



## ADAPTATION FUND

# PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

## PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category:	Regular Project
Country/ies:	Vanuatu
Title of Project/Programme:	Enhancing livelihood resilience in Vanuatu through forest and landscape restoration
Type of Implementing Entity	Multilateral Implementing Entity
Implementing Entity	Food and Agriculture Organization of United Nations
Executing Entity/ies:	Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management
Amount of Financing Requested:	7,128,450 (in U.S Dollars Equivalent)

### Background and development challenges

#### Geography

1. The Republic of Vanuatu is an island nation in the South Western Pacific Ocean, northeast of New Caledonia, east of Australia and west of Fiji. It is an archipelago of over 80 islands of which about 65 are inhabited, and the distance from the northernmost island to the southernmost islands is approximately 1,300 km<sup>1</sup>. The land in Vanuatu ranges from rugged mountains and high plateaus to rolling hills and low plateaus, with coastal terraces and offshore coral reefs. Sedimentary and coral limestones and volcanic rock predominate, and frequent earthquakes and active volcanoes can be found on several islands. There are also a number of submarine volcanoes in the group, and some islands have solfataras or fumaroles. The highest point is Tabwémasana, 6,165 feet (1,879 m), on Espiritu Santo, the largest island. The largest part of the archipelago is covered by dense rain forest, but drier regions have patches of savanna grassland<sup>2</sup>.

#### Climate

2. Vanuatu's climate varies with latitude, from wet tropical in the northern islands, which receive over 4,000 millimeters (mm) of annual rainfall to the dryer subtropical in the southern extremes of the archipelago, where annual average rainfall measures 1,500 mm. There are two seasons-hot and wet from November to April, and cooler and drier from May to October. The southeast trades are the prevailing winds, although northerlies during the hot season provide most of the heavy rainfall. Average temperatures range from 21°C to 27°C, and unlike many of the Pacific island nations, seasonal temperatures exhibit high variability with summertime highs exceeding 30°C and minimum temperatures often reaching below 20°C<sup>3</sup>. Seasonal and inter-annual variations in climate are driven by changes associated with El Niño, which affect every aspect of the climate in the Pacific<sup>4</sup>. Cyclones are common during the warm months of November to April, although two recent cyclonic events were experienced outside of the traditional cyclonic season<sup>5</sup>.

#### Socio-economic Context

3. The population of Vanuatu in 2021 is 301,695 with a large proportion living in rural areas<sup>6</sup>. The country has one of the highest population growth rates in the world at 2.4 percent increase in 2020.<sup>7</sup> The economy is mostly limited to two key sectors of tourism and subsistence agriculture. Further diversification is constrained by the remoteness, the high transaction cost of developing public sectors, the geographical barriers of transport and logistics, the described climate change impacts, and the constrained economies of scale of industry development.<sup>8,9,10</sup>

<sup>1</sup> Ministry of Climate Change (2021): Vanuatu GCF Country Programme

<sup>2</sup> Foester and Adams: Vanuatu (2021). Encyclopedia Britannica

<sup>3</sup> Pacific Climate Change Science Program partners (2011): Pacific Climate Change Science Program

<sup>4</sup> GEF, UNDP, SPREP: Pacific Adaptation to Climate Change, Vanuatu. Report of in-country consultation

<sup>5</sup> Global Facility for Disaster Risk Reduction and Recovery of World Bank (2011): Vanuatu, Climate Risk and Adaptation Country Profile

<sup>6</sup> Vanuatu National Statistics Office (2021)

<sup>7</sup> World Bank, IBRD-IDA (2020): Population growth, Vanuatu

<sup>8</sup> UNCDF (2019): The viability of mass market digital finance in the Pacific

<sup>9</sup> Nurse et al. (2014): Small islands. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change

<sup>10</sup> ADB (2016): Economic growth and sustainable development in the Pacific Island Countries. Policy Brief

4. Over the last 10 years, the national economy had performed relatively well but was exposed to multiple external factors that lead to consequential and shock-like downturns. Such recent factors are most notably the reoccurring cyclones (Pam in 2015 and Harold in 2020) and the COVID-19. Vanuatu achieved a steady and positive developmental trend as per the Human Development Index (HDI), increasing from 0.574 in 2005 to 0.609 in 2019.<sup>11</sup> Despite this, Vanuatu is still ranked at a low 140 out of 189 countries and territories that is still below the average for countries in the medium human development group and well-below the average (0.747) for countries in East Asia and the Pacific. Using the international poverty line (US 3.20 per day per capita), the headcount poverty rate is at 13.1 percent, while using the national poverty line (US 1.90 per day per capita), 12.7 percent of population lives in poverty.<sup>12</sup>
5. As per the World Bank definition, Vanuatu is considered a moderately deprived country. About 80 percent of the population live in rural areas. Despite the agriculture production potential, rural population is exposed to food insecurity, and the population surge exacerbates the risk. Due to its unique landscape including over 80 islands spanning across 1,300 km, and the inter-island geographical heterogeneity, the inequity in terms of access to assets, labor markets, services and transport is high. The large diversity adds to the divergent and multidimensional challenges for achieving a balanced and inclusive development. The resilience and vision of the country is well mirrored by the fact that Vanuatu became the 6<sup>th</sup> country in the world who graduated from the Least Developed Country status on 4 December 2020.<sup>13</sup> Despite the remarkable progress, the vulnerability to economic and environmental disasters remains a persistent fact that might easily reverse this achievement. The island's narrow economic base and cash economy is particularly vulnerable to the global economy and the fluctuations in tourism.<sup>14</sup><sup>15</sup> The vastly negative trade balance is unlikely to change in the future, while the following factors further limit the development pathways: the distance from international markets, the globally fastest growing population combined with shrinking natural resources, the high cost of energy, the infrastructure and transportation, the lack of structured markets, and, most importantly, the ever-devastating climate change impacts.
6. The institutional framework is fragile and fragmented and faces three major challenges: the transformation from the post-colonial administration area, the self-management structure of Ni-Vanuatu and the definition of the necessary functions of the state.<sup>16</sup> International financing has been a subject of debates, as past project deliveries tended to be less coordinated and harmonized. As the country greatly relies on international finance flows, including aids in grants and loans, investment and trade, the degree of development across islands and communities varies broadly.<sup>17</sup> The scattered and isolated locations of many islands further hamper the delivery of development opportunities and public services<sup>18</sup>. Adding to the complexity, the intra- and inter-island travel and communication are expensive and conditional, thus putting physical barriers to the implementation of development. Climate change, however, brings together the planning processes, whereas the population wearing many hats are prompted towards the common goal of combatting the risks. The evident sign of the central and community-level engagement to combat climate change is the early establishment of an institutional and regulatory framework responsible for mainstreaming climate change and disaster risk management into public decision-making processes.<sup>19</sup>
7. Tourism is the largest industry of the country but exposed to natural hazards. It accounts for the 45 percent of GDP, 38 percent of employment and 67 percent of total export earnings.<sup>20</sup><sup>21</sup> Cyclone Pam in 2015 alone caused 87 million USD loss in the tourism sector. The reconstruction plans to withhold the natural disasters indicate the importance of diversification and the improvement of joint sectors<sup>22</sup>. According to the Shared Vision 2030, tourism sector should be restructured to flow through other sectors, most importantly agriculture, handicrafts and public transportation. This would create employment, stimulate the GDP and increase governmental revenues. At the same time, it would expand the number of beneficiaries employed in tourism sectors and relax the heavy concentration of tourism hotspots by involving other islands in the supply chain. Also, strengthening other sectors will improve the economic resilience of the country, which is currently exposed to the natural disasters<sup>23</sup>.
8. Agriculture and fisheries (including forestry) are the second most important sectors. Although the contribution to the GDP is significantly less than that of tourism, it absorbs the rural unemployment and enhances the national food security through domestic production.<sup>24</sup> Over 70 percent of the rural population has some kind of income from agriculture.<sup>25</sup> Agriculture is dominated by subsistence farmers applying traditional methods and domestic labor. The instability of agricultural production

<sup>11</sup> UNDP (2020): The next frontier: Human Development and the Anthropocene. Briefing note for countries on the 2020 Human Development Report. Vanuatu

<sup>12</sup> World Bank (2019): Poverty and Equity Brief

<sup>13</sup> United Nations Office of the High Representative for the least developed countries, landlocked developing countries and small island developing states (2020)

<sup>14</sup> ADB (2009): Vanuatu Economic Report 2009. Accelerating reform.

<sup>15</sup> World Bank (2021): World Integrated Trade Solution

<sup>16</sup> AusAID (2007): The unfinished state. Drivers of change in Vanuatu

<sup>17</sup> Australian National Audit Office (2015): Managing Australian Aid to Vanuatu. Report No.43.

<sup>18</sup> ADB (2015): Understanding the political economy of Vanuatu

<sup>19</sup> Ministry of Climate Change (2021): Vanuatu GCF Country Programme

<sup>20</sup> WTO (2019): Trade Policy Review. Vanuatu

<sup>21</sup> IMF (2020) Tourism in the post-pandemic world. No. 21/02

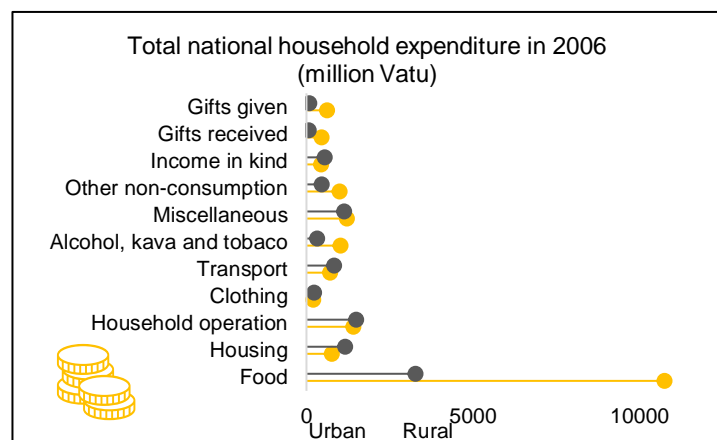
<sup>22</sup> IMF (2019): Vanuatu: 2019 Article IV Consultation-Press Release; Staff report, and Statement by the Executive Director for Vanuatu

<sup>23</sup> IMF (2018): Vanuatu Country Report 18/109

<sup>24</sup> ADB (2007): Mainstreaming Environmental Considerations in Economic and Development Planning Processes in Selected Pacific Developing Member Countries

<sup>25</sup> Vanuatu National Statistics Office (2013)

is one of the highest amongst the SIDS of Pacific.<sup>26</sup> The crop production is limited to five major products, including copra, coconut oil, beef, cocoa and kava. Together with timber, the six products have significant share in trade, as they take the 94 percent of the total merchandise export in 2010<sup>27</sup>.



**Figure 1:** Annual total household expenditure (source: Household Income and Expenditure Survey 2006, Vanuatu National Statistics Office)

largely informal and vulnerable, which is well demonstrated by the fact that only 30 percent of the population is in paid employment<sup>30</sup>. As per the national census, less than 10 percent of households report wages or salaries as income<sup>31</sup>. Remittances are an important instrument to support the shock absorption of poor households. Around 15 percent of urban and 38 percent of rural households receive remittances, 72 percent of which is in-country financial flow, though<sup>32</sup>. Amongst the SIDS of the Pacific, Vanuatu receives one of the smallest remittances-to-GDP ratio, indicating an overall dependence on in-situ income generation<sup>33</sup>.

9. Although there is a willingness to diversify the production pattern, crop losses are amongst the most frequent impacts of natural hazards.<sup>28</sup> Despite the self-production, still more than half of the household expenditure is for food items. On average, households spend around 28,500 Vatu for food in a year, equivalent to around 5,700 Vatu per capita. Consequently, any productivity decline in agriculture has an effect spilling over the livelihood, the welfare, the food security and the labor market. The difference in food-related expenditure amongst provinces is relatively low. Large differences amongst provinces are observed in the expenditure for housing, household operations and transport. These indicators are correlated to the urban-rural differences and the remoteness, whereas expenditures in urban areas greatly exceeds those in rural areas<sup>29</sup>.

10. However, not only agriculture but also other economic activities are subsistence driven. Employment is

#### Compounded crises - 2020

Tropical Cyclone (TC) Harold tore across the northern part of Vanuatu in 2020. It affected 26,400 households, equalling more than a third of the population. The human and social toll was huge, involving post-cyclone damages. It also affected over 2,000 km<sup>2</sup> of tropical forest and destroyed 218,000 agricultural plants. It decimated agricultural production with an initial economic loss of 18.1 billion Vatu (roughly 160 million USD). However, TC Harold was not the only crisis, leading to economic contraction. Only between March and June, the economic loss of COVID-19 in the private sector exceeded 7.5 billion Vatu (roughly 67 million USD). COVID-19 underlined the extreme vulnerability of the communities, in particular of those living isolated from the centre of the archipelago. The disrupted trade flow led to food insecurity, economic loss and decline in cash generation right at the onset of the crisis. The tourism sector that provides over 45 percent of the national GDP is amongst the most affected, as around 70 percent of the employees remained jobless<sup>34</sup>. The cascading effects spanned over sectors and communities.<sup>35</sup> Agriculture sustained a major loss of the compounded TC Harold and COVID-19 effects, sharing the 32 percent of the total damages and losses. However, agriculture is the sector that can recuperate in short-term, as it does not depend on international restrictions. It has also the potential to employ those who remained without an economic activity due to the decline in trade and tourism. It also contributes to the national food security, in particular in previously touristic areas. As an immediate response, the Government of Vanuatu implemented measures to diversify the economy away from tourism sector in favour of agriculture<sup>36</sup>. Such strategic decision to increase the resilience, however, requires new approaches that better utilize the local resources while supporting the sustainable management of natural resources.<sup>37</sup>

## Gender

11. **Health.** The gender health indicators are showing promising trends, with life expectancy having risen to 72.7 years for women and 69.6 years for men, while also the mortality rate for children younger than 5 has substantially decreased from 170 deaths per 1,000 live births in the 1950s to 26 in 2019. The country's infant mortality also significantly decreased to 117 deaths per 1,000 live births in the 1950s to 22 in 2019.<sup>38</sup>

<sup>26</sup> UNCTAD: Vanuatu. Harnessing Agricultural Trade for Sustainable Development

<sup>27</sup> World Bank (2021): World Integrated Trade Solution

<sup>28</sup> UN (2012): Vulnerability Profile of Vanuatu

<sup>29</sup> Vanuatu National Statistics Office (2010): Household Income and Expenditures Report. Statistics Release

<sup>30</sup> ILO (2020): Informal sector workers in Vanuatu to have a voice

<sup>31</sup> UNDP (2010): Vanuatu Hardship and Poverty Report. Analysis of 2010 Household Income and Expenditure Report

<sup>32</sup> UNCDF (2020): Economic impacts of natural hazards on vulnerable populations in Vanuatu

<sup>33</sup> ILO (2017): A study on the future of work in the Pacific

<sup>34</sup> UNCTAD (2021): Comprehensive study on the impact of COVID-19 on the Least Developed Country category

<sup>35</sup> World Bank (2021): Reskilling and labour migration vital to the Pacific's economic recovery

<sup>36</sup> Council Pacific Affairs (2020): Vanuatu looks to agriculture to help diversify economy

<sup>37</sup> World Bank (2020): Pacific island countries in the era of COVID-19: Macroeconomic impacts and job prospects

<sup>38</sup> UN Inter-agency Group for Child Mortality Estimation <https://childmortality.org/data/Vanuatu>

