigning the climate change adaptation issues

95. One of the adaptation challenges that will be addressed in this project is how to increase the role and initiative of youth to campaign and become influencers in disseminating climate knowledge at the local level. The following are the primary activities undertaken to achieve this output:
96. **Events/Festival.** This activity opens access to youth groups' involvement and becomes an arena for campaigns to increase collective awareness of environmental and climate change issues. This will be pursued through a series of knowledge and skills capacity building. The festival will be held at Tempe Lake with an environmentally friendly concept, prioritizing community participation, especially youth groups.
97. **Youth Contest (photo essay, content creation).** The contest including a poster competition and creative content presenting environmental issues will be conducted in these activities. This competition work will be used as campaign material for festival visitors to see. This activity will leave an impression on the youth in promoting climate change adaptation actions

B. Economic, Social, and Environmental Benefits

Describe how the project / programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund

98. This project will provide various benefits from an economic, social, and environmental point of view for the community in the Tempe Lake ecosystem, the government, and all parties involved in this project. All activities will be oriented towards participatory, transparent, and inclusive principles so that all parties who receive benefits can be actively involved in achieving project objectives. This project will pay attention to gender mainstreaming and equitable inclusion of vulnerable groups in every implementation. Providing access and active involvement of women in achieving goals will be the primary concern to be more gender-responsive.
99. **Economic Benefits:** This project will provide economic benefits to the communities most affected by climate change. Smallholders whose income is affected by climate change can be strengthened by developing creative businesses and expanding market access, and it will save them from market uncertainty. It is also hoped that strengthening community-based businesses will develop and contribute to regional income at the village and district levels. Beneficiaries' economic gains from creative business such as candlenut, coffee, palm sugar, honey (forestry sectors), and also fish processing and fish cultivation (fishery sectors).
100. The activity elements in this project will be geared towards addressing the challenges of improving the quality of livelihoods. All program impact products will be geared toward women's groups and businesses that are vulnerable to climate change. Creative business development is carried out in forest and water areas of the Tempe Lake ecosystem based on local commodities by creating business actors who are adaptive to very dynamic market changes and market uncertainty. Creative businesses are oriented towards a business partnership approach with related parties and then touch digital marketing. The flow of creative business involves farmer groups as raw material providers, and business groups play a role in increasing product value through product marketing. Creative business capital cooperates with the village government through Village-Owned Enterprises (BUMDesa), business development includes certification and standardization of product quality in collaboration with related agencies, then cooperation with the private sector in market certainty.
101. **Social Benefits:** This project will increase access to information and knowledge for stakeholders related to climate change adaptation initiatives. Increased knowledge capacity for stakeholders will contribute to increasing independent action initiatives, even after this project ends. In addition, the multi-stakeholder communication spaces initiated in this project are based on justice and inclusiveness so that all elements of society have the same opportunity to express their opinion and be actively involved in the development of climate-resilient regions.
102. The project will change the social construct of the division of roles between men and women that is at the root of the problem. A structured approach to women's groups will be an important first step to building women's engagement. The project will design activities that consider the position of women. This is because most women have jobs as housewives. The activities take up women's time throughout the day, so the project does not seem to force women to leave their activities to take care of the house. The project will not cause new issues for women's organizations, such as double burden. Therefore, the participation of women's groups must also consider the consensus and willingness of the women themselves. The same applies to other vulnerable groups, such as the youth or the elderly. Assumptions about youth and parent groups prevent them from participating in development programs. As a result, the program's presence will also provide opportunities for them with programs tailored to the group's general conditions, so that the project will target activities specifically involving them. With this in mind, an inclusive and welcoming project will be achieved.
103. This project also targets the active involvement of youth in campaigning for climate change adaptation actions, where the younger generation can become trendsetters for the climate change adaptation movement, starting from the village level, and is expected to develop further so that it can have an impact at the regional level. Benefits for affected communities, in this case, women and vulnerable groups, can open up opportunities to participate and be involved in achieving project objectives. Thus, it can create a constellation of resilient communities to climate change. This project will also involve women and vulnerable groups [e.g., minorities, marginalized groups, disabilities, elderly] in decision-making on every activity in this program. The involvement of women and vulnerable groups is expected to increase their resilience to the impacts of climate change.
104. **Environmental Benefits:** This project will contribute to the control of erosion and sedimentation in Tempe Lake through ecosystem improvement interventions in the catchment area. Strengthening social

forestry schemes, which are directed at sustainable community-based forest management systems, will ensure that land cover will be maintained with agroforestry systems. Land cover improvement is beneficial in reducing erosion in the upstream area, which has implications for controlling sedimentation in Tempe Lake. The presence of suckermouth catfish in Lake Tempe, an invasive fish, disrupts the ecosystem by preventing other fish from reproducing, so we define these fish as 'pests.' To overcome the presence of suckermouth catfish, this project intends to establish fish farming using floating net cages that will prevent suckermouth catfish from interacting with cultured fish. It also maintains the presence of consumed fish in Lake Tempe.

Table 4. Description of Economical, Social, and Environmental benefits

Category	Description of Benefits	Beneficiaries
Economy	<ul style="list-style-type: none"> Increasing the income of affected community groups through business development 	Community
	<ul style="list-style-type: none"> Contribute to local and/or regional revenue 	Government
	<ul style="list-style-type: none"> Expanding opportunities for cooperation in improving the economy, especially in the development of small and medium enterprises 	Community CSO Government
Social	<ul style="list-style-type: none"> Expanding opportunities for the most affected groups (women and vulnerable groups) to be involved in regional development, especially those oriented to climate change adaptation 	Community
	<ul style="list-style-type: none"> Access to information and knowledge about climate change adaptation 	Community Academics CSO
	<ul style="list-style-type: none"> The existence of policies that are directed to support the initiation of climate change adaptation down to the village level (Policy for Tempe Lake Rescue Action Plan, ProKlim) 	Government Community
	<ul style="list-style-type: none"> The existence of a multi-stakeholder communication forum so that various parties can have the same opportunity to initiate climate change adaptation 	Community Government CSO Academics
Environment	<ul style="list-style-type: none"> Ecosystem improvement (especially sedimentation and erosion control) from planting with agroforestry patterns 	Government Community
	<ul style="list-style-type: none"> Through agroforestry schemes, it helps to absorb atmospheric carbon dioxide, reduce emissions and global warming 	Government Community
	<ul style="list-style-type: none"> The implementation of sustainable land management practices in the catchment area with the presence of a nursery 	Community

C. Cost Effectiveness

Describe or provide an analysis of the cost-effectiveness of the proposed project / programme

105. Principally, cost effectiveness analysis compares the output produced from various input combinations. Hence, the lowest cost combination producing the expected output can be estimated. Or it could also identify the best output from a cost whose amount has been determined. All of them refer to the principle of effectiveness.
106. Cost effectiveness analysis on this project compares the costs with the results of the two implemented projects. The first project is a project carried out by the central government through the "Ecosystem-based climate change adaptation: Tempe Lake" project, and the second project is a project proposed in the AF program, namely "Sustainable Landscape Governance; Towards Climate Resilience of Community in Tempe Lake Ecosystem."
107. In the two projects implemented by both the government and this AF Project, the expected output is a form of community adaptation to the climate change impacts on the Tempe Lake ecosystem. The intended adaptation is human capacity development in dealing with climate change by measuring the impact of the projects being carried out.
108. These results cannot be assessed precisely when the project has not yet been implemented. Therefore, estimation or projection on several possibilities in the future is necessarily conducted. In this case, a

result estimation approach will be used based on historical assumptions (experience from the previously implemented project). The input combinations that can be submitted include the following:

- (1) Central government project: "Ecosystem-based climate change adaptation: Tempe Lake" –Project 1
- (2) The AF project proposed by NIE and EE: "Sustainable Landscape Governance; Towards Climate Resilience of Community in Tempe Lake Ecosystem" – Project 2

109. There are many other possible combinations, but in this case, only this simple alternative uses as material for cost-effectiveness analysis. The following details are the projects implemented based on the planning of each alternative project.