12. **Economy.** In a survey conducted by the Australian Government Department of Foreign Affairs and Trade (DFAT), women accounted for 36 percent of total paid members of the formal employment sector, and form 39 percent of the non-agricultural workforce, with approximately 28 percent of unpaid subsistence workers being female. In terms of paid employment, men comprise 29 percent compared to 23 percent of women. Overall, 80 percent of the women surveyed work to earn money, although women in urban areas are much less likely to earn their own money (58 percent in Port Vila and 57 percent in Luganville). Among women who are currently earning an income and living with a man (either married or de facto), over half (53 percent) earned about the same or more than their husband/partner. Nevertheless, less than one in five (18 percent) has savings in the bank, one in three (31 percent) has other savings and few women own any major assets of their own.<sup>39,40</sup>
13. **Law.** Vanuatu has no sexual harassment legislation and as such is in non-compliance with the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW). Vanuatu also has an unequal minimum age for marriage – 18 years for males and 16 years for females and parental consent family law also does not provide for the equal division of matrimonial property in the event of a divorce.<sup>41</sup> Vanuatu also has one of the highest levels of violence against women and girls globally. Research conducted by the Vanuatu Women’s Centre in 2011 found that 60 percent of women with an intimate partner had experienced physical violence, 68 percent had experienced emotional violence and 69 percent had experienced coercive behavioral control by men. Male family members and partners perpetrate most of the violence, which occurs in all provinces and islands and among all age groups, education levels, socio-economic groups and religions. Violence against women and girls (VAWG) is higher in rural (63 percent) than in urban (50 percent) areas. Social values held by both women and men reinforce the acceptability of VAWG as sixty percent of women agreed with at least one of the common reasons for gender-based violence.<sup>42</sup> Climate change and disasters have direct and multiple impact on women, affecting their social security. After the two tropical cyclones, the reported domestic violence cases increased by 300 percent.<sup>43</sup>

## Indigenous peoples

14. The largest majority of indigenous inhabitants, referred to as Ni-Vanuatu and Part Ni-Vanuatu, is Melanesian, and it accounts for around 98.7 percent of the total population. Minority groups are composed of Polynesians (Wallisian and Futunans ethnic groups, less than 1 percent of inhabitants), living particularly in the outer islands, as well as of communities of foreign descendants (Chinese, Vietnamese, European, Australian, New Zealander and i-Kiribati) for the remaining around 1 percent of the total population. Indigenous Vanuatu population is concentrated in the provinces of Torba (99.85 percent), Penama (99.9 percent), Malampa (99.89 percent), and Tafea (99.89 percent), while descendants of foreign origins and other minorities mostly live in the province of Shefa (1.7 percent), and in the urban centres of Port Vila (2.5 percent) and in Luganville (1.31 percent).<sup>44</sup> Ethnic differences within the agriculture sector appear largely consistent with the figures resulting from the national demographic distribution, whereby, according to the Post Pam 2016 mini census carried out by the Vanuatu Statistics Office, the largest majority of rural population (99.71 percent) is Melanesian. As for gender differences, Melanesian and Non-Melanesian populations show similar trends, with 50.6 percent of Melanesian male and 40.4 percent of Melanesian female employed in the agriculture sector, while amongst Non-Melanesians 51.8 percent are male and 48.2 percent are female.

## Youth

15. Youths in the 15-24 cohort makes up the 18 percent of the population, compared to the world average 15.5 percent<sup>45</sup>. Youth development is a major issue in the country that strives to provide education and employment to young people. School drop-out after the primary school is frequent, and most of the young people desert the education system in the secondary school. Only 5 percent of the population enrolls in tertiary education<sup>46</sup>. With a growing population and need to diversify economic activities, the education and active employment of youth is important.

## Climate change

16. Regarding the national-level climate change projections, several research gaps were identified, which make the predictions somewhat uncertain. Firstly, the cases of successful downscale of climate models to individual islands are rare, while no comprehensive, all-encompassing projection can be found at national level. On the other hand, the current models and methods are not applicable at the size scale of several islands. The spatial resolution of the conventionally applied global climate models (GCMs) makes the interpretation of values at small island scale difficult<sup>47</sup>. Therefore, the analysis must be two-tiered: projections based on scientific approaches and participatory assessment with communities.

<sup>39</sup> International Bank for Reconstruction and Development of World Bank (2014): Socio-economic atlas of Vanuatu

<sup>40</sup> UN Women Asia and the Pacific <https://asiapacific.unwomen.org/en/countries/fiji/co/vanuatu>

<sup>41</sup> Ibid

<sup>42</sup> Vanuatu Women’s Centre. 2011. Vanuatu national survey on women’s lives and family relationships. Port Vila - In FAO (2019) Country Gender Assessment of Agriculture and the Rural Sector in Vanuatu.

<sup>43</sup> World Bank (2016): Pacific Possible: Climate change and disaster resilience

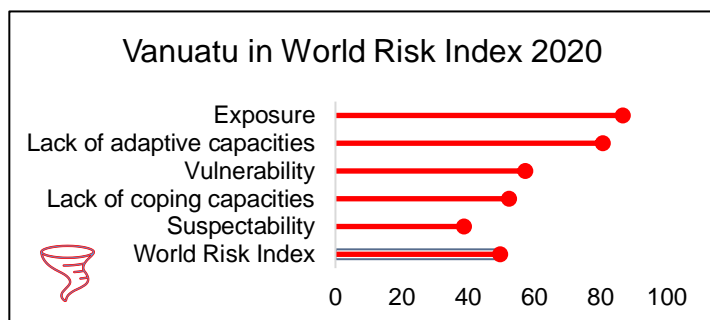
<sup>44</sup> Vanuatu National Statistics Office (2016): Microcensus 2016

<sup>45</sup> UN ICPD (2014): Country Implementation Profile. Vanuatu

<sup>46</sup> Vanuatu Monitoring, Evaluation and Research Team (2018): Vanuatu barriers to education study

<sup>47</sup> Global Facility for Disaster Risk Reduction and Recovery of World Bank (2011): Vanuatu, Climate Risk and Adaptation Country Profile

17. The Third National Communication to the United Nations Framework Convention on Climate Change (UNFCCC) refers to the World Risk Index 2018, whereby Vanuatu ranked highest (index value: 50.28), out of 172 countries, in the subcategory for overall risk and exposure to natural hazards. In 2020, Vanuatu leads the index as the country with the highest disaster risk (49.74) among 181 countries in the world.<sup>48</sup> According to the estimations in the report, over 50 percent of the population could potentially become victims of natural disasters. The country has been experiencing increasingly frequent and devastating natural disasters, of which weather and climate-related risks are exacerbated by global warming. Such risks involve: (i) sea level rise; (ii) temperature increase; (iii) changes in rainfall variability; (iv) extreme events, most importantly cyclones, floods and droughts.



**Figure 2:** Vanuatu risk assessment (World Risk Report, 2020)

and Aneityum spelled out the observed sea level rise as “*coastal communities having to be forced to make hard choices*”. In extreme cases, “*some of the coastal communities are relocating to create new villages or settlement inland*”. Neither migration, in particular oversea migration, nor relocation of settlements have been an usual phenomenon in Vanuatu. Quite the opposite, communities are reluctant to leave their homes, but all too often, natural hazards lead to the reconsideration of relocation or displacement<sup>52</sup>. In the National Climate Change and Disaster-Induced Displacement Policy, natural disasters are identified as a primary trigger of displacement. However, the Policy gives priority to the actions minimizing the drivers of the displacement, as well as communities prefer the on-spot adaptation measures that allow them to preserve their cultural identity.<sup>53</sup> For a country with extreme high population growth and limited inland area, the climate-change induced resettlement is an undesirable exit strategy, therefore in-situ and longstanding adaptation measures are of vital interest.

## Precipitation

19. The rainfall projections continue to be the subject of debate in the Pacific, with some models projecting +/- 25 percent change in rainfall by the end of the century. Considering RCP 8.5, it is expected that annual precipitation will decrease by 76 mm by 2040-2059, and a more frequent El Nino occurrence will result in prolonged drought conditions<sup>54</sup>. However, the projections can vary amongst islands, and the coverage of meteorological stations provide historical information only for the larger, central islands.

## Sea Level Rise

18. The sea level has risen by 6 mm since 1993, accounting for an almost double increase than that of the world average. Sea levels are projected to increase by 0.35 m by the end of the century<sup>49</sup>. However, the increase is not likely to be uniform, as circulation changes and ocean density affect the extend of increase.<sup>50</sup> The VanuaCLIM and SimCLIM projection by the Meteorological Services of Vanuatu predicted an even higher one meter increase by 2100 in the RCP 8.5 scenario.<sup>51</sup> However, the general data paucity and the earthquake activity influence the robustness of the modelling. The community consultation identified the need for coastal protection, and communities in Pentecost

<sup>48</sup> Bündnis Entwicklung Hilft (2020): World Risk Report 2020

<sup>49</sup> Pacific Climate Change Science Program partners (2011): Pacific Climate Change Science Program

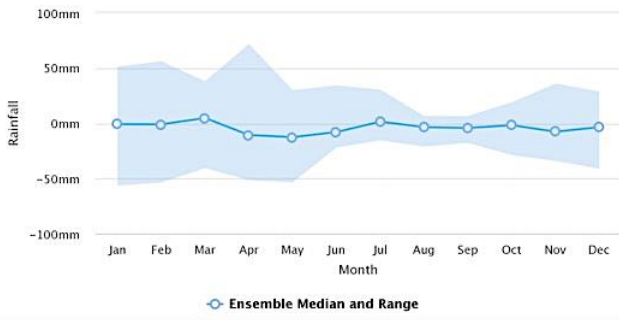
<sup>50</sup> Global Facility for Disaster Risk Reduction and Recovery of World Bank (2011): Vanuatu, Climate Risk and Adaptation Country Profile

<sup>51</sup> Vanuatu Meteorological Service (2009): Preliminary climate and sea level changes for Vanuatu through the application of SimCLIM for Vanuatu

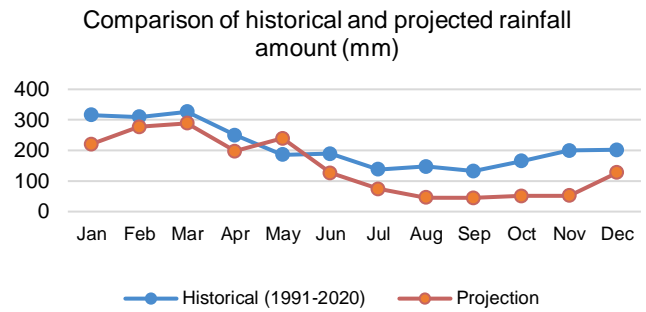
<sup>52</sup> UNCDF (2020): Economic impacts of natural hazards on vulnerable populations in Vanuatu

<sup>53</sup> Perumal (2018): The place where I live is where I belong”: community perspectives on climate change and climate-related migration in the Pacific island nation of Vanuatu. *Island Studies Journal*

<sup>54</sup> World Bank (2021) Climate Change Portal



**Figure 3:** Projected change in monthly precipitation for Vanuatu for 2020-2039, in RCP 8.5 (source: World Bank - Climate Knowledge Portal, 2021)



**Figure 4:** Comparison of historical (1991-2020) and projected mean in monthly precipitation for Vanuatu for 2040-2059, in RCP 8.5 (source: World Bank - Climate Knowledge Portal, 2021)

**Table 1:** National CMIP5 projections

Total annual rainfall change	2030	2050	2070	2090
RCP 2.6	+1% (-7 to +9%)	+1% (-6 to +9%)	0 % (-10 to +9%)	0% (-8 to +7%)
RCP 4.5	0 % (-9 to +13%)	0 % (-9 to +6%)	+1% (-9 to +9%)	0 % (-14 to +10%)
RCP 6	+2% (-4 to +13%)	+2% (-8 to +12%)	+3% (-6 to +16%)	+2% (-11 to +19%)
RCP 8.5	0 % (-6 to +8%)	0 % (-12 to +14%)	+2 % (-16 to +15%)	+5 % (-15 to +34%)

20. While no clear projection of rainfall change can be delineated with high certainty, the community consultation reported the systematic occurrence of heavier rains and prolonged dry spells. The observation is supported by the extreme rainfall projection by the Third National Communication that expects the current 1-in-20 year daily rainfall amount to increase by 8 mm by 2030, under RCP 8.5. For a country relying almost entirely on rain-fed agriculture, the rainfall pattern changes have multiple impacts.

## Temperature

21. The temperature increase is consistent with the global trends. Due to date, 0.17 °C and 0.18 °C increase per decade were observed in Port Vila and Aneityum respectively. There is no doubt that Vanuatu is subject to an increase in temperature, with a projected 1.2 °C increase by 2060, under RCP 8.5. National Adaptation Programme of Action defines droughts as a threat to all economic sectors and livelihoods. The pronounced drought periods with lower frequency are not only meteorological, but also agricultural phenomenon due to the reliance on rainwater, the high run-off through the rugged terrains, the water-demanding crops and the dropping and salinization of groundwater tables<sup>55</sup>. The shift in dry and wet season is observed by the communities, and direct impacts are reported. Crop production, forest degradation, early germination and sprouting are all encountered. For a country with limited access to international flow of goods, the loss of assets, degradation of natural resources, and failure of production have an un-proportionally higher impact on the most vulnerable.

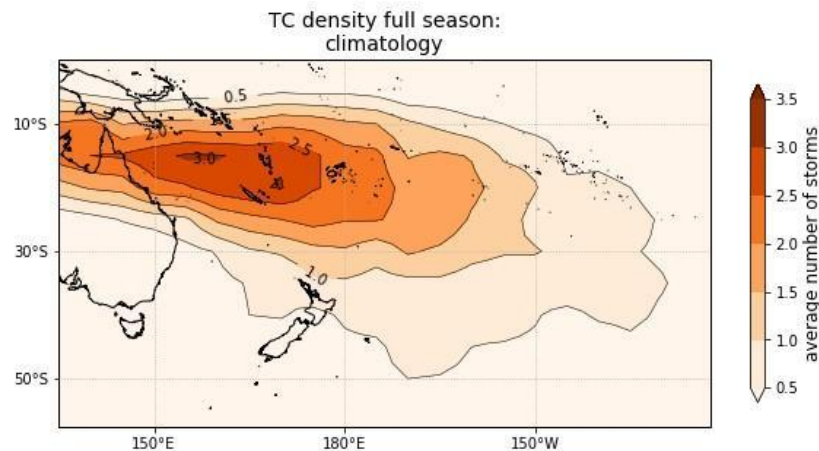
## Cyclones

22. Vanuatu is ranked as one of the most exposed countries to disaster risk globally. Disaster risk involves a wide range of hazards, including volcanic eruptions, earthquakes, tsunamis, cyclones, storm surges, droughts, floods and landslides. Amongst these, several hazards are direct impacts of the climate change. Cyclones and storms have longstanding history in Vanuatu, however, their intensity is exponentially growing. As Vanuatu is located on the tropical cyclone belt, the probability of cyclones averages 2-3 events per year.<sup>56,57</sup>

<sup>55</sup> GEF, UNDP, SOPAC, UNEP (2007): National Integrated Water Resource Management Diagnostic Report. Vanuatu.