Table 5. Comparative analysis between two different projects

Detail	Project 1	Project 2
Approach	Civil Engineering and Regulation	Vegetation Technique and Regulation
Implementation methods	Physical construction	Empowerment, planting, and training
Implementation duration	5 years	2 years
Location	Tempe Lake ecosystem (The Regency of Soppeng, Wajo, and Sidrap)	Tempe Lake ecosystem (The Regency of Soppeng, Wajo, and Sidrap)
Cost	>\$4,000,000	\$993,081
Quantity (the number of beneficiaries)	25 villages (64,683 persons)	11 villages (20,621 persons)
Quality	Physical endurance improvement	The improvement of physical endurance, ecology, economy, and community capacities
Sustainability	Economy, Environment	Economy, Social, Environment

Table 6. Cost Effectiveness Analysis

Detail	Project 1	Project 2
Cost	Expensive	Inexpensive
Output	Very Good	Very Good
Ratio	Expensive/Very Good	Inexpensive/Very Good
Conclusion	Rank 2	Rank 1

110. The analysis of costs can be observed in how much each project costs; project 1 costs more than \$ 4,000,000 and is more expensive than project 2, which costs \$ 993,081 and is significantly less expensive. Assessment of the project's output to determine its quality and effectiveness. The output of projects 1 and 2 is the same—a method of community climate change adaptation, so that it is also feasible to state that the output's assessment is very good. However, the two projects' divergent approaches have an impact on the final project's quality. In project 1, the objective was to improve the target location more physically resilient; in project 2, the objective was to improve the community more physically, ecologically, economically, and socially resilient.
111. On a cost per beneficiary basis, project 1 will cost \$61.84 per person with a total beneficiary of 64,683 people while project 2 (Proposed Project AF) with a total budget of \$993,081 with a total component cost of \$843,130 will benefit beneficiaries benefits of \$40.1 per person, this calculation does not include Execution Cost and Project Cycle Management costs.
112. Meanwhile, on the sustainability aspect, cost-effectiveness is calculated based on the benefits received by the beneficiaries after the project period. Project 1 provides economic and environmental benefits to the project location, which if calculated using a valuation approach will provide benefits of \$919.86, while project 2 provides economic, social and environmental benefits to the project location, which if calculated using a valuation approach will provide benefits of \$174.22. In terms of the sustainability aspect, project 1 has greater benefits because the investment value is greater than project 2. However, from a sustainability perspective, there are social aspects that are more profitable for project 2 to see the sustainability of the project.
113. Therefore, based on the results of the analysis of the two adaptation programs using the principle of cost effectiveness, it was found that Project 2, the AF Project proposed with the title "Sustainable Landscape Governance; Towards Community Climate Resilience in the Lake Tempe Ecosystem," is the best project because it produces the best output ratio at the lowest cost, as well as sustainability that is more than a social aspect.

D. Alignment with National and Sub-National Sustainable Development Strategies

Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national adaptation plan (NAP), national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

National Development Strategies

114. This project aims to participate in Indonesia's national development related to improving the economic standard of the community in each region, reducing inequality through development that minimizes the risk of natural disasters based on environmentally friendly natural resource management and climate change adaptation, as stated in the Indonesia **Nationally Determined Contributions (NDC)** one of them is maintaining forest sustainability through community-based management contained in social forestry.^[16] This NDC document includes climate resilience directives such as: (1) Planning and land use certainty. This project will support this path by developing forest area management plans and blocks in the Social Forestry area in Soppeng District; (2) Promotes water resistance. The project will contribute to this path by implementing erosion control through agroforestry plantings.
115. The Indonesian Government issued **Presidential Regulation 60 of 2021 concerning Saving National Priority Lakes**. The Presidential Regulation is then used as a reference for all relevant ministries and institutions to build collaborative actions and strengthen synergy in efforts to accelerate the rescue of 15 national priority lakes, one of which is Tempe Lake. In point (3), the rescue of aquatic ecosystems, riparian ecosystems, and lake water catchment areas, a sedimentation control program is included, which will be realized by maintaining land cover in the upper Walanae watershed, Soppeng Regency. At this point, the goal is also to ensure the availability of a reference for the use of aquaculture in the lake using floating net cages. This project also constructs floating net cages for local fish farming and manages the lake area in a sustainable and environmentally friendly sort of way.
116. It contains an agenda to support social forestry programs in the **Presidential Regulation of the Republic of Indonesia Number 59 of 2017** concerning the Implementation of the Achievement of Sustainable Development Goals (SDGs), which is then described in the **National Action Plan years 2021-2024**. This goal will be supported by the project by strengthening and developing social forestry groups in the Soppeng District. This document also contains information on lake revitalization, which is in line with project activities that will form a fishery group in Wajo District to create a culture group to protect the fish in Lake Tempe from surviving invasive fish.
117. Improvement of land use in lake ecosystems, the intervention of agroforestry in social forestry areas through the cultivation of erosion-preventing plants, and strengthening of group institutions through capacity building and business development skills in line with the policy direction of the **National Strategic Plan 2020-2024 of Social Forestry and Environmental Partnership, Ministry of Environmental and Forestry (MoEF)** on page 37 points 2 and 3 namely increasing the capacity of social forestry groups to carry out social forestry business and improving the quality of access that has been provided to the community marked by the more excellent value of benefits to the community.^[17]
118. Increased added value, employment, and investment in the real sector and industrialization are carried out in the **Republic of Indonesia's 2020-2024 Mid-Term Development Plan**, one of which is by increasing commodity processing-based industrialization in the forestry and fishery sectors. The project will help to carry out the plan by strengthening social forestry business groups in Soppeng District and fisheries business groups in Wajo District.
119. The project's implementation to strengthen social forestry groups is based on **Minister of Environment and Forestry Regulation No. 9 of 2021 concerning Social Forestry**. This regulation also including the guidelines for formation and development of social forestry groups and development of social forestry business groups (KUPS). The Regulation of the Director General of Watershed and Protected Forests Control No. P.7/PDASHL/SET/KUM.1/8/2017 will be used to assist Forest Farmers Groups in managing agroforestry to maximize the area's potential. The Minister of Environment and Forestry Regulation No. 89 of 2018 on Forest Farmer Groups will be used as guidelines to form a Forest Farmer Group, which will be transformed into a Social Forestry Group.

Sub-National Development Strategies

120. Social forestry management to maintain and conserve forest areas is in line with Regional Regulation Number 3 of 2022 concerning the South Sulawesi Province Spatial Plan 2022-2041, which regulates areas that protect subordinate areas such as Soppeng to protect river boundaries and areas around lakes. Based on the Amendment to the Medium Term Development Plan of South Sulawesi Province for 2018 - 2023, which states that it will optimize the management of Tempe Lake to improve the quality of the environment as well as the ability to adapt and mitigate climate change, this is in line with the

¹⁶ Nationally Determined Contributions Indonesia, (2017).

¹⁷ Strategic Plan of the Directorate General of Social Forestry and Environmental Partnership 2020-2024, Ministry of Environment and Forestry. (2020).p.37

project's big goals, namely towards climate resilience of the Tempe Lake ecosystem community.

121. The Tempe Lake Management Plan has been incorporated into the Regional Medium-Term Management Plan for 2018-2023 by the South Sulawesi Provincial Government. This project will begin to reduce the volume of water and sediment entering Lake Tempe by encouraging agroforestry planting patterns.
122. Strengthening agroforestry upstream (Walanae Watershed, Batu-Batu sub-watershed) through land cover improvement and planting along river borders to reduce soil erosion that can accumulate sediment in Tempe Lake is in line with the **Super Priority Program for Saving Ecosystems in the Bila and Walanae Watersheds**.^[18]
123. Strengthening the economy of the community around Tempe Lake, the formation of village-based fishing business groups in line with the priority program of the Tempe Lake Rescue Movement by the Ministry of the Environment in 2014, namely increasing the role and participation of the community through the development of small business management groups for rural catch fishers of Tempe Lake.^[19]
124. Utilization of Tempe Lake as a fishery cultivation area will refer to the Long Term Development Plan of Wajo District for 2005-2025, which regulates the division of areas for aquaculture use, covering an area of 9,100 ha. It aligns with the program's objective to strengthen the community's economy through fishery resources.
125. To initiate the fisheries business group, it will cooperate with the relevant agencies as stated in the Wajo Regent's Regulation No. 142 of 2019 concerning the Strategic Plan of the 2019-2024 Regional Apparatus within the Wajo District Government, which regulates the provision of support for the implementation of fishery areas.
126. Business development in the fisheries sector will be encouraged through the provision of business development facilities as the problems in the fisheries business sector are listed in the Regional Medium-Term Development Plan of Wajo District for 2019-2024, which targets the development of the fisheries business sector by providing business support facilities.
127. The development of the business sector in the forestry sector through Social Forestry Business Group (KUPS) follows Soppeng Regent Regulation Number 29 of the 2020 Soppeng District Work Plan, namely optimizing regional income through natural resources management in the forestry sector by considering the principle of sustainability. As well as improving the quality of the environment through the maintenance of forests and land cover around rivers.
128. The role of forest management in preserving, protecting, restoring, and increasing the sustainable use of ecosystems is stated in the Decree of the Head of the Regional Research and Development Planning Agency of Sidenreng Rappang District in 2021 regarding changes to regional strategic plans.
129. To take care of household business licenses, refer to Law Number 20 of 2008 concerning Micro, Small, and Medium Enterprises and Wajo District Regulation No. 12 of 2017, which regulates the procedures and conditions for business formation and licensing. The formation of cage cultivation groups and fish processing household businesses around Tempe Lake will adhere to the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia Regulation Number PER.12/MEN/2007 regarding fish cultivation business licensing, as well as the Wajo District Regional Regulation Number 1 of 2012 regarding Retribution Fishery Business License.
130. Fish cultivation is governed by Wajo District Regional Regulation Number 14 of 2016, which governs the use of Tempe Lake for aquaculture and also governs lake zoning. Fish farming in Tempe Lake is also included in the Soppeng District Department of Livestock, Animal Health, and Fisheries' strategic plan for 2019-2024.

E. Compliance with National Technical Standard

Describe how the project / programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.

131. Encouraging the assisted villages to adopt the climate village program will refer to the Minister of Environment and Forestry Regulation No. 84 of 2016, and its guidelines will depart from the regulation of the Director General of Climate Change Control No. P4/PPI/API/PPI.0/3/2021.
132. Agroforestry will be implemented to maintain land cover and control soil erosion in accordance with the Regulation of the Director General of Watershed Control and Protected Forests Number P.7/PDASHL/SET/KUM.1.8/2017 on procedures for determining agroforestry in forest areas beginning

¹⁸ Lake Rescue Movement (GERMADAN) Tempe Lake. (2014). p.37

¹⁹ Lake Rescue Movement (GERMADAN) Tempe Lake. (2014). p.55

with classification, concept, pattern, planning, implementation, and control.

133. Fish farming groups will be formed in accordance with Government Regulation of the Republic of Indonesia Number 28 of 2017 concerning Fish Cultivation, which governs concepts, procedures, and aspects of planning, utilization, development, and protection. The Regulation of the Director General of Aquaculture No. 38/PER-DPJB/2021 regarding technical guidelines for marine aquaculture floating net cages is derived from this rule. covers cage management concepts and procedures
134. Through the Regulation of the Minister of Marine Affairs and Fisheries of the Republic of Indonesia Number PER. 12/MEN/2007 concerning fish farming business licensing, which contains licensing procedures, requirements, and fish farming business mechanisms, a fish cultivation group and a fish processing business group will be formed with reference to this rule.
135. In terms of procurement of goods and services, this project will follow the Regulation of the President of the Republic of Indonesia Number 18 of 2018 concerning Government Procurement of Goods and Services, apart from that it will also follow the Regulation of the Government Goods/Services Procurement Policy Agency Number 12 of 2021 concerning Procurement of Goods/Services through Provider. To strengthen this, this project will also follow the Financial Operational Standards from the Partnership regarding the procurement of goods, if the goods have a value of over IDR 5,000,000, then it will go through a bidding process.
136. In the case of a procurement process held by a non-governmental organization, authorization will be given to the owner of the budget to carry out the procurement process and in accordance with the standard operating procedures for the procurement of goods/services, if the budget ceiling value is above IDR 5,000,000. However, if the budget ceiling value is above IDR 200,000,000, then the process of supplying goods/services will be assisted by the government through the POKJA for the procurement of goods/services by the Goods/Services Procurement Policy Agency (LKPP) and will be carried out through the application of the Electronic Procurement System (SPSE).
137. In terms of finance, it will follow the tax rules that apply in Indonesia which are adjusted to the Government Regulation of the Republic of Indonesia Number 50 of 2022 concerning Procedures for the Implementation of Tax Rights and Obligations.

F. Duplication of Project

Describe if there is duplication of project / programme with other funding sources, if any

138. The project "Sustainable Landscape Governance; Towards Community Climate Resilience in Tempe Lake Ecosystem" will intervene in the target areas, particularly in the Soppeng, Sidenreng Rappang, and Wajo Regencies. The agroforestry system and the economic development of the forestry sector will intervene in land management in the forest landscape, particularly in the Soppeng and Sidenreng Rappang districts. Meanwhile, it will intervene in the economic development of the fishery sector in Wajo Regency.
139. The Lake Rescue Movement Planning Movement (GERMADAN) is one of the planned programs/projects for the Tempe Lake ecosystem. This plan, which was released in 2014, includes the following components: (1) determining the spatial layout of the lake waters; (2) saving lake water ecosystems; and (3) saving the lake border land ecosystem. The planning, which is expected to be completed in five years, does not appear to have had a significant impact on Lake Tempe, as flooding from the lake's overflow continues and has increased in the last two years.
140. In comparison, the two projects are using different approaches. The proposed project takes a vegetation approach through an agroforestry system, whereas GERMADAN takes a civil engineering approach through DAM construction. These findings are derived from a comparison of the proposed project planning with GERMADAN. Although the GERMADAN intervention area is the same as the proposed project intervention area, namely the districts of Soppeng, Sidenreng, Rappang, and Wajo, there are clear village differences.
141. The Fish Quarantine Center, Quality Control and Fishery Product Safety (BKIMP) Makassar since 2020 has been conducting regular monitoring of invasive fish in Lake Tempe. This program is carried out because the local fish ecosystem is threatened by the presence of invasive fish, namely the invasive fish.
142. In 2016, the Ministry of Public Works and Housing (PUPR) began revitalizing 13,000 hectares of Tempe Lake, with the aim of overcoming siltation due to the massive growth of water hyacinth, sedimentation and land occupation. This project was carried out jointly with KSO PT Nindya and FAF.
143. The activity of releasing local fish by the Ministry of Maritime Affairs and Fisheries in 2018 by releasing local seeds, namely tawes, jelawet, and baung fish that live in Lake Tempe as many as 265,000 which

aims to restore the Tempe Lake ecosystem which is increasingly decreasing its carrying capacity.

144. Presidential Regulation Number 60 of 2021 concerning saving priority lakes, there are 15 lakes that are made a priority and one of them includes Tempeh lake. Priority programs in order to save Tempe Lake as stated in the Tempe Lake Management Plan which has been prepared with stakeholders and approved by the Governor of South Sulawesi in 2018. The eight priority programs for saving the Tempe Lake ecosystem are: 1) Program for Determining Spatial Planning for Lake Areas 2) Program for Saving Lake Tempe Lake Ecosystem 3) Lake Rim Conservation Program 4) Bila-Walanae Watershed Rescue Program and Lake Tempe Watershed 5) Lake Water Resources Utilization Program 6) Lake Ecosystem Monitoring, Evaluation and Information System Development Program 7) Capacity Building, Institutional and Coordination Program 8) Community Role and Participation Improvement Priority Program. Based on this rule, the lake rescue program will allow many government programs to be carried out in Tempe Lake. Program overlap will not have any effect because the programs implemented complement each other in the rescue efforts carried out by these various parties.
145. Community Research and Development Institute (IPPM) carried out the Procurement of Biogas Generator and Liquid Fertilizer Fertilizer projects around Tempe Lake, Wajo Regency, South Sulawesi Province through grant funding from the Embassy of Japan in 2018, and at the same location carried out an innovative water hyacinth development project through grant funding from the Global Environment Facility – Small Grant Project (GEF SGP) Indonesia in 2014. This project encourages the development of collaboration between parties in the sustainable management of forest lake ecological areas, productive economic development, and building public awareness and concern for preservation of Tempe Lake.