<sup>56</sup> Government of Vanuatu (2019): Vanuatu National Statement on Climate & Tropical Cyclone Seasonal Outlook 2019/20, 2019

<sup>57</sup> Ministry of Climate Change (2021): Vanuatu GCF Country Programme



**Figure 5:** Number of Tropical Cyclones occurring for the main development season, average number during 1981 to 2010 (source: National Institute of Water and Atmospheric Research, 2020)

23. The frequency of storms in category 4-5 has doubled from 1975-1989 to 1990-2004. Over the last 20 years, Cyclone Uma in 1998 led to an estimated damage of 150 million USD, and Cyclone Pam caused a total economic loss of 449 million USD, roughly equivalent to 64 percent of the GDP.<sup>58</sup> The most recent one was Cyclone Harold in 2020, which affected over 159,000 people.<sup>59</sup> The northern islands of the country were the worst hit with total decimation of agricultural crops and natural vegetation.<sup>60</sup> The impact on local livelihoods, especially through destruction of ecosystems and agricultural production, severely affects the recovery process for both the local natural environments and the communities. Cyclone intensity is most likely to increase, as already experienced by the two large events in 2015 and 2020. According to the modelling of future cyclones, a tropical cyclone loss exceeding 312 million USD is expected once every 100 years. Such amount of damage reaches around 43 percent of Vanuatu's GDP. The projected average annual loss to cyclones is around 36.4 million USD, of which around 4 percent is associated to cash crop damage (1.4 million USD per annum).<sup>61,62,63</sup>
24. Despite the considerable effort paid by the Government of Vanuatu (GoV), the country requires further assistance to extend the coverage of real time monitoring system for hazard information (Government of Vanuatu, 2014). Understanding the importance of rigorous and reliable monitoring systems, GoV denoted two policy objectives out of five in the National Sustainable Development Plan 2016-2030 to improve the planning capacities, namely "Institutionalize climate change and disaster risk governance, and build institutional capacity and awareness" and "Strengthen post-disaster systems in planning, preparedness, response and recover". The disasters were mentioned in first row during the community consultation, with widespread concern about the future possibilities. Cyclones, storms, flooding are common in all islands, and damages sustained by private assets can be barely absorbed by the communities. Consulted livelihoods voiced the issue of institutional weaknesses as "*poor planning and preparedness will result in more time to recover from disasters and will cost more for both affected people and responding agencies plus government*". For a country under permanent and increasing pressure of cascades of disasters, the additional burden to secure livelihoods and ensure preparedness requires more developed institutional framework and bottom-up planning processes.

## Landscape and Forestry

25. Almost all islands are characterized by a rugged terrain, a considerable elevation change and steep slopes. Beyond the overall exposure to natural hazards, the islands are under permanent risk of geologic hazards, including volcanic eruptions, earthquakes and landslides. The land cultivation is concentrated to low-lying areas, as 60 percent of the flat, coastal areas are utilized for agriculture, human settlement and industrial activities. Land degradation is becoming the most critical environmental problem faced in different parts of the country. The degradation relates to the reduction of the vegetation cover in agroecosystems and soil erosion in elevated coastal and inland areas. Poor land-use practices contributed to land degradation and vicious cyclones caused extensive damages to trees and shrubs that protected coastal farming from winds and storm surges.

<sup>58</sup> Reliefweb (2015): TC Pam Post Disaster Needs Assessment

<sup>59</sup> ADB (2020): Vanuatu: Tropical Cyclone Harold Emergency Response Project

<sup>60</sup> Solace Global (2020): Tropical Cyclone Harold. Strongest cyclone of 2020 hits four Pacific Nations

<sup>61</sup> Global Facility for Disaster Risk Reduction and Recovery of World Bank (2011): Vanuatu, Country Risk Profile

<sup>62</sup> UNCDF (2020): Economic impacts of natural hazards on vulnerable populations in Vanuatu

<sup>63</sup> World Bank (2017): Pacific Possible. Long-term economic opportunities and challenges for Pacific Island countries

26. About 74 percent of land is covered by natural vegetation, 36.7 percent by forest. More than 440,000 ha are covered by tropical forest with tall trees, ferns, vines and orchids at high elevations, which represent more than 36.1 percent of Vanuatu's total land area.<sup>64</sup> Several forest types are included, from tropical lowland evergreen rain forest to broad-leaved deciduous forest, as well as closed conifer forest, montane, cloud and coastal forest, only 10 % of which is primary forest<sup>65</sup>. In addition, vegetation includes swamp forest on Efate and scattered mangrove forests, covering around 3,000 ha. This abundant forest cover defines Vanuatu as net sink for CO<sub>2</sub> emissions.

27. Forests play a pivotal role both in terms of the socio-economic and traditional aspects, but they are also crucial pillars of the disaster risk management. Over 90 percent of the rural households depend on forest products in some way<sup>66</sup>. Forests represent one of the main sources of cash income, while providing a wide range of ecosystem products, such as firewood/fuel, which are essential for the subsistence households, but the unsustainable exploitation of forests now led to an environmental threat that impacts the major ecosystem functions. According to the National Adaptation Programme of Action, the loggable forest area is around 27 percent of the total forest areas, but Vanuatu's National Forest Policy revealed a gross imbalance between forest utilization and reforestation/afforestation.

28. The forests are under the risk of climate change and human activities. The pressure by climate hazards, the growing population requiring more food, the economic pressure on unit lands, the agricultural extension (permanent cultivation, shifting cultivation, livestock etc.), and the infrastructure development (transport, construction materials, settlement encroachment, etc.) lead to a rapid decrease in total forested areas.<sup>67</sup> Over the last 20 years Vanuatu lost around 5,470 ha of humid primary forest, and around 16,300 ha of tree cover<sup>68</sup>. Most island forest species are particularly vulnerable to land use changes, while open forest is prone to invasion by alien species. Shrinking of natural resources, including land and forests, are consequential in Vanuatu, as each island manages an overly limited stock. The degradation of forests will lead to the lack of forest products required for daily subsistence, and to the decreasing of soil fertility and food production. Temperature increase and drought, already experienced during El Nino, would lead to leaf-loss or killing trees and increased risk of forest fires, while flooding from extreme rainfall, such as La Nina, are expected to generate sudden localized erosion which might undermine trees (on slopes). In addition, salt spray is causing forest dieback. MODIS data from 2000 to 2015 clearly display the rapid degradation of forests in Vanuatu. It is estimated that the total area with declining productivity is 328,190 ha, which includes over 300,000 ha of forests. In addition, 131,743 ha of forests, which represents the 12 percent of total area, have degraded between 2008 and 2018<sup>69</sup>.

29. The major obstacle to effectively control the forest areas is the lack of inventories and monitoring of economic activities related to forests. There is no legally defined permanent forest estate (PFE), and forests are almost exclusively managed under the customary systems. The communities have only limited prior experience on alternative and sustainable utilization of forests. Supporting them to improve their livelihoods through sustainable management of forest and land resources would enable a virtuous cycle that helps conserving the natural resources and provide sustainable income.

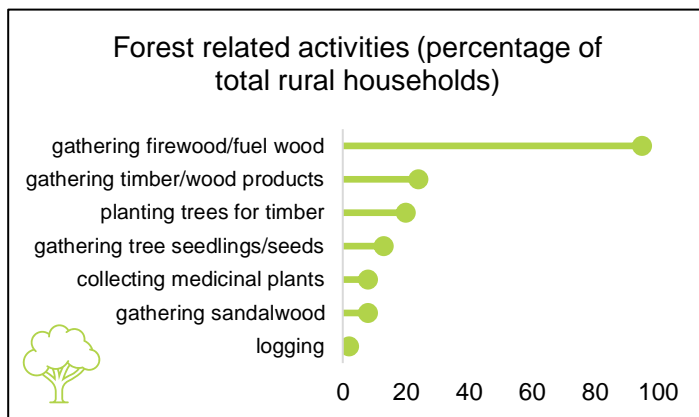


Figure 6: Households involved in forest related activities

<sup>64</sup> GEF IEO (2015): Vanuatu and SPREP (1991-2012). Country portfolio evaluation

<sup>65</sup> UN Environment, Convention on Biological Diversity (2019): 5th National report for the Convention on Biological Diversity

<sup>66</sup> Government of Vanuatu (2007): Census of agriculture

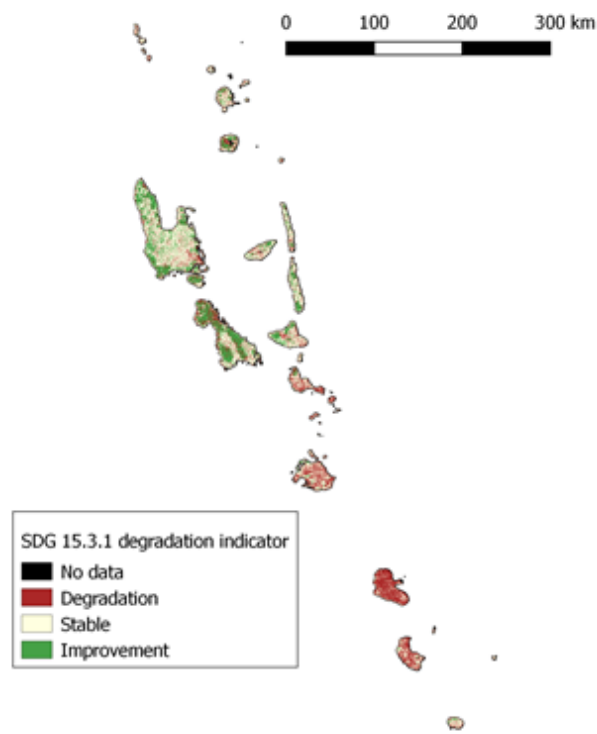
<sup>67</sup> FAO (2013): Asia-pacific Forestry Sector Outlook Study II. Vanuatu Forestry Outlook study

<sup>68</sup> Government of Vanuatu (2020): Enhancing and Fast-tracking Implementation of Vanuatu's Nationally Determined Contribution (NDC)

<sup>69</sup> National Forests and Landscape Restoration Strategy, using MODIS data (2020)



30. Forests should not be considered only as economic goods but their contribution to disaster risk reduction and climate change adaptation through the ecosystem services they provide is prominent in the current concept. In-situ forest and landscape restoration (FLR) has, therefore, its *raison-de-êre* to support in-situ climate change adaptation, eventually to increase the resilience and to contribute to the livelihood development. Another equally important function of forests is their cultural role. As communities defined “*in Vanuatu, forests are part of our life; our customs and culture depend on them*”, but “*we are now experiencing frequent natural hazards that is not only affecting lives but are considered to be important driver of forest degradation and deforestation.*” The national Forestry Policy recommends the integration of the nation of climate change adaptation in the forestry sector through multiple tangible and well-justified actions. It includes, inter alia, the exploitation of the potential of forests in adaptation through the development of forestry-related demonstration projects, including concerns for food security, soil stabilization, water management and coastal erosion; introduction and promotion of climate change resilient tree species and varieties; enhancement of food security through agro-forestry systems; minimization of wind damage to crops and infrastructure by trialing windbreak species and systems; introduction of ground cover initiatives to prevent soil and coastal erosion; and development of land use planning mechanisms to minimize the site specific climate change impacts. However, the positive contribution of forests and managed landscape can only be utilized if the current negative trends are reversed, and lost ecosystem functions are restored. The National Forest and Landscape Restoration Strategy (2020-2030) defines the most suitable way of restoration, involving plantation, agroforestry, assisted natural regeneration outside and inside the Protected Areas, as well as the plantation of mangrove. The Strategy sets out three relevant outcomes that have direct contribution to the adaptation of climate change, namely the “Restored degraded land and forests through tree planting and sustainable forest management”, “Improved standard of living for rural communities and maximize socio-economic benefits from FLR” and “Measured and shared FLR results and lessons.



**Figure 7:** Land productivity and land degradation maps, 2001-2015 MODIS satellite (source: National Forest and Landscape Restoration Strategy 2020)

**Potential of forests and agroforestry in climate change adaptation<sup>70</sup>**  
 Integrating forests and agroforestry in national climate change adaptation has gained growing attention. As NAPs are considered to be a core vehicle for delivering adaptation priorities and the defined goals of nationally determined contributions, mainstreaming all sectors into the NAPs has a strategic importance. FAO together with CGIAR published the supplementary guidelines on “Addressing Forestry and Agroforestry in National Adaptation Plans”. The Guidelines aims to show the need for adaptation of forests and trees, the importance of forests and trees for adaptation and the process to integrate forests and trees in the NAP process. The Guidelines acts as a driving concept of the project design to appropriately align the defined sectors with the national adaptation priorities.

## Agriculture

31. Vanuatu is fundamentally an agricultural resources-oriented society, where the majority of the rural population (around 70 percent) generates income from agriculture, either for subsistence, livelihood or cash income.<sup>71,72</sup> The average income from agriculture is around 681 USD per capita in 2012. From the total 1,223,000 ha land area, around 500,000 ha is production land, with an average land size of 10.4 ha per household. Compared to other countries this ratio is very high. Farm households continue to play an important role in Vanuatu’s economy, and local knowledge and skills of farmers can be improved with new methods and technologies. Subsistence farming makes up more than 75 percent of farming households in Vanuatu. Subsistence agriculture is dominated by root crops, including taro, yam, cassava and sweet potato. Subsistence farming is almost entirely dependent on rain, and it employs primarily the use of basic tools. While the environmental footprint of traditional, organic subsistence farming is considerably lower than that of other farming types, the risk of food insecurity prompts the reliance on food import, hence increasing the food import dependency. Semi-commercial agriculture is relevant mostly around the urban areas and utilized as secondary sector to provide for tourism and labor safeguard to absorb unemployment. Green leafy vegetables, such as cabbage types, tomatoes, capsicum and eggplant are the most

<sup>70</sup> FAO (2020): Addressing Forestry and Agroforestry in National Adaptation Plans. Supplementary Guidelines

<sup>71</sup> WFP (2016): Vanuatu. The impact of Cyclone Pam

<sup>72</sup> FAO (2019): Country gender assessment of agriculture and the rural sector in Vanuatu

common crops. The commercial sub-sector is dominated by four crops, involving coconut, kava, cocoa and coffee. Only the commercial sub-sector has export potential, however, its production volume shows a downward trend, owing to the instability of the world commodity prices, the emerging markets, the rudimentary production technologies and the lack of skills, expressed in the Vanuatu Agriculture Sector Policy.

32. Food insecurity is a rising issue in Vanuatu due to the growing population and the natural disasters. There is currently a little room to improve from the current shifting cultivation and to provide alternatives and increased production volume. The Agriculture Sector Policy recognized the early signs of nutrient deficiencies due to the shift from traditional nutritional crops to processed food. Subsequently, the Gudfala Kakae Policy was introduced to address the malnutrition issue. However, the production is far from being monitored and controlled, therefore the production is considered as “inconsistent”, referring to the low and irregular production. While agricultural production areas are encroached, the productivity per land unit lags behind of its potential. This way of increasing production volume is highly undesirable, as any increase in the production area requires the conversion of forests and native ecosystems into arable land. The increase of productivity is hampered by multiple factors, including the lack of access to updated and modern technologies, the soil infertility, the use of climate vulnerable varieties and the lack of profitable production at subsistence-farm level. The current low productivity levels closely relate to the climate change uncertainties. Traditional and rain-fed cropping is particularly vulnerable to the climate change impacts. While the rapid on-set events, such as cyclones and floods storms cause immediate damage and loss, the slow on-set events and the shift in production season pose equally worrying risk to farmers<sup>73</sup>. The multiple extreme events span over the year and impact most of the crops, most importantly taro and yam, the two staple crops. These crops have also long vegetative cycle that make them susceptible to climate hazards and leave no room to escape the stress. Perennial crops are less exposed to impacts, however, the changing rainfall regime and prolonged dry spells affect their growth cycle<sup>74</sup>. While the employment of more climate-resilient crops and practices are inevitable to achieve long-term resilience, such practices are insufficient to withhold the impacts of rapid on-set events. The protection of crops through physical measures (shading, shelters, wind-breaks, etc.) would be an optimal solution to ensure resilience.