G. Learning and Knowledge Management

If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

146. Efforts to strengthen the learning process are carried out to build and increase community capacity to take appropriate and relevant climate change adaptation actions in the regional context. The project will also initiate climate change adaptation actions based on youth movements directed at initiating climate awareness campaign actions in the regions. These principles, methodologies, and mechanisms for managing knowledge and learning are contained in **Component 3 – Outcome 3.2. of the project.** The following are strategies to ensure effective management of this knowledge:
147. **Lessons and Knowledge Products:** Knowledge products that will be made in this project are short video documentary, best practice book, poster, banner, infographic, operating website, and social media platform which will provide the best learning from the project achievements.
148. **Dissemination Mechanisms:** The dissemination mechanism used differs depending on the knowledge product created. A short documentary video will be created from the beginning to the end of the project (the aim is to see what changes have occurred). We provide a team that creates video documentaries, and their job is simply to capture the changes that occur. Best Practice Book, a book based on the project's success stories, including how these changes can occur and what approach is used in the process, which is then published and disseminated to the general public as a lesson for others. Local governments, villages, and communities will receive posters, banners, and infographics. This is a lesson and resource for many aspects of the importance of climate change adaptation. The website and social media platforms will be used to disseminate information about program developments and adaptation actions. To ensure the mainstreaming of knowledge management and learning in the program management cycle, the project will establish a knowledge management team with competent personnel with expertise in producing knowledge based on information and stories obtained from the field. The knowledge management team will also be directed to manage data and information, making it easier for project management to make strategic decisions to achieve the project's main objectives. The involvement of other parties, such as practitioners and academics, will also be encouraged to gain diverse perspectives in seeing the learning needs required for each element of the project. Dissemination process taken out to ensure that all program learning is acknowledged by various parties and platforms. Target Audiences: The dissemination of information is supposed to raise knowledge and perspectives among various levels of society that are more oriented toward improving the environment and adapting to climate change. The target of information dissemination is the beneficiaries in village interventions in the Lake Tempe ecosystem, including the governments. Approximately 20.000 persons from 11 villages interventions will get the information by the dissemination process. Apart from that, internet-based dissemination is expected to reach a wider audience, so that the information and knowledge in this project can be used as lessons for several regions in the future.
149. **Youth-based Climate Adaptation Campaign:** Youth will disseminate knowledge on climate change adaptation through photo essay competitions and content creation on social media. This competition is expected to ignite the youth creativity who are attached to digital technology trends and use. Through

this activity, the dissemination of information among youth can be massive and expansive. Indirectly, this activity makes youth more aware of the impacts and actions of climate change adaptation.

H. Consultative Process

Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

150. The initial consultation process included face-to-face meetings and discussions with various parties at the provincial, district, and village government levels to communities affected by the environmental and economic impacts of climate change. This consultation process is carried out by gathering data and information on the state of the Tempe Lake ecosystem as it is affected by climate change from various perspectives. The provincial and regional governments as compilers and implementers of the development program, the village government and community as recipients of the development program, and the parties affected by the decline in environmental quality and decreased productivity caused by climate change. As a result, this initial consultation process was also carried out to determine the level of vulnerability of various marginalized groups such as smallholders, youth, women, and other vulnerable groups who are directly and indirectly affected by the decline in Tempe Lake's environmental quality and the decline in agricultural and fishery productivity as a caused by climate change. The data collection process for women, marginalized and vulnerable groups was carried out through direct interviews with several groups of women met in prospective intervention villages. The information gathered will be used as the initial data in carrying out the project's steps.

Table 7. Consultative Results

Vulnerable Groups Identified	Key Issue	Engagement	Level of Vulnerability
Poor's (smallholders and small fisheries)	The lack of ownership and resources makes it harder for the poor to survive the extreme weather due to climate change. It is become harder for small farmers to farm or grow. Flooding put on by the weather anomaly leads to crop failure and fewer harvests, which in turn results in lower yields and, eventually, lower revenue. The same is true for fishers, where climate change will impact the lake's physical, chemical, and biological features, reducing the catch. Due to their limited alternatives for escaping their situation, this leaves the impoverished in a particularly vulnerable position.	Smallholders and small fishermies are the project's primary audiences. As a result, they will be involved in all project-related activities.	Very High
Women	<ul style="list-style-type: none"> In the lake's water ecosystem, the majority of women's economic activities are buying and selling catches, but because of issues with Lake Tempe's aquatic ecosystem, trading activities are hampered, which results in the loss of activities that can contribute to household income, particularly the income of individual women. The subordination of women which causes women to be considered additional workers will have an impact on the earnings received by women, especially women workers. The earnings received by agricultural employees or female fishermen workers will be further reduced as a result of declining yields and fish catches. Their needs won't be able to be met by the pay received. Farmers and fishermen who are identified with men, make women farmers and fisherwomen not be accommodated in capacity building programs. Such as meetings or trainings that target climate response, women are not involved and in the end their knowledge does not develop because of the assumption that farmers or fishermen are men. 	There will be no barriers to women participating in any of the project's activities. Women will even play the lead roles in some of the primary activities (e.g. business development activities, capacity building, etc.).	Very High
Youth	Youth are never involved in formal village meetings. Youth never participate in official village gatherings.	One of the primary issues with this project	High

Vulnerable Groups Identified	Key Issue	Engagement	Level of Vulnerability
	The assumption that youths cannot yet access sources of income prevents them from gaining knowledge and experience. They are unable to air grievances or offer opinions. This youth group is excluded from making decisions about village rules.	will be youth involvement, especially when it comes to sharing information and knowledge and developing initiatives at the local level.	
Elderly	Have limitations in accessing information and knowledge because they are no longer capable of being involved in decision-making forums or capacity building	The FPIC principle will be used in this project to ensure that all beneficiaries, including the elderly, have the opportunity to get involved.	High
Other marginalized groups	There are other vulnerable groups who are marginalized groups in the village and are often not involved in various matters due to the notion that they have physical and ability limitations. They ultimately do not have a meaningful position in determining village policies.	The FPIC principle will be used in this project to ensure that all beneficiaries, including other marginalized group identified, have the opportunity to get involved.	High

151. The lack of policies that encourage measures to adapt to climate change at the village or district level supports this vulnerability. Despite the fact that there is a district-level policy regarding the management of tempeh lake, none of them particularly mentions adaption measures. This situation is compatible with the government's ongoing incapacity to present policies for adapting to climate change. The government's institutional ignorance of adaptation difficulties will extend to the neighborhood level, leaving climate change challenges unsolved. Similarly, the government's shortcomings in identifying existing vulnerable groups result in these people being frequently left out of initiatives.
152. The aim of this project is that people can increase their income through climate change adaptation actions and women and other vulnerable groups are able to have access, participation, and control over the resources and benefits of the project. So that the project will create programs that are also accessible for women and other groups. vulnerable in order to participate and benefit and have control over the resources of the agenda created at the project intervention site. The inclusion of women and other vulnerable groups in the project can be seen by evaluating how well the project targets affected communities, which always includes women and other vulnerable groups, and by observing how actively women and vulnerable communities participate in activities that build their skills and capacity in areas like erosion control, forest management, strategy improvement for livelihoods, food security, and public awareness of climate change. The interests of each party (who will benefit from this project) will be optimally accommodated through this consultation. This consultation process with various stakeholders will continue throughout the project to ensure that each stakeholder can play a role and contribute to the project's development and sustainability.



Figure 9. Consultation with the Government



Figure 10. Consultation with communities

I. Justification for Funding Requested

Provide justification for funding requested, focusing on the full cost of adaptation reasoning

153. This project will make forest areas and aquatic ecosystems and policy reforms a key component in efforts to improve climate change adaptation in the Tempe Lake ecosystem. The proposed project will be implemented to increase resilience and reduce community vulnerability by optimizing land management, household economic resilience, and increasing capacity against climate-related risks and hazards. It will be achieved through capacity building, which is then used in land management practices and sustainable development of productive enterprises.
154. Without Adaptation Fund's support, the Tempe Lake ecosystem community will continue to suffer from weather anomalies that cause floods and then inundate houses, public facilities, and productive land. In addition, environmental damage will get worse if the incident continues.