**Table 2:** Climate hazard exposure of main crops (source: FAO, 2013)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Extreme events</b>												
Drought												
Flood												
Cyclones												
<b>Crops</b>												
Manioc												
Taro												
Yam												
Cabbage												
Tomato												
Carrot												
Orange												
Mandarin												
Mango												
Avocado												

33. The Agriculture Sector Policy identifies 13 thematic areas to address the complex issue of agricultural productivity and expansion of production volume. The thematic areas include food security, environmental protection and sustainable farming, climate variability, climate change and disaster risk reduction, and gender and vulnerable group related actions. The directives involve, inter alia, the application of environmental corridors in agriculture practices; sustainable traditional farming practices; site-appropriate improvement technologies such as agro-forestry; organic farming; facilitation of the distribution of sufficient, safe and nutritionally adequate foods; consideration of climate variability in farming; promotion of adaptation strategies; engagement of women and vulnerable groups in farming; equal opportunities; recognition of the contribution of women, youths and vulnerable groups. Closely related to the policy, Gudfala Kakae Policy (2017-2030) was introduced to promote a healthy diet promoting locally produced food. It aims to advocate aelan kakae (Vanuatuan cuisine), incorporating fish and fresh vegetables. The Policy came into force to achieve a reduction in imported food consumption, which is currently identified as a main threat to the health of communities.

<sup>73</sup> FAO: An assessment of the impact of climate change on agriculture and food security. A case study in Vanuatu

<sup>74</sup> FAO (2013): Climate change and agriculture in Vanuatu: A study of crops and farming system

34. Agroforestry is one of the identified measures of the national FLR strategy, the National Forestry Policy and the National Agriculture Policy due to its potential to provide a range of ecosystem services that are consistent with adaptation, food security and environmental objectives. Such services are the restoration of soil fertility, shelter for cropped area from climate hazards (most importantly intense rainfalls, cyclones, wind erosion and secondary salinization), the improved water retention of soil and the prevention of soil erosion. Protection, restoration and regeneration of forest resources have further benefits, such as the provision of productive assets for vulnerable communities, the increased capacities to withstand the climate hazards and the creation of integrated management involving water, land and forest resources.<sup>757677</sup> Agroforestry has been practiced in Vanuatu for long time and been identified as the key to diversify livelihoods, enhance food security and develop climate resilience. However, the majority of the agroforestry systems are not yet designed and implemented in a way that could adapt to climate change impacts. Several initiatives have been piloted to introduce cyclone-resistant agroforestry systems. Building on and increasing their effectiveness is essential to improve community resilience.

### Project approach

35. The unique combination of the large social and cultural diversity, informal economy and traditional practices requires longstanding and yet new approaches. The core concept of the project is to link the two key sectors of forestry and agriculture under the integrated approach of Forest and Landscape Restoration (FLR) through which adaptive capacities of vulnerable communities can be strengthened. The systematic approach of FLR is introduced to mitigate the impacts of climate change in the selected command areas by reducing the disaster risk and increasing food security. Such approach has the merit of balancing ecological functions with human development needs, without trading off the benefits of any. As per the definition of Global Partnership on Forest and Landscape Restoration “*FLR is an active process that brings people together to identify, negotiate and implement practices that restore an agreed optimal balance of the ecological, social and economic benefits of forests and trees within a broader pattern of land uses. Forest and landscape restoration turns barren or degraded areas of land into healthy, fertile, working landscapes where local communities, ecosystems and other stakeholders can cohabit, sustainably. To be successful, it needs to involve everyone with a stake in the landscape, to design the right solutions and build lasting relationships. FLR is not just about trees and the goal is to revitalize the landscape so that it can meet the needs of people and the natural environment, sustainably.*” By its very definition, FLR is an integrated and participatory approach that supports social, sustainable and economic objectives. It is a combination of ecosystem-based disaster risk reduction and ecosystem-based adaptation measures, thus providing an environment-centered livelihood development strategy. Applying a landscape approach to conservation and restoration of ecosystem has proven to be an effective way to reduce and manage disaster risks, enhance resilience, and increase food security.

### Project area

36. The preliminary project area selection is determined by multiple criteria, involving the climate vulnerability of communities; the detected but reversible decline in forest and land resources; the magnitude of the attainable project impact; the communities’ demands and need for diversification; potential of climate-resilient FLR-based approach, and the avoidance of project duplication. According to such criteria system, the pre-selected five islands share similarities, such as: (1) largest population, except Malekula due to its nationally dominant role in cocoa production that compromises the possibilities of alternative activities; (2) potential of diversified cash crop production that can be integrated into the agroforestry system; (3) high rate of subsistence farming that is inevitable for household food security and income generation<sup>78</sup>; (4) observed but reversible productivity decline where forest and landscape restoration can contribute to the improvement of livelihood; and 5) required capacity-building to empower the communities. Building on the results of the pre-selection, the full proposal development will apply an assessment and targeting strategy to refine the final selection of the islands and villages.

**Table 3:** Characteristics of the selected islands (source: community consultation, Household Income and Expenditure Survey by the National Statistics Office, NDVI mapping from MODIS satellite, 2021)

	Population (male)	Population (female)	Households	Productivity decline	Cash crop production	Subsistence farming	No schooling
Santo	29026	27586	9258	7.87 %	34.60%	62.05%	12.05%
Pentecost	21676		4508	12.92 %	67.10%	50.60%	19.50%
Efate	93727		19597	11.06 %	44.58%	22.70%	10.04%
Tanna	20097	20298	7274	20.72 %	86.60%	60.00%	16.50%
Aneityum	796	763	1559	21.97 %	64.73%	69.88%	41.50%

37. **East-Espiritu Santo:** The largest island in Vanuatu with over 50 percent forest coverage and high reliance on forest and agricultural resources. Santo was labelled as most affected area after the Tropical Cyclone (TC) Harold in 2020. The TC led to a complete decimation of production, and the communities voiced their concerns about future occurrences. The northern and central areas host several conservation and protected areas, but the easternmost areas, where the project

<sup>75</sup> Neufeldt (2013): Agroforestry and climate change adaptation and mitigation. World Agroforestry Center

<sup>76</sup> Lasco et al (2014): Agroforestry systems: helping smallholders adapt to climate risks while mitigating climate change. WIREs Climate Change 5(6)

<sup>77</sup> Mbow et al. (2014): Achieving mitigation and adaptation to climate change through sustainable agroforestry practices in Africa. Current Opinion in Environmental Sustainability. 6

<sup>78</sup> The project targets the rural sides of Efate, whereas subsistence farming is significantly higher than the island-aggregated indicator

activities will be located, are exposed to degradation due to the high population density, the climate hazards, the deforestation, the loss of forests and the evident soil degradation in Santo. The main agro-ecological problems are related to soil degradation, soil erosion, rainstorms, droughts (Bedford et al 2017). The population heavily relies on agriculture and forestry with the major source of incomes being copra, cocoa, kava and cattle raising.

38. **Pentecost:** A mountainous island in the North of Vanuatu with fertile soil and wet climate. It is dominated by kava and taro production and has a long-standing, in-country trade in these crops. However, most of the population generates their income by producing other cash crops such as manioc, kumula, coconuts, banana and cabbage, which are staple food in the villages. The island features a non-systematic, inland degradation and large coastal degradation. The communities reported intensified extreme storms and a change in rainfall patterns that now create a large uncertainty and threatens the traditional agriculture. The island is extremely exposed to sea level rise that turns into the loss of lands, relocation of settlements and abandonment of traditional agricultural practices. Like Santo, Pentecost is hit hard by TCs, most recently TC Harold forced the island to be categorized as the most affected area.
39. **Efate:** While the island hosts the capital of Vanuatu and is the recipient of the tourism income, the rural areas are the suppliers of the urban markets, and generate income only from agriculture. Climate change together with the high population density shrinks the production area. The island is exposed to multiple hazards including cyclones, flooding, drought, earthquakes, landslides and tsunamis. The land degradation status is exceptionally high owing to the climate hazards, unsustainable resource management and footprint of economic activities. Furthermore, Efate is frequently hit by drought. The combined effects are likely to impose a major challenge for farmers who are already under the pressure to supply sufficient food for household consumption and urban markets.
40. **Tanna:** One of the most populated islands with high population density and extreme exposure to climate hazards due to its outlying location. Although endowed with fertile soils, the communities daily struggle to secure their assets and produce sufficient food. The country has high potential to produce root crops and vegetables, however the community consultation shed light on the devastating effects of daily ash falls and acid rains. The land degradation assessment shows early signs of decline across the entire island with very modest restoration capacity, merely due to the harsh conditions posed by climate change challenges. The climate change effects and exposure to hazards seriously compromise the production conditions.
41. **Aneyitum:** Although the island is less populated and smaller compared to the others, Aneyitum is a net victim of the lack of diversification and heavy reliance on tourism. Agriculture production has a large potential, but due to the wealth of income from tourism, it was not frequently practiced previously. Despite the unexploited land potential, the island has degradation hotspots, concentrated in the southernmost part. COVID-19 led to a dramatic decline in income and practically left the communities without any source of income. Communities are now seeking to return to agriculture, most importantly to pine production and sustainable forest products to avoid more severe consequences. However, communities transitioning into agriculture must prevent further land productivity decline and embark on sustainable agriculture.



**Figure 8:** Consultation with women in South Pentecost

42. The communities live with and from the combination of forestry and agriculture related activities. The indigenous knowledge of agricultural production is the necessary building block of any intervention for development in Vanuatu. The community consultation recognized that traditional production has its environmental, cultural and economic merits. However, the growing climate uncertainty and consequent loss of resources, the economic and production pressure by the growing population, the limited options to diversify incomes and the desire to maintain traditional and custom-based activities are now requiring more pronounced interventions. Through the implementation of a suite of ecosystem-based adaptation measures under the overarching framework of FLR, the project can achieve substantial impact in these areas to help communities adapt to the climate change impacts, improve food security, protect and conserve resources, and strengthen their resilience.

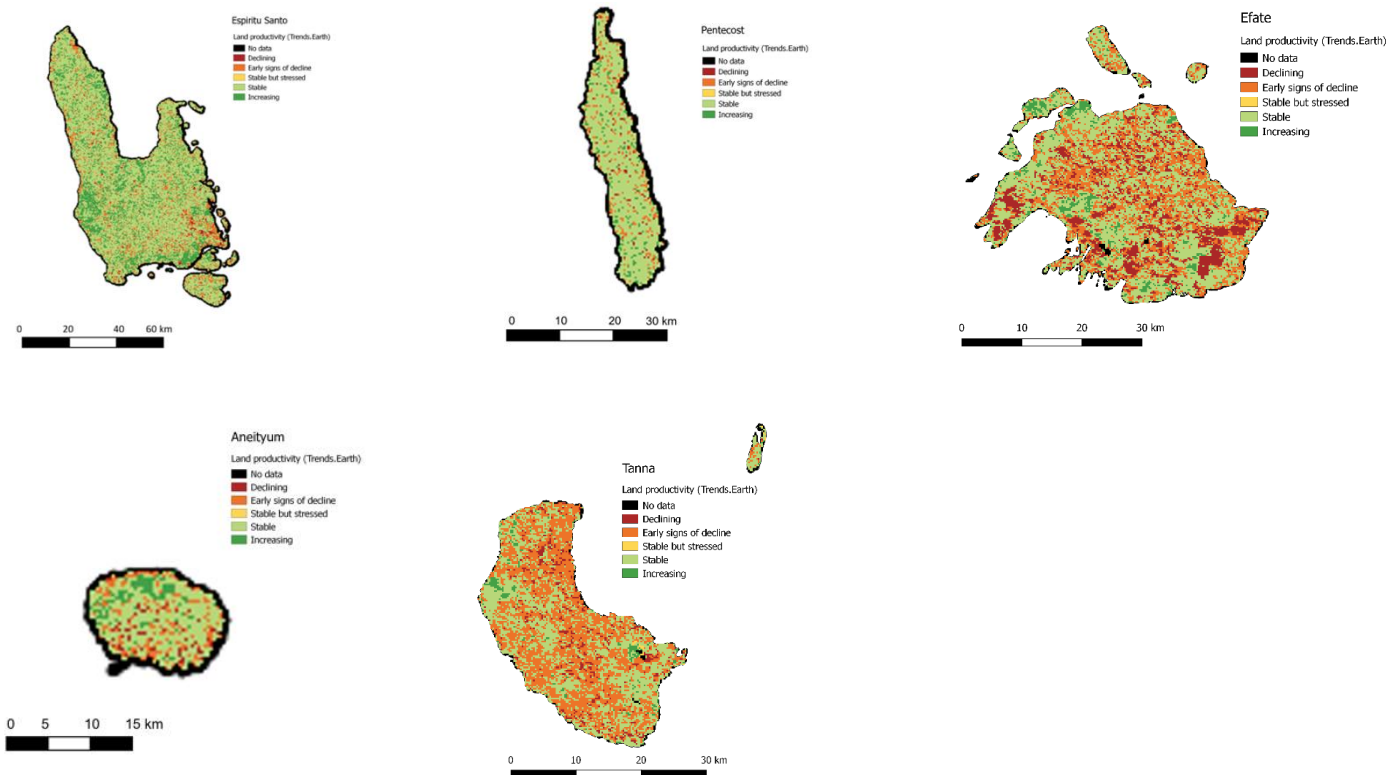


Figure 9 Land productivity in the target islands

## Project / Programme Objectives:

43. The overall objective of the project is to reduce the exposure to impacts of climate change on food security and livelihood through an integrated, overarching and ecosystem-based approach, called FLR. The climate change assessment revealed the following needs to be addressed:

- The current planning mechanisms to manage disaster risk and climate risks are in their infancy. The effort to set up a Ministry of Climate Change and mainstream climate change into all ministries indicates a strong governmental commitment to address the issue. One of the major issues hampering the preparedness is the lack of reliable and downscaled analysis and projections that would integrate ecosystem functions. Strengthening the sector-specific, namely FLR-related geospatial analysis, will help the country to conduct continuous monitoring of natural resources and productive assets. Therefore, the first component aims to enhance the enabling environment to improve disaster risk governance, including preparedness, management, response and recovery through Forest and Landscape Restoration. The component is in line with the AF strategic results framework, notably Outcome 1, Outcome 2, Outcome 3, Outcome 4, Outcome 5, Outcome 7, and Outcome 8.
- Natural resources, namely forest and land, are under enormous pressure by climate change impacts, disasters, and human interference. While forests have a suite of ecosystem functions and products in support of climate change adaptation, they are exposed to multiple challenges, including their considerations as “economic goods”. Forest and landscape restoration will help deploy their adaptation potential, make use of their environmental functions, and sustainably exploit their potential. Therefore, the second component aims to support climate-resilient forest and land resource restoration and management to protect coastal and inland ecosystem and productive assets. The component is in line with the AF strategic results framework, notably Outcome 1, Outcome 2, Outcome 3, Outcome 4, Outcome 5, and Outcome 8.
- The food insecurity, the lack of formal employment and income source, and the low potential of economic diversification stress the strategic importance of agriculture. However, agriculture is exposed to climate change impacts, the lands are unprotected to withstand climate hazards, the practices are traditional and under-equipped, and the productivity is low. Furthermore, the distant areas without a history of agriculture or with a low productivity potential are exposed to a food shortage due to the lack of access to other islands. Critical in responding to these complex challenges is to provide an alternative that involves sustainable, diversified, and productive methods and amplifies the production outputs per unit area. Therefore, the third component is designed to improve sustainable agroforestry defined in FLR plans to

increase adaptive capacity and reduce vulnerability of communities. The component is in line with the AF strategic results framework, notably Outcome 1, Outcome 2, Outcome 3, Outcome 4, Outcome 5, and Outcome 6.

44. FLR is defined as the framework of the project due to its potential to be built on community-based planning, However, the large heterogeneity of the islands and communities requires distinct and context-tailored activities under FLR. FLR sets out a large variety of implementation methods and provides a suite of alternative solutions applicable to the local contexts. Unlike other intervention methods that would require the reconsideration of the land tenure system (i.e. macro-catchment structures, irrigation systems, consolidation etc.), this approach can be embedded into the customary system. These features distinguish FLR from other approaches and make its implementation suitable in diverse environment and social settings. The overall objective of the project is aligned to the following Adaptation Fund Outcome and Indicators: Outcome (Indicator 1), Outcome 2 (Indicator 2.1.), Outcome 3 (Indicator 3.1., 3.2.), Outcome 4 (Indicator 4.1.), Outcome 5 (Indicator 5.1.), Outcome 6 (Indicator 6.1., 6.2.), Outcome 7 (Indicator 7.1., 7.2.), Outcome 8 (Indicator 8.1., 8.2.).

## Project / Programme Components and Financing:

Project/Programme Components	Expected Outcomes	Expected Outputs	Amount (US\$)
1. Enhancing the enabling environment to improve disaster risk governance, including preparedness, management, response and recovery through Forest and Landscape Restoration (FLR)	1.1. Strengthened enabling environment for Forest and Landscape Restoration-based adaptation through information-driven disaster risk management (DRM) and enhanced planning mechanisms.	1.1.1. Existing Geoportal Disaster Risk Management information system upgraded and downscaled to community level. 1.1.2. Climate change and DRM policies reviewed and FLR mainstreamed. 1.1.3. Financial strategy for forest and landscape restoration developed. 1.1.4. FLR plans developed for the targeted islands, ensuring DRM through ecosystem-based adaptation measures. 1.1.5. Training programmes on geospatial analysis, information-based decision-making and planning mechanism of FLR.	600,000
2. Supporting climate-resilient forest and land resource management to protect coastal and inland ecosystem and productive assets	2.1. Improved climate-resilience of coastal and inland ecosystems through combined nature-based measures of FLR.	2.1.1. Community-based nurseries including storm-resistant plants and species for agroforestry established and integrated into inclusive supply-chain 2.1.2. Ecosystem-based measures (shelterbelts, green embankments, mangrove plantations and eco-buffers) implemented for restoration and revitalization of protection sites in coastal and inland areas. 2.1.3. Awareness-raising campaign related to forest/natural resource-based disaster risk management implemented. 2.1.4. Trainings and demo sites on natural areas restoration practices and techniques, implemented at extension and community levels.	2,400,000
3. Improving sustainable agroforestry defined in FLR plans to increase adaptive capacity and reduce vulnerability of communities	3.1. Increased adaptive capacities and resilience of vulnerable communities through multifunctional and climate-resilient agroforestry as part of the FLR plans.	3.1.1 Climate-smart agricultural practices integrated into agroforestry practices and piloted in model farms. 3.1.2 Capacity-building programmes on resilient agroforestry implemented through demonstration of model farms and fact-finding trips.	3,000,000
	3.2. Reduced vulnerability of communities through improved value-chain and increased income.	3.2.1. Cash-crop production integrated into agroforestry practices in de-risked areas. 3.2.2. Local livelihoods diversified and strengthened through value chain approach. 3.2.3. Agriculture commodity information system established, and inclusive inter-island trade modalities developed. 3.2.4. Capacities of produce marketing organizations (PMOs) enhanced for structured and sustainable market engagement. 3.2.5. Forest to Table Alliance (FoTA), including linkages between buyers and farmers introduced to support informed production	

Project/Programme Components	Expected Outcomes	Expected Outputs	Amount (US\$)
6. Project/Programme Execution cost			570,000
7. Total Project/Programme Cost			6,570,000
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			558,450
<b>Amount of Financing Requested</b>			<b>7,128,450</b>

## Projected Calendar:

Milestones	Expected Dates
Start of Project/Programme Implementation	06-2022
Mid-term Review (if planned)	12-2024
Project/Programme Closing	06-2027
Terminal Evaluation	08-2027

## PART II: PROJECT / PROGRAMME JUSTIFICATION

### A. Project components, focusing on the concrete adaptation activities of the project and their contribution to climate resilience

45. The project aims to improve resilience and food security through ecosystem-based adaptation measures. The diversity of the communities, the severe exposure to multiple hazards, the sparse information on downscaled climate change assessment and projections, and the heterogeneity in terms of climate, topography, and natural resource endowment required a community-based project planning. This is in line with the National Climate Change and Disaster Risk Reduction Policy (CCDRP, 2016-2030), which defines Vanuatu's urban and rural communities as being diverse, therefore requires the climate adaptation and disaster risk reduction actions to be tailored to the unique characteristics of each individual community. Equally important, the policy defines the importance of integrated climate change adaptation and disaster risk reduction, as the two are closely intertwined. The Policy also emphasizes the preference of soft ecosystem-based approaches over hard engineered infrastructure for ecosystem function maintenance, and advocates for sound land-use planning approaches and the enforcement of ecosystem-related development policies. At global level, the project is pre-aligned with the Food Systems, Land Use and Restoration Impact Program (FOLUR) through its four interconnected components: Development of integrated landscape management (ILM) systems, Promotion of sustainable food production practices and responsible value chains, Conservation and restoration of natural habitats, Project Coordination and M&E. The project components will contribute to the preservation of ecosystem services in some of Vanuatu agricultural growth areas. More specifically in terms of alignment, both initiatives have parallel working directions: participatory planning (Outcome 1.1), improved land use practices and restoration activities (Outcome 2.1), sustainable land use practices and restoration activities scaled up (Outcome 3.1), improvements on local and international markets (Outcome 3.2). The initiatives are also technically parallel in the aspects of FOLUR long-term outputs. The AF project outputs facilitate the promotion of sustainable food systems (Output 2.1.1, Output 3.1.1, Output 3.1.2), reduction of negative externalities in value chain (Output 3.2.2), landscape restoration (Output 1.1.4, Output 2.1.2) The potential synergies are identified in the transformation of food, market and land-use systems and assistance to help rural areas to reconcile competing social, economic, and environmental interests by moving away from unsustainable sectoral approaches. The AF project will seek to activate the identified synergy potential in specific ways both in full project development (project ToC) and actual implementation stages.
46. To correspond to the complex requirement of the national strategies and legislation, the project formulation applies a bottom-up approach. To this end, communities were consulted to understand the most desirable intervention activities, and the recommended adaptation measures were built around the identified risks and needs. The project is also focused on the scalability and the transfer of acquired information and knowledge, and therefore includes capacity-building and awareness-raising activities at each stage. The capacity-building activities and knowledge components accompanying each project component enable the absorption and possible replication of project results.
47. The project embarks on the support of the development of planning mechanisms from community to authority level through developing and mainstreaming FLR strategies into the climate change and disaster risk reduction strategies at island level. The proposed activities include a more accurate spatial analysis method to plug the gap in the recently available spatial information repositories and introduce ecosystem-based adaptation measures within the FLR concept, framed into the local context of the islands. Such measures contribute to the enhancement of the ecosystem functions and products of forest

and landscape. It targets the restoration of lost forest resources by a climate-resilient landscape planning (soil stabilizing green banks, greenbelts etc.), which are designed to withstand natural disasters and deploy climate change adaptation functions. Further down to the range of FLR measures, the project contributes to an increased agricultural productivity of subsistence-farming, and enhanced income of communities by introducing the combination of agroforestry and climate-smart, high-value production. Finally, the project addresses the challenges of remoteness and distinct production potential of the islands through facilitating access to markets and marketing. The smooth and inclusive distribution of food is of vital importance in a country where post-harvest, storage and processing facilities are absent, and population density and food demand are imbalanced.

48. The project incorporates several capacity-building activities, ensuring the timely delivery of knowledge products together with the project implementation. The communities rely on traditional knowledge, accumulated over the history. This indigenous knowledge is a key asset, and the project activities aims to preserve and make use of this human capital. The community consultations shed light on the desire to improve capacities through participatory approaches. The proposed activities, therefore, empower the communities through complementing and building this traditional knowledge with climate-resilient and ecosystem-based practices. Each component has activities, specifically targeting the capacity building and enabling the participatory management of the project results.

**Component 1. Enhancing the enabling environment to improve disaster risk governance, including preparedness, management, response and recovery through Forest and Landscape Restoration (FLR)**

49. **Rationale of the component:** Vanuatu Meteorological and Geo-Hazard Department and Warning Centre operates an early-warning system to send timely alert on natural hazards, including cyclones, eruptions, earthquakes, tsunamis, flooding and drought. The warning and alerts use multiple media outlets, including radio, TV, sms, email, direct phone calls and satellite phones. For cyclone warnings, the warning message are received 72 hours in advance, for severe weather 24 hours in advance, for earthquakes / tsunamis 10-20 minutes in advance, and volcanic activities 1-2 days in advance. Moreover, the Department issues the AgroMet Bulletins, providing agrometeorological forecasts and recommendations. The current climate change and disaster management cycle is, however, rather responsive. The integration of risk management into the daily activities and the increased preparedness and climate-proofing of project specific sectors would substantially decrease damages and losses. Mainstreaming of climate change adaptation and disaster risk management into the planning mechanisms, required also by the communities, is the very first step to achieve preparedness. Government of Vanuatu puts considerable efforts to mainstream climate change and disaster risk management into all sectors, and this is well reflected by the initiative of established clusters (8) and specialized departments in all ministries. This institutional advance supports the project objectives through providing a cross-cutting and interdisciplinary organizational setting (please see further information in Section J). The clusters serve also as a bridge amongst administrative levels from the Government to the Areas of Council, thus ensuring that all stakeholders are involved into the planning. As potential infrastructural support of the accurate planning, the regional umbrella of Pacific Community, Vanuatu National Statistics Office, Statistics for Development Decisions developed together with 12 countries in the region an integrated GIS platform (POPGIS3 - Vanuatu). The integrated platform is designed to update and prepare specialized analytics and reports on different sub-themes. The platform enables a systematic data management by storing, maintaining and displaying the information to users. Despite the innovative, cross-platform and all-encompassing design, the platform has currently no specific layers to support the project objectives, and no climate related analysis is currently integrated.
50. **Identified intervention needs:** The geography of Vanuatu is one of the key challenges that must be overcome through the analysis and planning processes. As the current spatial analyses and their robustness are seriously compromised due to the extremely small sizes of some islands, the downscaling of models must be supported by a combined approach, relying on both field calibration/validation and high-resolution satellite imagery. Vanuatu operates a geoportal with real-time information; however, much information relies on outdated datasets that are one-time and limited to providing short-term forecasts. There is an identified need for a system upgrade to strengthen the forecasting capacities, extend their projections to long-term predictions, and integrate the information in an interdisciplinary manner. Reliability of forecasting is a hard condition for the introduction of ecosystem-based approaches due to the required monitoring and delineation of climatic and environmental trends. There are implemented projects addressing this gap, and results, i.e. established and automated weather stations and early-warning systems in all provinces by UNDP, will be leveraged in this project (explained in section F). The project will synthesize, analyze and incorporate the produced data, and validate them in the context of the project area. It also aims to involve communities into monitoring activities and complement the acquired dataset and information with participatory vulnerability assessments. This will allow the sector-specific, community-based and vulnerability-oriented development of relevant forecasting products. The geoportal with extended functions would ensure that long-term adaptation strategies, such as FLR, are grounded in reliable information and support their mainstreaming into national policies, including the CCDRRP 2016-2030, Agriculture Policy and the Forestry Policy. The GIS platform (POPGIS3) maintained by the National Statistics Office provides a currently untapped opportunity to integrate the datasets and enable a micro-level analysis of different but interconnected sub-themes. It is updated and built in a programming environment that supports the cross-platform integration, so the connection between the system and the climate hazard geo platform, or specialized data acquisition methods (i.e. automated weather station software, crowd-sourced data, etc.) is facilitated. The platform operates across 3 administrative levels: national, provincial and Areas of Council. Accordingly, an accurate



analysis can be conducted even at local level and can be an asset of developing the project-related datasets and information in an integrated manner. A national level FLR strategy has already been approved and is being advocated by authorities. However, FLR requires the concrete adaptation measures to be designed at community level. Moreover, community consultations and the review of lessons learned from other projects have demonstrated the importance of developing sustainable financial plans for FLR. Community-driven, sustainable financial planning is essential for the long-term adoption of climate-resilient ecosystem-based approaches and therefore form one of the pillars of the proposed activities. To materialize the strategies, it is important to formulate technical sound FLR plans at island level. FLR planning requires an interdisciplinary and integrated approach that is informed by up-to-date data and information. FAO-implemented Forest and Landscape Restoration Mechanism (FLRM toolkit) introduced an overarching framework and ready-to-be-used methods to structure the information acquisition and management, data-supported planning and financing. It integrates the (1) planning, (2) monitoring and (3) financing in a complete cycle of FLR-based interventions and provides recommendations on practical implementations for each type of restoration goals (in this particular case: climate, food&products, community and biodiversity). From institutional point of view, this approach is supported by the established national clusters, aiming to mainstream climate change and disaster risk management in all ministries through to establishment of specialized department. However, the project addresses the piecemeal approach of implementing and operating information systems that support planning mechanism. It is of utmost important to take a more holistic view and implementation mode of climate change related interventions, which brings together actors from different fields and different administrative level. While the systematized datasets and abovementioned, upgraded information system provide a solid and accessible IT infrastructure, data management should be aligned to the three pillars. The FAO-constructed FLRM tool and knowledge products include relevant guidelines on how data collection protocol should be constructed. Such protocol will be the basis of operating the upgraded GIS platform and provide composite analytics around the project objectives. The establishment of the protocol in phased into two stages: assessment of the data network (data qualities of existing monitoring and information systems) and pre-design of the interoperability at the stage of full proposal development, full data collection and management protocol together with capacity-building at the stage of implementation. The pre-design of system will define the existing data sources, gap-filling mechanism, organizational responsibilities, reporting lines, expected data outputs and interoperation of different data collection mechanism. The project implementation will work out the complete data collection and management protocol in details and will provide a cross-cutting and interdisciplinary training amongst stakeholders to operate the system-at-whole.

51. **Outcome:** The outcome of the component is “Strengthened enabling environment for Forest and Landscape Restoration-based adaptation through information-driven disaster risk management (DRM) and enhanced planning mechanisms”.
52. **Activities:** Based on the rationale and identified interventions needs, the following activities are proposed under the Component 1:
  - a. *Existing Geoportal Disaster Risk Management information system upgraded and downscaled to community level:* The current geoportal operated by the Vanuatu Meteorology and Geohazard Department will be reviewed and upgraded with downscaled data and information at island level. Such data and information will be collected and synthesized from the on-going development. The climate information will be integrated into a holistic IT umbrella that can provide composite analysis of the project sector, involving all information and data generated across the different activities. The upgrade will focus specifically on the ecosystem and forest related information, with the objective to extend the forecasting functions with longer-term projections, focusing on the identified climate change trends that currently carry large uncertainties. A combined approach will help the downscaling of spatial analyses through structured data collection (crafted data collection and management protocol), and the introduction of key environment and agriculture related indicators in the community context (i.e. land productivity dynamics, combined land degradation score etc.).
  - b. *Climate change and disaster risk management policies reviewed and FLR mainstreamed:* National policies touch upon the potential of climate change adaptation through ecosystem-based adaptation measures, and FLR provides an option for it. FLR has multiple positive impacts on different sectors and provides means for sustainable climate change adaptation, sustainable source of incomes and environmental management. The project will conduct the harmonization of policies with the goal to mainstream FLR into them and provide tangible and concrete implementation modalities of adaptation measures.
  - c. *FLR plans developed for the targeted islands, ensuring DRM through ecosystem-based adaptation measures:* The concrete measures included in the context-specific FLR plans must be built on participatory approach and proper assessment of the target area. To strengthen the technical and socio-economic soundness of the plans, the FLR planning will be supported with updated and integrated information system. The activity will be, therefore, supported by a data collection and analysis protocol defined by the FLRM toolkit. The information from the geoportal of the Vanuatu Meteorology and Geohazard Department and from the sources set out by the protocol will be integrated into the platform of the Statistics for Development Decision Division (IT umbrella). This will require the harmonized coordination of the data and information system custodians of Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management, Ministry of Finance and Economic Management,

Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity and Ministry of Lands and Natural Resources. The activity will, thus, enable the synthesized and cross-coordinated maintenance and operation of the information system, together with data management functions. Accordingly, the project will develop advanced analysis methods to create targeted datasets and analytics towards the project objectives and integrating all results over the project components (FLR monitoring, agriculture, markets and commodities). Within the platform infrastructure, such analysis can be conducted at sub-national level, most importantly in the provincial offices who can provide timely analytics and information directly to the municipalities, local extension service branches and the communities. The integrated and accessible platform of activity 1.1.1. is, then, the building block of FLR planning. However, the planning is not merely a top-down approach, but it combines the efforts of all level, most importantly it must mobilize communities to take active role both at data acquisition and planning sides. Communities must be assisted to allow a conscious and proper final plan on the adopted measures. While the project will build good practices, as per the concrete FLR intervention defined in the full proposal, the activity will further support the planning of island-level FLR plans. The participatory delineation of FLR maps (drafts) provides an entire roadmap for the concrete FLR action at island level. This requires a community-based approach where all members agree on what should be done and where. This bird-view approach helps frame the FLR approach in a consistent plan. This preliminary mapping exercise helps avoiding potential pitfalls, such as restoration in areas threatened by unprecedented events. The preliminary plan directly feeds into the Component 2 and 3, where concrete interventions are implemented. However, the process is iterative. The implementation of concrete activities of Component 2 and 3 in the identified communities will provide evidence-based practices and tested methods. Mainstreaming them into the island-level FLR will strengthen the technical soundness of planning mechanism. Therefore, this activity will be coordinated closely with the implementation and evaluation of the results of other components. If target islands will have the combination of evidence-based results and comprehensive FLR plans at island level, the communities will be more likely able to leverage the developed knowledge and scale out the activities. Planning mechanism involves a range of activities including the analysis and evaluation of the project results regarding the field activities, topographical surveying, feasibility studies, scenario analysis, cost-benefit analysis, impact assessment, mainstreaming of best practices, and implementation framework. The project will provide support to communities to co-develop the island specific FLR plans.