Table 8. Justification for Funding Requested

Component	Baseline (Without AF)	Additional (With AF)
Adaptation through improving forest and other land use areas of the Tempe Lake ecosystem	<ul style="list-style-type: none"> • Unsustainable land management practices in forest areas that increase climate vulnerability and damaged the lake ecosystem • Lack of knowledge and skills in sustainable land management and forest areas utilization • Low value of commodities managed by the community in the forest areas • No market certainty to ensure the sustainability of community livelihoods in forest areas 	<ul style="list-style-type: none"> • Sustainable land management will be carried out through land management and utilization with the agroforestry system and the Social Forestry Business Group (KUPS). • Increasing the knowledge and skills capacity of the community in managing and using land in forest areas in a sustainable manner. • Increasing the value of commodities managed by the community in forest ecosystems through certification and improvement of product quality standards • Availability of a marketing network to ensure the sustainability of people's livelihoods in forest areas
Adaptation through reinforcing community livelihood resilience in water areas of the Tempe Lake ecosystem	<ul style="list-style-type: none"> • Lack of knowledge and skills in the management of fisheries resources, particularly among women and vulnerable groups • Fishery resource population decline due to flooding • Low value of fishery resource commodities managed by the community in the Lake Tempe water ecosystem • No market certainty to ensure the sustainability of community livelihoods in water ecosystems 	<ul style="list-style-type: none"> • Increasing the capacity of knowledge and skills in managing fishery resources, especially for women's groups and vulnerable communities • Increasing the population of Fisheries resources because there are no more floods • Increasing the value of fishery resource commodities managed by the community in the water ecosystem of Tempe Lake • There is market certainty to guarantee the sustainability of livelihoods in aquatic ecosystems
Strengthening collaborative action through cross-sector policies, and knowledge management	<ul style="list-style-type: none"> • Lack of collaborative action in addressing climate Change issues in the Tempe Lake ecosystem • No integrated policy support for addressing climate change adaptation issues in the Tempe Lake Ecosystem • Lack of Local Adaptation Actions in the Tempe Lake Ecosystem That Support by the National Authorities • Lack of knowledge and learning about climate change issues • Lack of youth participation as influencers to disseminate climate knowledge and awareness 	<ul style="list-style-type: none"> • Increased collaborative action in addressing with climate change issues in the Tempe Lake ecosystem • There is integrated policy support aimed at addressing climate change adaptation issues in Tempe Lake • Increasing adaptation actions at the local level in the Tempe lake ecosystem which has received support up to the national leve • Increased learning and knowledge related to climate change issue • Increased youth participation to campaign and disseminate climate knowledge and awareness

J. Sustainability

Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project / programme

155. This project will guarantee sustainability after the project ends through the direct involvement of relevant stakeholders in each project activity. In addition to direct involvement, the project will also document each stage of project activities and disseminate them so that they can be replicated by people or institutions that are not directly involved in project activities. Several categories of sustainability are intended, including financial, institutional, social, environmental, and also sustainability for the infrastructure as described in table below:

Table 9. Project Sustainability Design

Category	Sustainability Design
Financial	<ul style="list-style-type: none"> - Internalization of climate change adaptation strategies through the Climate Change Adaptation Tempe Lake Rescue Working Group (POKJA) to follow up on activities that have been built so that the target site receives incentives or funding and follow-up that comes from the government budget. - Project activities will continue to be consulted with the village government, so that the village government is aware of every stage of activity so that after the project ends, the village government is able will later take part in continuing through village budgeting in village funds or even replicate it. - Financial sustainability for the community will be guaranteed through community business group cooperation with the buyer, as evidenced by a business cooperation agreement letter, so that the absorption of products produced by business groups can be maximally absorbed by the market.
Institutional	<ul style="list-style-type: none"> - <u>Forest Farmer Groups (KTH)</u>: To ensure the sustainability of forest farmer groups, productive activities will be carried out for them, such as capacity building (through a series of training including administrative record keeping training and financial management training), planting of economically valuable crops, as well as group collaboration with social forestry business groups. - <u>Social Forestry Business Groups (KUPS)</u>: To ensure the sustainability of the social forestry business group, the project will increase the capacity of managers through a series of training including product value improvement training, administrative record keeping training, and financial management training. conducting supply and value chain studies, ensuring products are sold by building partnerships with buyers, and to ensure that raw material supplies remain available, KTH members will be actively involved in determining the Cost of Production (HPP). - <u>Aquaculture Groups</u>: To ensure the group's sustainability, productive activities will be carried out for them, such as capacity building (pr series of training including group institutional training and training in fish farming in ponds) and provision of fish seeds as a core part of cultivation, so this process will continue. In addition, group collaboration with fisheries business groups will determine where the supply will go. The groups will be formed in accordance with Article 24 of the Government Regulation of the Republic of Indonesia No. 50 of 2015 concerning Empowerment of Small Fishermen and Small Fish Cultivators. To ensure the group's sustainability, they will collaborate with fish business groups and other markets, allowing this group to become a fish supplier. - <u>Fishery Business Groups</u>: To ensure the sustainability of the fishery business, activities will be carried out to ensure the smooth marketing of products through cooperation with potential markets, as well as cooperation in supplying raw materials from aquaculture groups and several other suppliers. - <u>Tempe Lake Rescue Working Group (POKJA)</u>: To ensure the sustainability of the working group on Tempe Lake Rescie in order to support climate change adaptation, activities that will build cooperation and mutual commitment will be carried out so that an action plan is drawn up, which will form the basis for future actions. This group will operate using funds from the National Government Budget and Regional Government Budget and other legitimate sources. So that when the project has been completed, this group can still run.
Social	<ul style="list-style-type: none"> - Each group that is formed or developed will establish rules through deliberation, so that there are boundaries as to what should be done in groups. - Group planning will be carried out in terms of group management and business, so that the planning becomes a common reference and common goal.
Environmental	<ul style="list-style-type: none"> - <u>Forests</u>: To ensure sustainability in forest areas, activities that have a positive impact on the environment will be carried out, such as capacity building, especially on how to prevent erosion, as well as planting erosion-reducing plants and providing cultivation facilities and infrastructure. Arachis pintoi is the erosion prevention plant that will be

Category	Sustainability Design
	<p>planted. This plant has a rather extensive root system that can provide resistance to the soil from rain intensity, allowing the plant to prevent erosion. Furthermore, this plant may thrive in the plantation area, is not invasive to other plants (relatively slow growth), and is effective in preventing weed growth, even more effective than pesticides, ensuring the sustainability of the planting area. However, plant selection will take place after a subsequent assessment of the suitability of the site at the planting spot. So, that good practices for the environment are developed.</p> <ul style="list-style-type: none"> - <u>Water Body (Lake)</u>: To ensure sustainability in the Tempe Lake area, will be carried out through the development of SMART Floating Net Cages with cage construction that can reduce input pollution loads because they are able to accommodate and precipitate metabolic waste and fish feed. The types of fish to be cultivated are native fish species, which will certainly not disturb ecosystem stability and biodiversity. In addition, environmental sustainability will also be carried out through policies by encouraging the implementation of the zoning division of Tempe Lake. Through the implementation of this zoning, the areas of Tempe Lake will be divided into several zones ranging from utilization to protection. Thus, the development of the fishery business carried out in this project is only focused on zones that are in accordance with their designation.
Infrastructure and Facilities	<ul style="list-style-type: none"> - Each provision of facilities and infrastructure is directed at increasing the beneficiary's economy, to ensure sustainability, encouraging collaboration between related parties such as village governments, district governments and the private sector conducted. - This group's capacity will be increased so that it may be in charge of ensuring the equipment's long-term viability. The intervention takes the form of training in tool use, assisting in the creation of group rules (work plans) for the maintenance of infrastructure and facilities, and providing modules and manual books for the use and maintenance of equipment in order to increase group capacity. In addition, the group's business strategy will incorporate information with certainty regarding the expense of sustaining facilities and infrastructure.