- d. *Financial plans for forest and landscape restoration developed:* As part of the FLR plan, and in order to ensure the scalability and the technology transfer of FLR measures, financial sustainability and affordability is essential. The project will, therefore, support communities to develop community-based financial management plans that will help ensure ownership and the long-term sustainability of the FLR activities.
- e. *Training programmes on geospatial analysis, information-based decision-making and planning mechanism of FLR:* In order to enhance geospatial capacities at different levels, including geospatial analysis, information-based decision-making and planning mechanism of FLR, the project will provide training on information-based decision-making and planning mechanisms of FLRs for the professionals, the decision-makers and the members of extension service. The training programmes will bring together the different actors of the existing and upgraded information systems in an integrated manner, spanning through the relevant activities, where data acquisition and information systems are involved.

## **Component 2. Supporting climate-resilient forest and land resource management to protect coastal and inland ecosystem and productive assets**

53. **Rationale of the component:** Forest and land degradation is a major issue in Vanuatu and has multiple implications on the environment and livelihoods. Natural hazards and climate change pose an ever-increasing risk to the ecosystem and communities, but many of the impacts can be prevented and/or reserved by restoring the vegetation cover and forests. The Vanuatu Recovery Strategy 2020-2023 (TC Harold, COVID-19) defined the strengthened environmental services and resilience as a recovery objective, thus ensuring the commitment to conservation and sustainable management of biodiversity and ecosystems. This, in turn, can support mitigating the risk and reducing the magnitude of impact of future natural hazards. The importance of forest and landscape protection and land restoration is well recognized by all stakeholders as communities have already been observing a climate change-induced shift in the flowering and fruiting of tree species in their forests. Vanuatu's Overarching Productive Sector Policy (OPSP) includes provisions related to environmental services and resilience, notably Objective 5 defines the target of enhancing environmental services and sector resilience to natural disaster and climate change. The National CCDRP and REDD+ have clearly defined goals to reduce deforestation and forest degradation, which help climate change adaptation. The Third National Communication to the UNFCCC highlights the impact of deforestation on soil erosion and soil fertility, which reduces the coping ability. This is a message further amplified by the National Biodiversity Strategy and Action Plan that also calls for the reduction of direct pressure on biodiversity and promotes the sustainable use of forests. At least 60 percent of the total biomass has potential for reforestation and climate change adaptation. Such potentials include increased and sustained soil fertility, soil erosion prevention, riverine and coastal sedimentation control, natural barriers for pest and infestation, shelter from natural hazards (winds, storms, heavy rainfall, flood, etc.), coastal protection and soil moisture increase and water retention. Forests provide also an alternative source of income through sustainable and climate-resilient ecosystem products, including food (wild

fruits, nuts, roots, honey etc.), food additives (spices, flavorings etc.), medicinal plants, fodder for livestock, agriculture pasture, bee pastures, non-harvested construction materials (leaves for roof, bamboo etc.), fuel for domestic purposes and materials for handicrafts, frequently providing income for women. The National Handicraft Business Development Programme estimates that handicrafts generate 1.3 billion Vatu per year. This economically and socially significant activity vastly relies on non-harvested food products and can employ women and youth. Therefore, forests contribute to climate change adaptation by enhancing environmental resilience to adverse climatic events as well as providing alternative forms of income to the most vulnerable.

54. **Identified intervention needs:** Currently, forest degradation is rooted in a combination of drivers including the damage caused by natural disasters, the forest extraction for timber products, the forest area conversion into agricultural land, the wood production for infrastructure development and the encroachment of settlements. There is no effective policy in place to provide inventory, monitoring and control of the forest extraction. The communities are under pressure to seek alternative incomes and profit from the land, even though this profit is only short-term. Furthermore, the afforestation and reforestation are out of the scope of authorities, result often inconsistent, and have detrimental environmental impacts. However, considering forests resources from adaptation point of view is important, as ecosystem-based adaptation measures and agroforestry have potential to address a wide range of climate change impacts, beyond storms and winds. The FLR approach involving EbA measures and agroforestry helps mitigate the damages of erratic rainfall and floods. Green cover in proximity of river streams decrease the runoff, thus preventing flood damages. If woods around rivers with varying discharge are logged – as happening today, the resilience of the area dramatically decreases, and cropped areas are left without structural protection. Therefore, increased forest area and green cover, in particular on steep slopes and river banks, and integrating cropping into agroforestry system creates a structural measure to decrease the intensity of runoff. Mangrove plantation can improve the resilience of coastal areas, decrease coastal erosion and protect the low-lying agricultural areas from coastal flood and salinization. EbA measures have also a positive contribution to drought resilience, as green cover and shade of trees improve the soil water retention capacity, soil stability and decrease the evapotranspiration. Moreover, fallow lands can be planted with green cover to avoid the loss of topsoil and prevent the decline in fertility. Introducing EbA measures by themselves is not sufficient, as the change of the perception of communities is required to reinforce the objectives of EbA measures. Non-climatic threats are the direct results of income generation from deforestation (wood logging), encroachment of agricultural areas and the lack of clear boundaries between agricultural lands and restoration areas. The FLR plans developed in Component 1 will be a visual support to understand the impacts of economic activities on the environment and define the desirable boundaries of agricultural production. Following the path of Component 1 to enable communities to look at forest resources as adaptation means, the project will deliver awareness raising campaign and training on non-timber forest products in Component 2. This will strengthen the commitment of communities to shift away from forest exploitation. The experiences from the Livelihood Recovery Programme aiming to restore the damaged of Tropical Cyclone (TC) Harold provided valuable experience on how to formulate a comprehensive and sustainable implementation of forest and landscape restoration. The implementation arrangement of mere establishment of nurseries to supply the area and their commission to communities clearly highlighted that communities require capacity-development for the establishment of nurseries and implement restoration. If communities are not assisted during the entire cycle from nursery establishment to planting, the sustainability is not guaranteed. Another important aspect is the co-definition of the locations and functions of the plantations. The community consultation indicated the climate hazard hotspots: Santo – coastal areas, inland and farming areas, catchments; Pentecost – coastal areas, river bodies, inland farming areas and settlements; Efate – inland farming areas and catchments; Tanna – settlements, inland farming areas; Aneityum – coastal areas and coastal settlements. The identified hotspots pre-define the type of restoration measures, however, a complex multicriteria system must be constructed to guide communities towards the best measures and implementation modality, as supplement of the larger-scale FLR plans. The exact activities and their distribution amongst islands will be defined during the full proposal development.
55. **Outcome:** The outcome of the component is “Improved climate-resilience of coastal and inland ecosystems through combined nature-based measures of FLR”.
56. **Activities:** Based on the rationale and identified interventions needs, the following activities are proposed under the Component 2:
- a. *Community-based nurseries including storm-resistant plants and species for agroforestry established and integrated into inclusive supply-chain:* The establishment of community-based nursery is the first step to ensure a continuous, localized and diversified supply for restoration. The activity involves communities from the beginning and allows the co-management of the results. The integrated nursery development involves a multipurpose production of storm-resistant, climate resilient plants for ecosystem-based adaptation functions and plants fitting into agroforestry systems and for non-timber product generation (i.e. trees and plants for oil production, trees and plants for medicinal products etc.). Regarding the adaptation functions of forest species, species are proposed which have high potential for shade, shelter of living fence purposes, i.e. grafted citrus for storm resistant and productive shelter and embankment in open areas, bananas for direct proximity of agricultural lands and green fence of agroforestry system, native forestry species for natural protection from disasters (i.e. pterocarpus indicus, barringtonia edulis, hibiscus tiliaceus, agathis

macrophylla etc.). Furthermore, numerous plants can be inserted into the agroforestry systems due to their combined ecosystem and production functions, such as trees with shading and ecosystem product functions (i.e. canarium indicum, Santalum austrocaledonicum, coconut etc.), green covers with soil fertility and soil protection functions (mucuna, pigeon beans, fabaceae etc.), fruit trees with shading and productive functions (i.e. banana, citrus, mango etc.). Providing alternatives to the commercial seedling production in national nurseries (i.e. whitewood, sandal or mahogany), the project will promote diversified options of sustainable and adaptive forest management. Focus will be on training, assisting communities from nursery development, sowing, nurturing, seedling collection to planting. The activity will also set the focus on promoting certified and storm-resistant and climate-resilient plants to improve the climate resilience of restored areas.

- b. *Trainings and demo sites on natural areas restoration practices and techniques, implemented at extension and community levels:* The scale-out of generated knowledge and transfer of technologies must be ensured to benefit a larger scale of communities. The activity will involve specific trainings on restoration practices and techniques directly to the communities. The practices will be mainstreamed into national extension service programme to promote the adaptation potential of FLR and provide evidence-based good practices.
- c. *Ecosystem-based measures (shelterbelts, green embankments, mangrove plantations and eco-buffers) implemented for restoration and revitalization of protection sites in coastal and inland areas:* The knowledge and piloted experience in climate adaptation function of forest and plantation is fostered through the set-up of areas designed for withstanding climate hazards, most importantly storms, winds, heavy rainfall, and drought. The range of measures include, for example, mangroves in coastal areas to avoid coastal degradation, green embankments to stabilize soil and prevent soil erosion (i.e. native timber trees, gliricida or leucena), shelters to protect agricultural lands from storms, eco-buffers to prevent infestation, green cover (i.e. pigeon pea, hyacinth bean or mucuna) to stop drought. Local-specific sites will be designed as per the identified climate hotspots.
- d. *Awareness-raising campaign related to forest/natural resource-based disaster risk management implemented:* The shortsightedness of communities regarding the functions of forests stems from the pressure of generating income and providing food for households. The recent understanding of the ecosystem functions and adaptation potential is poor; therefore, many communities embark on forest plantation for timber-production purposes. There is a growing need for the re-valuation of forests and shift communities to the exploitation of ecosystem functions and non-harvested forest products that are sustainable and revenue-enhancing. It is expected that awareness-raising on the ecosystem and adaptation functions of the forests and providing alternative income sources through other project activities will help lower the threat of unsustainable use of forests and protect forest resources. The activity will involve an inter-island awareness-raising campaign to promote the role of forests in climate change adaptation and disaster risk management.

### **Component 3. Improving sustainable agroforestry defined in FLR plans to increase adaptive capacity and reduce vulnerability of communities**

57. **Rationale of the component:** The agriculture potential of Vanuatu is not yet exploited, despite its annual growth rate at 3.3 percent exceeds the growth of national economy. The population boom resulting in an annual 2.6 percent is the most significant trigger of developing agriculture sector. Since the 1980s, the food production volume has not significantly increased, while the population has almost doubled. This trend translates into the food consumption. 0.9 kg of food per capita was produced in 1983 compared to 0.5 kg in 2007.<sup>79</sup> The prevalence of undernourishment is 9.5 percent in 2019, and the prevalence of severe food insecurity in the total population is at 2.4 percent in 2020. Vanuatu has a massive trade imbalance with around 280 million USD import and 63 million USD export in 2011, but agriculture has a relatively low share in the total import value (World Bank, 2011). Rice and wheat are the main imported crops. In return, agriculture substantially contributes to the export value, coconut, copra, vegetables and boneless bovine make up over 60 percent of the total export value. The importance of developing a climate-resilient, diversified, nutritious, income-enhancing, resilient and sustainable mode of agricultural production cannot be understated. Since a correlation was set up between the quantity of imported food and obesity dietary deficiencies and malnutrition over the 80s and 90s, the Government set a priority on increasing domestic production and food supply of nutritious, local food. A more productive agriculture can also contribute to the Gudfala Kakae Policy, in support of healthy and balanced diet, based on locally produced food. Agriculture is also the backbone of rural livelihood, directly involving 75 percent of the rural population, although the major share of agricultural production is subsistence-based. The potential of vegetables and fruits are high, but the subsistence-driven production is concentrated to a few crops, including taro, yams, cassava, kava and sweet potato.
58. The export-oriented, semi-commercial and commercial producers grow copra, cocoa and coconut; the large, commercial coconut farms and the predominance of coconut production are inherited characteristics from the pre-independence era, when international coconut markets were targeted by the Europeans. The intensification of coconut production entailed the restructuring of the agriculture sector and the suppression of other crop areas. It also required the clearing of forests and the shift of food gardens onto the marginal lands<sup>80</sup>. The over-domination of coconut let the other crops out of the sight and

<sup>79</sup> Technical Centre for Agricultural and Rural Cooperation (2018): Building the evidence base on the agricultural nutrition nexus: Vanuatu

<sup>80</sup> Lamanda et al. (2006): Structure and dynamics of coconut-based agroforestry systems in Melanesia: A case study from the Vanuatu archipelago

neglected subsistence farmers. As consequence, the agricultural productivity is low, and the gap between actual and potential yield is increasing. This is due to, in priority order, the increasing climate hazards, the poor production practices, the loss of prime agricultural lands, the decreasing soil fertility, and the low level of production input. There is a growing effort to increase the productivity and production of the primary sector. However, the intensification of any other crop would result in a similar situation as of the coconut production, such as the disturbance of traditional and cultural relations, the critical loss of environmental biodiversity, the exposure to international markets and exclusive benefits of a limited part of the communities.