K. Environmental and Social Impact and Risk

Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / programme.

156. This project does not provide significant environmental and social impacts and risks. Based on the OPG Annex 3-Environmental and Social Policy Adaptation Fund, it can be categorized in **category C**. The initial risk potential discovered was still in the low category, which did not significantly affect environmental and social changes at the project location. Despite the low rating, it is still possible to avoid potential harm to the others.

Table 10. ESP Assesment

Checklist of environmental and social principles	No further compliance assessment required	Potential impacts and risks – further compliance assessment and management are required
Compliance with the Law	The implementation of the project is in compliance with applicable laws from international, national and regional levels. Whether it's laws, forestry regulations, fisheries regulations and health regulations. Every permit will follow the regulations written in Part II - D & E.	A further compliance assesment of the environment and society will be done when a full proposal is being prepared, with more specifics developing up to the district and village levels.
Access and Equity	The project will ensure fair access for all elements, especially women, the poor, youth, the elderly and other marginalized groups. This project will also strengthen their access to natural resources	In order to better collect information about community access, such as the number of people, who they are, what kinds of limitations they have, etc., further assessment will be required at the full proposal stage.
Marginalized and Vulnerable Groups	This project prioritizes marginal and vulnerable groups such as women, the poor, youth, the elderly and other marginalized groups.	Other groups could still be considered marginal or vulnerable. Further assessment is necessary and will be done at the complete proposal stage due to the lack of data and information at the concept note stage.
Human Rights	This project will guarantee respect for each of the rights of direct beneficiaries, such as men, women, youth and others, depending on their involvement in project implementation	This project will regulate guidelines related to Human Rights, human rights internalization for each project implementing member will be carried out during capacity building for project implementers.

Checklist of environmental and social principles	No further compliance assessment required	Potential impacts and risks – further compliance assessment and management are required
Gender Equality and Women's Empowerment	This project is designed to maintain gender equality, ensuring that both men and women will have an equal chance to participate in it. The project will actively involve equal participation in project/program activities and stakeholder consultation. The project also ensures that both men and women effectively access positions in the project/program, and women are encouraged to undertake and take positions, which in essence, project design and implementation will ensure equal access for men and women. Gender involvement is assessed through the proportion of work in the household so that it can support their livelihood. The planned intervention will positively impact women's empowerment and ensure gender equality due to specific livelihoods. The principle of gender equality and women's empowerment in project activities is designed using an integrated gender plan as a safeguard that sees the proportion of involvement between men and women in all project activities as much as possible.	Further assessment will be carried out to create guidelines related to the gender approach in the project, so that these guidelines become the basis for project implementation. Preparation of guidelines will be carried out in the inception phase.
Core Labour Rights	The proposed project will meet the required work standards defined by international and national standards. ILO labor standards are stated in the Declaration of Principles and Rights and Human Rights in 1998. Meanwhile, National standards follow the fulfillment of rights for workers such as health insurance, work safety, and others. In doing so, the project will incorporate the ILO's core labor standards in the design and implementation of the project or program and create awareness among all involved about how these standards are applied. On domestic principles, this project will also follow Law Number 11 of 2020 concerning Job Creation, which covers how employment is regulated. All programs are not related to violations of core labor rights	The potential risk is low. The project will establish a grievance mechanism to ensure the rights of all workers involved in the project.
Indigenous Peoples	Further compliance assessment is not required because the project site doesn't have indigenous peoples within, however this project does not involve nor have interactions with indigenous peoples	There is no potential risk that arises in this principle
Involuntary Resettlement	Further compliance assessment is not required because this project does not involve resettlement, loss of assets, or transfer of economic facilities and infrastructure	This project will build infrastructure in the form of seedling houses, not on community-owned land, but on village government land or other parties that allow collaboration. So that identification and initial consultation at the stage of preparing a full proposal will be carried out to ensure the availability of the land
Protection of Natural Habitats	Project activities will intervene in ecological habits, particularly in fish breeding ecosystems (lake's water).	This project will construct fish cages as breeding places for fish in order to ensure the long-term viability of local fish species. This is critical given that climate change is causing a significant drop in fish populations. Further assesment needed.
Conservation of Biological Diversity	Because this project doesn't affect a conservation area, the biodiversity in the designated area won't be harmed.	To validate the presence of endemic wildlife and plants at the target site, further assesment may be needed. The assessment will take place while a full proposal is being prepared.
Climate Change	This project will strengthen community adaptation to climate change so that they are able to cope with its effects.	The proposed project does not magnify the impact or risks resulting from climate change; it is precisely through this program that the community can adapt to the current climate change impacts

Checklist of environmental and social principles	No further compliance assessment required	Potential impacts and risks – further compliance assessment and management are required
Pollution Prevention and Resource Efficiency	This project ensures efficient use of resources, especially water use. The project does not generate any pollutants or waste production.	Although there may not be significant risks, the environmental and social impact assessment will define how these resources are used.
Public Health	The project did not focus on activities that can bring negative impacts on public health, access to medical care, and health facilities. The project will ensure to avoid use of any dangerous and prohibited chemicals.	Within the framework of the environmental and social impact assessment, the project will avoid the use of chemicals or other substances that may harm people's health. Safeguards for the use of materials in the project will be carried out during the project period.
Physical and Cultural Heritage	The project is also not subject to attempts to alter, damage, or remove physical and cultural resources, cultural sites, and sites of unique nature, such as in the community. This national or international level is World Cultural and Natural Heritage.	An environmental and social impact assessment will be conducted by identifying the physical and cultural heritage of the project site. This assessment will be carried out at the stage of preparing a full proposal
Lands and Soil Conservation	Planting activities are carried out during project implementation by planting in areas with a high sedimentation impact. Plantings will include vetiver, shrubs, Arachis pintoi, and MPTs/ The plant fails to grow when the intended species is incompatible. Plant species selection mistakes can cause soil damage Compliance assessment during the implementation may be required.	Choosing the inappropriate plant species might harm the soil. Therefore, further assesment are required to make sure that the plants are safe for the soil and appropriate for the local environment. Before beginning seeding and planting operations, this assessment will be carried out. Activities are carried out by determining the appropriateness of the land at the project area.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Alignment with Adaptation Fund Framework

Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund

Project Objective(s) ²⁰	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
1. Adaptation through improving forest and other land use areas of the Tempe Lake ecosystem	Planting 80,000 seeds	Outcome 5: Increased ecosystem resilience in response to climate change and variability -induce stress	5. Ecosystem services and natural assets maintained or improved under climate change and variability-induced stress	\$327,447
	Issued 2 village regulations regarding land governance	Outcome 7. Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy	
	Increased capacity and skill of 320 farmers	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood asset 6.2. Percentage of targeted population with sustained climate-resilient livelihoods	
2. Adaptation through reinforcing community livelihood resilience in water areas of the Tempe Lake ecosystem	Certified 3 products	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood asset 6.2. Percentage of targeted population with sustained climate-resilient livelihoods	\$158,992
	Established 1 market network			
	Increased capacity and skill of 45 skills			
3. Strengthening collaborative action through cross-sector policies, and knowledge management	Established 3 groups	Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into the national development strategy	\$338,029
	Issued 1 region (governor/regency level) regulation			
	Established 100 climate village programs			
	1 short video documentary, 1 best practice book, 3 posters, banners, infographics, 1 operating website, 1 social media platform to increase public knowledge capacity	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at the local level	3.1. Percentage of the targeted population aware of predicted adverse impacts of climate change and appropriate responses 3.2. Percentage of targeted population applying appropriate adaptation responses	
	100 youths in climate change adaptation campaigns involved			