59. There is a renewed focus on agroforestry in Vanuatu, which used to be a traditional and long-standing production practice before the colonization. Agroforestry has a wide range of benefits, including the diversified production, genetic conservation, crop protection from climate hazards, reduced need for food expenditures, utilization of marginal lands and land conservation<sup>81</sup>. Cropping integrated in agroforestry system is more resilient as trees can provide protection from runoff and lower the damaging impacts of floods. Agroforestry provides a win-win option to gear agricultural towards environmental and livelihood objectives. National Agriculture Policy and Forestry Policy identifies agroforestry, together with organic farming practices as a strategic pillar of agriculture development. Agroforestry has the potential for climate change adaptation by providing shelter for crops and animals and hosting a diversified cropping pattern. Due to the shading and increased soil fertility by the trees and cover crops, the agroforestry system is more drought resilient, while both shading and harvestable trees can be inserted into the plant association (i.e. banana, citrus hybrids, gliricida, leucanea). However, primary production is only half the equation. Agricultural policies reiterated the issue of difficulties for access trade and marketing opportunities, high cost of shipping, lack of proper post-harvesting infrastructure and lack of coordination amongst producers. Crop production is highly seasonal, vegetables and fruits are perishable products, and communities have no prior knowledge or infrastructure to process or store foods. Another important factor is the varying production potential of islands, as some islands have no history of agriculture. Better distribution of food and support of supply chain are two important contributions of the project to counterbalance the complexity of remoteness. Vanuatu food market can be grouped into four categories: village markets, island rural markets, domestic markets and export markets. While village and island rural markets are often informal and part of a traditional gathering or ceremonies, they have strategic role in absorbing the food. In particular, island rural markets are specialized to target those who have regular and accountable salary. The sales points are, however, randomly created, and do not provide equal access to all. Moreover, there is no timely information on the actual market locations and trends. It is important to strengthen the information system on food supply and demand, and to empower the marketing organizations to coordinate the market actors.
60. **Identified intervention needs:** The agricultural production is heavily concentrated to a selected number of crops, and intensified cash crop cultivations occupy the high potential lands. According to the community consultation, climate change is adversely impacting agriculture due to changes in weather patterns and the shift in rainy season. Natural disasters, such as heavy rain, storm and flooding pose a rapid onset threat, mostly to kava producers. It is however not only climate change that adversely impacts the production but also rapid infestation of pests and diseases. The humid environment favors the spread of pests and diseases and for example communities in Pentecost and Tanna experience subsequent kava die-back due to the mosaic virus spread. All communities consulted recognized the potential of agroforestry and climate-smart agricultural practices to increase the resilience of agriculture and diversify their production. The success of agroforestry, however, depends on the proper design that takes account of the agro-ecological zone, pre-existing vegetation, inter-cropping potential, geographical and climatic conditions, cultural and economic requirements and exposure to climate hazards. The establishment of nurseries and design of climate-resilient agroforestry systems require support. The acquired experiences and results of piloted agroforestry and climate-smart practices is currently implemented by FAO project (GEF) provide evidence-based good practices that can be scaled-out in this project. The FAO project captured the pre-selected areas but involved only small-scale pilots, so the transferability of practices and lessons learnt will be investigated in the full proposal development, and results of experiences of this project (described in section F) will be scaled out. Another important baseline asset is the joint work and collaboration with national research centers on climate-resilient varieties and climate smart practices. Introducing drought-resilient crop varieties will help communities maintain their food needs, and secure and improve their yields even in dry periods. This will have a positive spillover effect on the environment, as better agricultural production will provide higher income, thus preventing communities from logging. The full proposal will provide the detailed plan on the area-specific plant associations and their reinforced role in climate change adaptation. The communities expressed their need to be trained and permanently supervised by experts. By responding to the consultation question on recommendations on successful adaptation projects, they stressed the importance of frequent visit of technical people on the ground and involvement of every member of the community. Equally important is to target the niche-markets and improve supply chain to ensure that increased production generates additional income. However, primary production is often in the hand of male heads of the households. Women are the hidden labor force, taking large share from production to marketing, still, they are often excluded from decision-making. The community consultation concluded that women are responsible for agriculture, undertaking most agricultural activities including the sale of agricultural productions and ensuring the nutritional needs of their family. Despite this, most communities are patrilineal and any decisions regarding

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<sup>81</sup> Harrison and Karim (2016): Promoting sustainable agriculture and agroforestry to replace unproductive land use in Fiji and Vanuatu

the leasing of land generally do not involve women. Women are also often excluded from consultations relating to land-use management. Building on enhanced and diversified agricultural production through agroforestry systems, improved marketing conditions are crucial to empower women and provide role in the agricultural supply chain. Strengthened and diversified supply-chain will also help communities generate income from other than timber products. The alternative income generation activity will contribute to attitude changes and prevent communities exploiting forest resources as timber products. Such marketing conditions require spatial information on the commodities in terms of quantity and prices. Integrating this information into the accessible GIS platform (the proposed IT umbrella in Component 1) is crucial to allow consistent tracking of market opportunities.

61. **Outcomes:** The outcomes of the component are the “increased adaptive capacities and resilience of vulnerable communities through multifunctional and climate-resilient agroforestry as part of the FLR plans” and “reduced vulnerability of communities through improved value-chain and increased income”.
62. **Activities:** Based on the rationale and identified interventions needs, the following activities are proposed under the Component 3:
  - a) *Climate-smart agricultural practices integrated into agroforestry practices and piloted in model farms:* The activity directly builds on the results of Component 2, namely the established integrated nurseries that provide a continuous supply of the defined trees and species. Agroforestry systems cumulate the production value into a plot of land, therefore their exposure to storms and climate hazards must be minimized. Country research programmes reached a remarkable progress of combining the traditional systems with climate-resilient species (drought resilient hybrids of taro, sweet potato, manioc and yam) that are also native in the areas. The project leverages the successful experience on storm- and cyclone-resilient agroforestry and introduce updated and resilient agroforestry systems. It also envisages the use of the drought resilient varieties together with climate smart agricultural practices (mulching, composting, furrows, strip planting etc.). Building on the climate adaptation function of agroforestry, which provides shading and shelter for crops. The integration of climate-smart practices into agroforestry will amplify the benefits per unit of land, diversify the incomes and withstand climate change impacts and hazards.
  - b) *Capacity-building programmes on resilient agroforestry implemented through demonstrations of model farms and fact-finding trips:* Responding to the requirement of communities and recognizing the constraints of poor production practices, capacity-building programme will be delivered, utilizing the evidence and accumulated experience during the project. This will include fact-finding trips to facilitate the knowledge forum amongst communities.
  - c) *Cash-crop production integrated into agroforestry practices in de-risked areas:* The production of vegetables and fruits will enhance the income and provide nutritious, locally produced crop for households. However, cash crop production involves a significantly higher production cost, and return must be ensured to secure the income of poor households. For instance, root crops and vegetables have high productivity in Tanna, however, the acid rain and ashfall burns the crop, leaving communities without any income. Therefore, this activity will promote cash-crop production in de-risked areas and integrate it into agroforestry systems. Through the introduction of ecosystem-based measures, such as green areas, tree shelters etc., the climate risk in the agricultural zone can be significantly reduced. The project will work towards a more resilient landscape around the agricultural zones to create such areas, where restoration and EbA measures can lower the risk, thus protecting cropped areas. The access of “de-risked” areas will be inclusive to all beneficiaries through either the implementation of EbA measures in climate-vulnerable areas (i.e. shading, fencing etc.), or the introduction of optimal cropping pattern and climate smart practices to protect the cash crops (i.e. strip cropping).
  - d) *Local livelihoods diversified and strengthened through value chain approach:* Value-chain approach will be strengthened through the identification of non-timber forest products, crops and agroforestry products. The activity will start with a stocktaking of sustainable products, guidance on processing such products, valuation and business planning of product merchandising. The activity will target women and youth communities to support income diversification and alternative income generation.
  - e) *Agriculture commodity information system established, and inclusive inter-island trade modalities developed:* Niche-markets, mostly rural village markets, will be profiled and communication channels amongst communities will be established. Building on the previous, but disconnected price-information system of the Department of Agriculture and Rural Development of Ministry of Agriculture, Livestock, Forestry and Fishery, the activity will promote the integration of cash crops and non-traded products into the information system, and extend the function of the system with spatial, farm, quality and quantity related information. The information system will be revived through an additional sub-theme in the integrated GIS platform (IT umbrella) managed by the Statistics for Development Decision Division.
  - f) *Capacities of produce marketing organizations (PMOs) enhanced for structured and sustainable market engagement:* The activity will strengthen the role of PMOs in the coordination of niche-markets with organizational development and specialized market facilitators. The activity will support the establishment of local markets, price-making mechanism, direct coordination of demand and supply sides and inclusive distribution of products. The activity will target women groups who are traditionally responsible for marketing, to enable a more efficient sale mechanism that current market conditions do not yet allow.

g) *Forest to Table Alliance (FoTA), including linkages between buyers and farmers introduced to support informed production:* The activity will promote the non-harvesting forest products as ecosystem products to shift communities away from forest extraction and show an alternative for income from forest. Based on the developed value chain and business model for sustainable forestry, the activity will create an income-enhancing utilization of forests, which is competitive and more profitable than harvested forest products. The activity will target young farmer groups to support the transformation of forestry through farmer generations.

## B. Economic, social and environmental benefits

63. In Vanuatu, the vulnerability of population to climate change impact and climate hazards is extremely high and ranked at the first placed globally. Disasters have a long history in Vanuatu, however, their intensification due to climate change entails a higher magnitude of impact. The traditional social settings, the adherence to their culture and the strong sense of independence encourage people to remain with their communities and not to give up on their lands. Therefore, the rate of migration and re-settlement is low in Vanuatu. This also makes communities more exposed to the climate change impacts and disasters, as their assets are permanently exposed to the increasingly frequent disasters.

64. The proportion of poor is significantly higher in rural areas than in Port Villa and Luganville. While urban areas tend to be specialized on tourism and service sectors, the rural population must make their living from primary production. Consequently, the employment is significantly lower in rural areas. Most of the population is self-employed, produce goods for sale and/or own consumption. People producing goods for sale are among the most vulnerable, 7.3 percent of them being below the nationally defined poverty line. Households own an average 10.4 ha land in rural areas, and an average household consists of 5 members. Due to the lack of formal economy, the estimation of average household income is somewhat biased and is limited only to the cash income. Some survey shows an average 30-60 thousand Vatu per household per annum, which has been relatively stable for a decade. The general income categories are seasonal, and two of the most profitable categories, manufactured items and handicrafts, are co-integrated with the tourism and infrastructure development. Cash crop production would generate around 26,000 Vatu per year (equivalent to 234 USD, as per the exchange rate in June 2021), but some estimations indicate three- or four-fold income from cash crops, depending on the land size, the amount of own consumption and the yield. Cocoa is the most profitable product with around 64,000 Vatu per household per year, followed by copra making around 56,000 Vatu per household per year. This income must cover the expenditure of the 5 members. The 2006 national census clearly highlighted the discrepancy that over 50 percent of the households have higher expenditure than their income.<sup>82</sup>

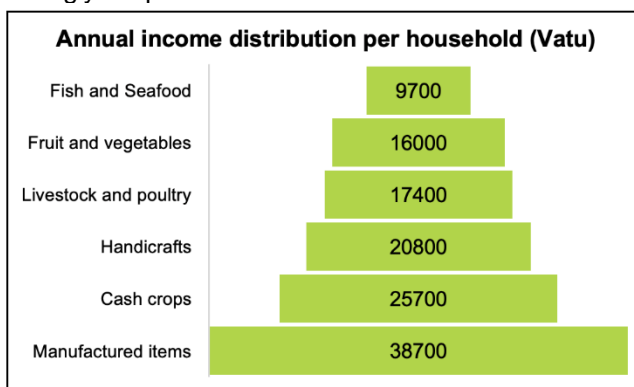


Figure 10: Household income distribution (source: National Household Income and Expenditure Survey 2010)

65. The income from agriculture has primary importance in the pre-defined project areas, as all communities live in rural areas or agriculture-dominated peri-urban areas in case of Efate and Espiritu Santo. The communities face compounded crises, as climate change compromises their yields, and the critical loss of access to markets due to COVID-19 jeopardizes the trade of diversified food. The access to markets had been already a pressing issue before COVID-19, as all identified communities are remote and isolated by geographical barriers. The initial consultation and project formulation involved 5 tentative islands with 24 communities, equaling a little over 8,000 potential beneficiaries. All communities are indigenous peoples, called ni-Vanuatu. These areas are 1) Lamoru, Angoro Abwatunbaliwa, Melsisi, Tansip, Pangi, Wali in Pentecost (around 1,8000 community members), 2) Port Olry, Hog Harbour, Sarutou and Kole in East-Espiritu Santo (around 1,100 community members), 3) Emua, Mangaliliu, Epau and Eton in Efate forest areas (around 1,600 community members), 4) Lenakel, Isangel, Letaus, Lamnatu, Nusumetu in Tanna (around 2,200 community members) and 5) Anelgauhat, Port Patrick and Urnej in Aneityum (around 1,200 community members). The shares of female and male members are almost equal in all communities, with no significant differences. In overall, the presence of youth is remarkable, as young community members make up around 50 percent of the communities, with the exception of Tanna, where the share of youth is even higher than in other islands (reaching up to 70-80 percent in two communities). Due to the rugged terrain and other geographical features (volcanos, mountainous areas, etc.), most of the communities live in low-lying lands, scattered around the perimeters of the islands, except Tanna, where communities are more centered in the inland areas. Mosaic-landscape type dominates in all communities, with marginal level of in-built areas. COVID-19 amplified the urban-to-rural migration, as most of the urban areas relied on income from tourism. Due to the immediate result of losing access to income, there is clear evidence of abandoning cities of Luganville in Espiritu Santo and Port Vila in Efate in 2020/2021.

<sup>82</sup> Jones and Charlton (2015): A cross-sectional analysis of the cost and affordability of achieving recommended intakes of non-starchy fruits and vegetables in the capital of Vanuatu. BMC Public Health. 15(301)

The influx into rural areas and agriculture in these two islands increases the pressure on the environment and the agriculture sector.

66. The typical size of agricultural plots is around 0.2 ha with irregular shapes, with no agricultural infrastructure around them. Multiple plots are cultivated by farmers, but all over, the agricultural lands and gardens are small-scale (based on expert observation and consultations, 2-5 ha in Espiritu Santo, 1-2 ha in Pentecost, 2-5 ha in Efate, 2-6 ha in Tanna and 1-3 ha in Aneityum). While it is estimated at national level that one household has around 10 ha land, small, but increasing proportion of land is used for crop production due to the environmental feasibility and lack of means to increase the areas. Unlike in areas covered by commercial agriculture in the country (i.e. coconut and cocoa), the agricultural lands and gardens in the pre-selected areas are not adjacent due to cultural, social and environmental considerations. Agriculture dominates over other negligible incomes such as remittances and employment. Subsistence crops and cash crops take around 80 percent of income of the communities in Espiritu Santo and Pentecost, 70 percent of communities in Efate and Tanna, and 60 percent of communities in Aneityum. Communities reported intensified dispute over lands due to some pressing issues, such as growing need for food, climate change-induced yield decline, vandalism over cropped areas and environmental degradation. Another issue observed during the consultations is the low diversification of crops. This is partly due to the facts that each island has its own agricultural history and acquired experience, and the visited rural communities are remote and have no access to other areas. Therefore, the exchange of knowledge and market accessibility are largely hampered. Markets are limited to weekly sales points in different areas of the islands: 1) daily Mama's market only in urban area (Luganville), weekly market in different locations and seasonal road markets in Espiritu Santo; 2) weekly market for staple crops and occasional export to other islands in Pentecost; 3) urban market only in urban area (Port Vila), fish market, weekly staple crop market in different location and seasonal road markets in Efate; 4) one market in different locations and seasonal road markets in Tanna; 4) bi-daily mobile markets in different locations in Aneityum. Improving agricultural production is a key priority in the areas, demonstrated also by the case of Aneityum, where Council of Chiefs imposed food import ban since Feb 2021 to prompt in-island production.
67. The project will provide equal benefits for all within the institution of customary land system, including vulnerable groups. The communities are all indigenous peoples, so the benefits generated by the project target the indigenous population, Ni Vanuatu. The customary system, by default, builds on the community-based management, thus involving all households in land management. To ensure equal economic and social benefits for each community members and within the households, the project involves activities that are geared towards the inclusion of women and youth, such activities are the cash crop production, non-timber forest products, market empowerment and business planning of productions and marketing. Section C demonstrates how these production forms are competitive compared to traditional agriculture and other economic activities. Such activities will be implemented in tandem with other project activities, so the equal distribution of income-enhancing interventions and the empowerment of vulnerable groups are guaranteed all over the project. The project activities are designed in a way that they enhance the livelihood while respecting the cultural values. The activities are co-formulated with the communities, who expressed their needs, recommendations and defined their roles in the specific project activities. Each activity is accompanied with capacity-building, knowledge transfer and awareness-raising to ensure the scale-out and replication already at the stage of project execution. The project is entirely built on ecosystem-based measures that are affordable for all and do not compromise the custom system.