²⁰ The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
1.1. Strengthening forest and land management practices in order to reducing sedimentation rate	8 villages practice forest and land management in order to reduce sedimentation rates	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	\$217,340
	Issued 2 village regulations regarding land governance	Output 7: Improved integration of climate-resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks	
1.2. Increasing the climate adaptive capacity of the community through improving sustainable livelihood strategies in the landscape of forest and other land use	320 farmers increased their capacity in improving sustainable livelihood strategies	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1. No. and type of adaptation assets (physical as well as knowledge) created in support of individual or community-livelihood strategies 6.1.2. Type of income sources for households generated under climate change scenario	\$110,107
2.1. The development of alternative livelihoods based on women and vulnerability groups in water areas of the Tempe Lake ecosystem	3 women and vulnerable groups developing alternative livelihood	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies 6.2.1. Type of income sources for households generated under climate change scenario	\$158,992
3.1 Strengthening the capacity of stakeholders and cross-sectoral policies in supporting climate change adaptation actions in the Tempe Lake ecosystem	30 stakeholders increased capacity to support climate change adaptation actions and making policies	Output 7: Improved integration of climate-resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks (by sector) 7.2. No. of targeted development strategies with incorporated climate change priorities enforced	\$125,381
3.2. Increasing the knowledge capacity and awareness of community climate change adaptation through knowledge management and youth-based initiatives	155 people increasing capacity and awareness regarding climate change and environmental issues (55 farmers/fishermen & 100 youth) - 30% women	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1. No. of news outlets in the local press and media that have covered the topic	\$212,648

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

A. Record of endorsement on behalf of the government²¹

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:

Ir. Laksmi Dhewanthi, M.A. IPU Director General of Climate Change Ministry of Environment and Forestry, Indonesia	Date: August, 5, 2022
Dr. Amran Mahmud, S.Sos., M.Si Regent of Wajo District	Date: June, 20, 2022
H. Andi Kaswadi Razak, SE Regent of Soppeng District	Date: July, 14, 2022
Ir. Andi Parenrengi, M.P Head of Forestry Service of South Sulawesi	Date: July, 07, 2022

B. Implementing Entity certification

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (President Decree No. 16 Year 2015; President Decree No. 60 Year 2021; MoEF Regulations No. P.13/Menlhk/Setjen/OTL.0/1/2016; MoEF Regulations No. P.33/Menlhk/Setjen/Kum.1/3/2016; Indonesia Intended Nationally Determined Contribution (INDC); COP 21 Paris Agreement signed by Government of Indonesia; Book and Map of Information System of Vulnerability Index Data (SIDIK); Climate Change Adaptation National Action Plan) and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
Laode M. Syarif <i>Executive Director of Partnership for Governance Reform in Indonesia (KEMITRAAN)</i> Implementing Entity Coordinator	
Date: September, 5, 2022	Tel. and email:
Project Contact Person:	
Tel. and Email:	

²¹ Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.



**MINISTRY OF ENVIRONMENT AND FORESTRY
DIRECTORATE GENERAL OF CLIMATE CHANGE**

Mangala Wanabakti Building Block VII 12th Floor, Jalan Gatot Subroto – Senayan, Jakarta 10270
Phone +62 21 5730144 Fax. : +62 21 5720194

Website : <http://ditjenppi.menlhk.go.id>

email : tusetditppi@gmail.com;

Our Ref. : *S. 282 / PPI / ADI / PPI.0/8/2022*
Attachments :
Subject : **Letter of endorsement**

Jakarta, 5 August 2022

To:
The Adaptation Fund Board
c/o Global Environment Facility
Mail stop: N 7-700
1818 H Street NW
Washington DC 20433, USA

Dear Board Member,

Directorate General of Climate Change Ministry of Environment and Forestry as the National Designated Authority of Adaptation Fund in Indonesia through *Kemitraan* – Partnership for Governance Reform as the National Implementing Entity, have received and appraised 37 incoming concept notes.

After a thorough assessment process of the incoming concept notes, we come to the decision that the following 10 (ten) concept notes from 10 (ten) different organizations have met and are in accordance with the national priorities in the implementation of adaptation programs and activities to increase adaptive capacity and to reduce the impact and risks of climate change in vulnerable regions in Indonesia:

1. Yapeka; *Ecosystem-based Adaptation to Support Climate Resilience in Coastal and Small Islands of Rote Ndao and Sabu Raijua Districts in the Savu Sea*
2. TLKM; *Sustainable Landscape Governance; Towards Climate Resilience of Community in Tempe Lake Ecosystem*
3. KAPASITAS; *Adaptation to climate change through integrated forest management and sericulture business to achieve ecosystem resilience to food security for the Lake Tempe Catchment Area Community*
4. Garis Biru; *Strengthening the Adaptive Capacity of Coastal Village Communities in Supporting Food Security as a Response to Climate Change Through Stakeholder Elaboration Actions in West Sulawesi Province*
5. Sajogyo Institute; *Collaboration for the Conservation of Cimandiri Watershed Landscapes through the Potential of Silvopasture and Community Agroforestry*
6. KOAKSI; *Building Climate Resilient District in Indonesia: Case of Sigi District*
7. KEMITRAAN; *Village Based Coastal Adaptation and Resilience in Lombok Province of West Nusa Tenggara*
8. HUMA; *Change Climate and Adaptation in the Buffer Area of the New National Capital*
9. Mitra Aksi; *Increasing the resilience of smallholders from climate impacts through Smart Agriculture based on Livelihood Diversification in Indonesia*
10. KUAT (KARSA); *Strengthening Community Adaptation toward Climate Change through ProKlim in Ecoregion Neck of Sulawesi Island*

With this consideration, and in my capacity as the National Designated Authority of Adaptation Fund in Indonesia, I recommend the above proposals be granted support from the Adaptation Fund Board. All those programs will be executed by each of the submitting entities under the supervision of *Kemitraan* – Partnership for Governance Reform.

Sincerely Yours,



Laksmi Dhewanthi
Director General of Climate Change
Ministry of Environment and Forestry
as Indonesia Designated Authority of Adaptation Fund

Copy to:
Kemitraan (Partnership Governance Reform in Indonesia)



BUPATI WAJO

SURAT REKOMENDASI

Nomor: 800/501/Setda

Yang bertanda tangan di bawah ini:

Nama : Dr. H. Amran Mahmud, S.Sos., M.Si
Jabatan : Bupati Wajo
Instansi : Pemerintah Kab. Wajo

Mewakili Pemerintah Kabupaten Wajo dengan ini memberikan rekomendasi dan dukungan penuh kepada Yayasan Tim Layanan Kehutanan Masyarakat (TLKM) sebagai *Non-Government Organization (NGO)* yang aktif dalam pemberdayaan masyarakat desa, untuk mengajukan daerah di Kabupaten Wajo, Sulawesi Selatan sebagai lokasi pengusulan program/project Adaptasi Perubahan Iklim dengan tema "Penguatan Ketahanan Iklim Masyarakat Ekosistem Danau Tempe Melalui Tata Kelola Berkelanjutan". Dalam hal ini Yayasan TLKM akan mengajukan usulan program/proyek kepada lembaga pemberi dana hibah internasional "Adaptation Fund" melalui Kemitraan (*The Partnership for Governance Reform*).

Demikian Surat Rekomendasi ini untuk digunakan sebagaimana mestinya.

Sengkang, 20 Juni 2022



DR. H. AMRAN MAHMUD, S.Sos., M.Si



BUPATI SOPPENG

SURAT REKOMENDASI

Nomor : 811 / KDS / VI / 2022

Yang bertanda tangan di bawah ini:

Nama : H. A. KASWADI RAZAK, SE
Jabatan : Bupati Soppeng
Instansi : Pemerintah Kabupaten Soppeng

Mewakili Pemerintah Kabupaten Soppeng dengan ini **memberikan Rekomendasi** dan dukungan penuh kepada Yayasan Tim Layanan Kehutanan Masyarakat (TLKM) sebagai *Non-Government Organization (NGO)* untuk mengajukan daerah di Kabupaten Soppeng Sulawesi Selatan sebagai lokasi pengusulan program/project Adaptasi Perubahan Iklim dengan tema "**Penguatan Ketahanan Iklim Masyarakat Ekosistem Danau Tempe Melalui Tata Kelola Berkelanjutan**". Dalam hal ini Yayasan TLKM akan mengajukan usulan program/proyek kepada lembaga pemberi dana hibah internasional "*Adaptation Fund*" melalui Kemitraan (*The Partnership for Governance Reform*) dengan ketentuan sebagai berikut :

1. Dalam melaksanakan kegiatannya tidak bertentangan dengan peraturan dan perundang - undangan yang berlaku.
2. Pemerintah Kabupaten Soppeng tidak bertanggungjawab terhadap penyalahgunaan Surat Rekomendasi ini.

Demikian Surat Rekomendasi ini untuk digunakan sebagaimana mestinya

Watansoppeng, 14 Juli 2022





PEMERINTAH PROVINSI SULAWESI SELATAN
DINAS KEHUTANAN

Jl. Bajiminas No. 14 Telp (0411) 873181-854638 Fax (0411) 873182 E-mail: dishut@provinsisulawesi.go.id

M A K A S S A R 90126

SURAT REKOMENDASI

Nomor: 800/2018/DISEBT

Yang bertanda tangan di bawah ini:

Nama : Ir. H. ANDI PARENRENGI, MP.
Jabatan : Kepala Dinas
Instansi : Dinas Kehutanan Provinsi Sulawesi Selatan

Mewakili Dinas Kehutanan Provinsi Sulawesi Selatan dengan ini **memberikan rekomendasi** dan dukungan penuh kepada Yayasan Tim Layanan Kehutanan Masyarakat (TLKM) dan Yayasan Romang Celebes Indonesia (YRC) sebagai *Non-Government Organization (NGO)* yang aktif dalam pemberdayaan masyarakat desa, untuk mengajukan daerah Kabupaten Wajo dan Soppeng, Sulawesi Selatan sebagai lokasi pengusulan program/project Adaptasi Perubahan Iklim dengan tema "**Penguatan Ketahanan Iklim Masyarakat Ekosistem Danau Tempe Melalui Tata Kelola Berkelanjutan**". Dalam hal ini Yayasan TLKM dan YRC akan mengajukan usulan program/proyek kepada lembaga pemberi dana hibah internasional "*Adaptation Fund*" melalui Kemitraan (*The Partnership for Governance Reform*).

Demikian Surat Rekomendasi ini untuk digunakan sebagaimana mestinya.

Makassar, 07 Juli 2022

Kepala Dinas Kehutanan
Provinsi Sulawesi Selatan



Ir. H. ANDI PARENRENGI, MP.

Pangkat : Pembina Utama Muda
NIP : 19631231 199703 1 020

Adaptation Fund Project ID:

Country/ies: **Indonesia**
 Title of Project/Programme: **Sustainable Landscape Governance; Towards Climate Resilience of Community in Tempe Lake Ecosystem.**
 Type of IE (NIE/MIE): **NIE**
 Implementing Entity: **Kemitraan – The Partnership for Governance Reform**
 Executing Entity/ies: **TLKM (Tim Layanan Kehutanan Masyarakat – Community Forest Services Team) & Partners**

A. Project Preparation Timeframe

Start date of PFG	1 September 2022
Completion date of PFG	30 November 2022

B. Proposed Project Preparation Activities (\$)

Describe the PFG activities and justifications:

List of Proposed Project Preparation Activities	Output of the PFG Activities	USD Amount
Data collection for baseline and analysis for each component	Collected data required to setup the basis for argument formulation and programme justification in the proposal	\$ 13.793
Travel meetings required for data collection and consultation	Confirmation of assumptions and situation on the ground before programme document finalized	\$ 12.931
Expert hiring for proposal writing	Assist Kemitraan in writing and use of collected baseline data to justify programme and enhance the proposal	\$ 19.655
Focus Group Discussion with Multistakeholders	To receive feedback and input on the Goal, Objective, Outcome and Output of the proposal which to be submitted to AF, so as to ensure it is in line with the national programmes and strategies of climate change adaptation	\$ 3.621
Total Project Formulation Grant		\$ 50.000

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Laode M. Syarif, KEMITRAAN		08 August 2022	Dewi Rizki	+6221-22780580	dewi.rizki@kemitraan.or.id

A. Gender Assessment and Methodology

To observe the way in which gender involvement at the project intervention sites, an assessment was conducted with several women representatives using the individual interview approach at the village. This is an effort to ensure that the data obtained can describe gender facts in their entirety. The following are the results of the field research:

Women Groups

The dominant activities of the women in intervention sites were settling in household work and helping their husbands in farming. Some of them are single parents who work as breadwinners and housekeepers. Each of them carries out their various routines individually, and there is no activity carried out jointly by women. For this reason, it is necessary to have a forum that involves women so that they will have activities other than those previously mentioned. This project is designed to empower women by encouraging groups that will involve them fully, from giving them access to participate until they can manage and/or get direct benefits.



Division of Labor within the family

There is no division of labor within the family. The village's customary rule suggests that women do household (domestic work) activities while men usually do work related to family earnings (public work).

The restrictions for women

There are no restrictions on activities specifically for women in the intervention sites.

Economy Sector

Based on the results of the assessment in several villages at the location of the Tempe Lake ecosystem project intervention in the catchment area and around Tempe Lake, data on the dynamics of community livelihoods were obtained, namely:

1. Forest Area Community

Most people make a living as farmers, and people who live and or own arable land in forest areas have obtained social forestry permits and have been included as members of the social forestry business group (KUPS) whose members only involve men. Despite the fact that women are members of social forestry groups and social forestry business groups, they do not have control over group activities. This states that women only play a role in carrying out the administrative group's responsibilities. Women also contribute to the labor force in other ways. For example, the specific role of women in one of the candlenuts business groups is to collect fruit and break candlenuts. Some women work as candlenut crushers to increase household income. Another specific role is to provide meeting consumption (food and beverages) in the Tourism - Social Forestry Business Group (KUPS), which is based in one of the potential intervention villages.





In the agricultural sector, there is a division of roles between men and women, starting from preparing agricultural land to marketing commodity products. Men have the role of preparing the land before planting, planting, caring for the plants, and harvesting, and they dominate the decision-making regarding the types of crops to be planted. Meanwhile, the women's role is to prepare the seeds, helping plants, caring and harvest plants, and post-harvest treatments such as drying the crops. The role of women in the agricultural sector is seen as assistance, while men are the main actors. In the marketing of crops, men dominate market information and price determination. Several women work as entrepreneurs selling agricultural products but in tiny numbers, while

most women rely more on marketing matters to men. In this case, women's groups typically serve only as supplement workers. Women's participation is much lower than men's due to their ambiguous role in terms of economic fulfillment. This is based on societal stereotypes of men's and women's roles and is considered absolute. Such patterns, of course, will have an impact on the female head of the household or the primary breadwinner.

2. *Community Around the Waters Body (Lake)*

The community's livelihood pattern is strongly influenced by the flood disaster, where people work as farmers during the dry season, and during the rainy season, people work as fishermen. The division of roles between men and women is apparent, and men work as fishermen while women sell their catch. In addition, some women work as trawlers (fish fishing gear), weavers, and harvest workers to increase household income. This normative division of labor that occurs between men and women identifies women as additional workers. As a result of the inadequate wage structuralization, women become more vulnerable, and the bargaining power of women's services weakens.

Roles, functions, positions, and responsibilities at the village level

The results of the interviews showed that most of the critical positions at the village level were dominated by men. This fact was obtained during visits to several village offices at the project intervention sites. Head officials at the village and sub-village levels are always male, while women are in charge of administration and finance. During meetings and deliberation involving the village community, the invitation to the meeting is more often addressed to men. Meetings are always dominated by men in terms of decision making, while women only attend. This indicates that women's control over decisions is lacking.

B. Gender Analysis Pathway

Assist planners in planning gender-responsive programs, identify gender gaps in access, participation, control, and benefits obtained by male and female citizens, find out the background to the occurrence of gender gaps, formulate problems as a result of gender gaps and identify steps/ necessary intervention.

The above gender mainstreaming efforts will be pursued by:

- 1) Involve women's groups in all activities supporting income-generating activities and the household economy.
- 2) Involve gender groups equitably in decision making.
- 3) Activities targeting beneficiaries, such as capacity building and training that, involve women.
- 4) Gender mainstreaming will apply the principles of access, participation, control, and benefits approach.