**Table 4:** Expected benefits of the project

Current problem	With/after the project
<b>Economic</b>	
<p>a) Agriculture sustains significant damages each year due to climate change impacts and disasters. TC Harold last year led to total decimation of agricultural production in two of the involved islands and affected the other three. In lack of diversified production and alternative income, the communities keep being impacted by hazards and are under the threat of total or partial loss of yield.</p> <p>b) The current agricultural production is undiversified; therefore, cropped land is entirely exposed in case of any climate hazard event. The single crop production is also threatened by fluctuating market prices. Poor capacity to diversify cash crop varieties (in subsistence and traditional subsector), heavy reliance on a narrow range of crop varieties in the semi-subsistence sector led to food insecurity and low per capita income from cash crops (DARD 2015). Communities reported the issue of having access to a selected number of crops, thus living with an imbalanced diet. Since 2001 there is a declining productivity tendency in agriculture East Espiritu Santo – 7.87 percent, Pentecost – 12.92 percent, Efate – 11.06 percent and Tanna – 20.72 percent.</p>	<p>a) Forestry-based adaptation measures in Component 2. will increase the resilience of the landscape by providing physical protection to the crops and agricultural lands. Furthermore, crops produced in agroforestry systems will be protected by the trees. Through the adaptation measures and restored landscape, the project can benefit around 580 households in Pentecost, 450 households in Espiritu Santo, 400 in Efate, 850 in Tanna and 260 in Aneityum.</p> <p>b) Agroforestry systems, climate-resilient crops and cash crops integrated in value chain in Component 3, Output 3 will support the diversification of agricultural production. Instead of the current 1-2 crops per household, agroforestry systems can involve 4-5 additional crops, while providing also non-timber forest products and ecosystem services. This can benefit the agricultural areas in the identified communities, involving around 1,100 ha in Pentecost, 1,800 ha in Espiritu Santo, 1,200 ha in Efate, 3,400 ha in Tanna, and 300 ha in Aneityum. It is also expected that around 2,000 ha of agricultural production can be involved into agroforestry system, 300 ha in Aneityum (entire area due to the need for shading), 800 ha in Tanna, 100 ha in Efate, 500 ha in Espiritu Santo and 300 ha in Pentecost. As all household depends on agriculture, the project will ensure that all households have access to generated best practices and climate smart production, as well as cash crops can be integrated into the agricultural system.</p>



<p>c) The forest extraction to make income from timber and growing damages by climate hazard will continue to affect the ecosystem at an unprecedented pace, thus shrinking the forest area, losing the ecosystem function of forests, degrading the environment, and decreasing the adaptation role of forests.</p> <p>d) The selling in niche-markets continue to keep women in market uncertainty and compromise their income. The unsold and perishable products will account for further food and nutrition waste. The current market points are limited to weekly sales point in villages and seasonal road markets in Santo, weekly sales points and export to cities in Pentecost, four permanent market points in Efate (constrained to seaside and city markets), one weekly sales point and seasonal road markets in Tanna, and bi-daily salespoint in three villages in Aneityum.</p> <p>e) In case of critical loss of environment due to climate hazard, the communities keep rely on international aid and assistance to replace their plants and crops. Communities reported the hampered access to seedling, which eventually lead to increasing bare lands and land degradation.</p> <p>f) Due to its rudimentary nature, subsistence farming keeps being exposed to climate change impacts, subsequent reduced productivity. This affects the household level food security and the income of communities. Women continue to sustain the biggest losses, as they are more engaged in subsistence-farming.</p>	<p>c) The alternative income from non-harvested forest products will substitute the lost revenue of timber products in Component 2 and 3. Such alternative sources will generate income over the entire year with diversified products. The support to communities to identified, profitable and sustainable non-timber products will help create a market, while a business plan for production and merchandising will provide economic justification. At least 12 non-timber products are initially identified, which will be the basis of new diversified income. This can involve around 3,500 women and 2,500 young people in the project areas. The activities together with the capacity-building and access to alternative income sources are all-inclusive to all participants.</p> <p>d) The introduced value-chain approach, empowered marketing organizations and Forest-to-Table initiative will support a higher income generation with guaranteed sale points. A better information system about prices and products will facilitate the direct contact of sellers and buyers. The better access to markets will provide improved demand conditions for about 15,000 community members, and better conditions of the inhabitants of the islands (considering the access and current coverage of markets, around 80-100,000 inhabitants).</p> <p>e) The community- based nurseries, extended with agroforestry plants will provide continuous supply to re-establish the production system. The acquired knowledge on establishing nurseries will assist communities to replicate them in case of further need for seedling supply. Each community will have context-tailored nurseries based on the recommended plant associations. Establishing around 30 community-managed nursery can supply around 1,500-2,000 households.</p> <p>f) The diversification, the positive contribution of agroforestry to climate change adaptation, and the climate-smart and organic practices in Component 2 will help increasing the yields and allow the production of multiple crops. Without advocating agrochemicals, the project will help improving the production volume. This will translate in higher income and household food security. Women, who are responsible for providing food for the family, will be supported. Cash crop income per household can range from 20,000 to 150,000 Vatu, depending on the location, time and type of crops. The business plan and empowerment of market organizations will help to increase the income the remote locations. An increase in 10 percent of the cash crop area will provide additional income of 2,000 Vatu for women, around 350 women in Pentecost, 360 in Espiritu Santo, 700 in Efate, 830 in Tanna and 200 in Aneityum.</p>
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**Environmental**

<p>a) Forest degradation due to climate change and uncontrolled extraction maintains its current rate. The consequent soil degradation intensifies, thus inducing a cascade of effects, such as the soil fertility loss, the uncontrolled runoff, the loss of natural habitats, the biodiversity loss etc.</p> <p>b) The agricultural production remains undiversified and exposed to pest and viruses. The single cropping makes the entire area vulnerable to severe infestation.</p> <p>c) The sea-level rising keeps degrading coastal areas and led to loss of lands. The saltwater intrusion into aquifers increase the salinity level of groundwater.</p> <p>d) Agriculture keeps putting pressure on the ecosystem due to the encroachment of agricultural land and clearing of areas. However, yield will remain low, therefore, the only strategy to increase production volume will be the expansion of agricultural lands.</p>	<p>a) The afforestation, reforestation and introduction of climate adaptation function of forests in Component 2 will reverse forest degradation. The biodiversity and natural habitats will be maintained. After the awareness-raising campaign, the communities will gain an understanding of the benefits of forest conservation. Through the valuation and business planning of merchandisable, sustainable non-wood products, the communities will be prompted to engage in afforestation. Considering the area and current status of the tentative islands, around 16,000 ha can be better managed after the project implementation, and 630,000 ha area will have an FLR plan to guide further forest and landscape restoration activities.</p> <p>b) The diversification and introduction of eco-buffers in Component 2 will protect the crops from pest infestation and viruses.</p> <p>c) The mangrove plantations in exposed areas in Component 2 will protect coastal areas and control saltwater intrusion. The coastal flooding will decrease and the low-lying lands will be less exposed to primary salinization. As per the pre-identified areas, around 40 km coastal line across the islands, from which Efate, Espiritu-Santo and Aneityum communities take the largest share, as they live in low-lying areas exposed to salt spray and erosion.</p> <p>d) Climate smart and organic farming in Component 3 will help securing and increasing the yield, thus increasing the output per unit land. On the other hand, organic production practices will advocate environment-friendly and sustainable practices that do not compromise the yields. By achieving higher productivity, the agricultural land expansion will decrease.</p>
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**Social**

<p>a) The information systems keep operate separately without providing data to communities and context-tailored analysis. The planning mechanism is based on sparse and partial information, without involving all vertical stakeholders</p> <p>b) Women continue relying on household head and be marginalized in agricultural, without decision-making power. They have to seek sale points to sell marketable products but are limited to occasional and unorganized niche-markets. Their income remains low and uncertain.</p> <p>c) The traditional custom system remains under threat of land tenure disputes, land occupation and expropriation, the leased lands provide income only for semi-commercial and commercial farmers who produce to export markets. The cultural identity of indigenous peoples largely defined by the customary land rights is under permanent threat of infrastructure development.</p> <p>d) Youth remain exposed to be marginalized and dependent on heritage. They keep being unemployed due to the lack of formal employment and economy. They generate only secondary income and remain without access to capacity-building and specialized education.</p>	<p>a) The project will provide updated and integrated information about the islands in multiple sectors, involving climate, forest and landscape indicators, markets and commodities. Such information network can be extended to all islands to replicate good practices and support the planning mechanism.</p> <p>b) Women will be empowered by supporting their traditional marketing role in agriculture. Marketing organizations, building on women, will help overcome the market uncertainties and generate more income.</p> <p>c) The FLR approach will be integrated into the custom system without requiring restructuring of land tenure. The practices will be easy to replicate by other communities to extend the project benefits. The cultural heritage of indigenous peoples will be maintained, without an intervention into the tenure systems. The increased income from agriculture will elevate the revenue per unit land, thus preventing community members to tap on other lands.</p> <p>d) The Forest-to-Table initiative in Component 3 will provide an alternative income, skills of entrepreneurship, and an access to markets. The youth will be integrated into the supply chain. Together with the handicrafts as non-harvested wood products, youth will be able to contribute to the household income by annual 40-50,000 Vatu. Together with the capacity-building and potential replication of the activities, around 7,000 young community members can learn new concept.</p>
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### C. Cost-effectiveness of the proposed project

68. The cost-effectiveness involved a combined approach of the quantification of beneficiaries and benefits. The project will provide both increased cash income of communities and positive externalities of forestry. The valuation of ecosystem services is the strategic objective defined by the national CCDDRP, and the project will contribute to the generation of evidence-based practices.
69. The first component of mainstreaming FLR into national climate change and disaster risk management plans benefits the authorities through building capacities on planning risk management and increase preparedness. The update of geospatial portal with extended functions will be available to the entire population. The information will be available online, and through the extension services. Island-level FLR plans will be produced for the islands through participatory planning. This will benefit the entire population of the islands.
70. As for forestry activities, the communities currently make profit from timber products (whitewood, nangai, natapoa, sandalwood and mahogany). Depending on the species, the timber revenue ranges from 760,000 (Whitewood) to 4,000,000 (Sandalwood) Vatu per ha in 20 years. Households have around 10.4 ha land, of which around 50 percent is forest, while the rest of the lands are used for agriculture (crops and plantations). From a well-managed forest, a household can generate around 150-180,000 Vatu annual income in rotational harvesting. The project provides alternative income to timber products, which do not require capital investment but builds on existing forests. Only considering the handicrafts, young entrepreneurs reported from 38,000 to 77,000 Vatu per month income<sup>83</sup>. This proves that the annual income from handicrafts largely exceeds the revenue of timber products. Another potential non-wood forest product is the range of spices that can be sold at an average 450 Vatu per 100-gram price. An average bush garden and plot in agroforestry system of 200 m<sup>2</sup> size can produce around 40 kg of spices, providing around 180,000 Vatu per year. The organic spices of Vanuatu have international markets that can easily absorb the production. As the cost-benefit ratio of non-wood forest products can exceed the timber products, the proved financial viability of sustainable forest management can incentivize farmers to embark on the project-promoted activities. Moreover, the conserved forests provide a suite of ecosystem functions that help avoid the monetary losses caused by climatic hazards.
71. As for agroforestry activities, the only investment required is the purchase of seedlings. The project will introduce nurseries to allow communities to self-produce the seedlings, thus ensuring continuous supply. The investment in community-based nurseries is around 400,000 Vatu per a nursery with a capacity of 10,000 plant per annum. The capital cost also involves storm-resistant equipment, including cyclone wire for fence, thus ensuring the de-risking of the nurseries to withstand climate hazards. Considering the average 100 seedlings per ha density of agroforestry, one nursery can supply 100 ha per year, including the regeneration requirement of the nursery. The return of 100 ha agroforestry system can reach 1,500,000 Vatu per annum, benefiting 10 households. An investment with similar level of modern equipment and designed for 50,000 plant per annum costs around 1,000,000 Vatu per nursery, providing a five-fold income and benefitting 50 households (equivalent to 150 people). The return ratio of agroforestry is ranges from 1:3 to 1:6, which can be considered highly cost-effective.
72. When marketing is concerned, the timing and location of selling is decisive. Furthermore, the type of cash crops has a widely ranging prices. For instance, pumpkin can be sold only at 75 Vatu per kg, while Chinese cabbage has a double price of 140 Vatu per kg (Jones and Charlton, 2015), and kava price exceeds the 2,500 Vatu per kg, sold in local markets.

<sup>83</sup> Trupp (2018): Tourism and the role of crafts/souvenirs in Vanuatu and Solom Islands. 2018 Pacific Update Conference

However, the price fluctuates within the year, and farmers must plan to produce and merchandise their products in upward market conditions. In case of kava, an upward market trend will result in 1,000 per kg increase in farmgate prices. The project will support the market organization. While it does not require any structural measure, the capacity building of women on marketing will maximize the benefits.

73. An alternative intervention scenario A for coastal areas would be the sea walls for protection. Considered to implement the construction of sea walls and defenses to mitigate the effects of tropical cyclones and sea level rise, it will be less useful for landscape restoration and more expensive (a suitable coastal protection system over a stretch of about 10km is about 90 million USD). This scenario will not bring socio-economic benefits to communities (employment, increase in income, food security) and will not support biodiversity in the project areas. From an environmental standpoint, the wall scenario is also a failing one. Sea walls induce erosion and reduction of beach areas, which at natural state reduce gradually the energy of the waves. Sea walls have short life spans as the energy of broken waves falls onto the underwater slope accelerating the deformation of the walls (Pilkey & Cooper 2014), hence this scenario could be seen as cost-effective only short-term.
74. An alternative intervention scenario B for climate-resilient agricultural production would be the deployment of unheated greenhouses. While a greenhouse of only 200 m<sup>2</sup> would cost an estimated 288 600 Vatu, the greenhouse would require the establishment of irrigation system and a hard structure fence to withstand climate hazards. This would almost double the price of the greenhouse. Such greenhouse would benefit only 1 household, compared to the nurseries and agroforestry that could provide for 10 households from the same investment cost.
75. An alternative intervention scenario C would be the partial project execution with a greater focus on awareness-raising activities, but an initial analysis indicated that there is a risk of overlapping with other donors' projects, which are financing 'soft' interventions (policy and governance). From this point of view, the project of scenario C will be cheaper, but it will not address the main issues outlined in the analysis under part I as it will not provide the necessary infrastructure (forests with reinforced adaptation function and nurseries) or the necessary tangible demonstrations rather than mere awareness campaigns. For development to be sustainable, it is necessary to focus not only on informing the local communities but also on practical - environmentally beneficial - actions for agriculture, since the welfare of the subsistence-driven farmers depends on the efficiency of the agricultural sector.
76. Finally, the cost-effectiveness of the project is also ensured by its management and coordination approach. The project will cooperate with existing local community stakeholders, such as local organizations and community members as the main project implementing partners in the field. In this context, the project will entail comparatively lower costs. This will help to lower spending while anchoring the project within communities, thereby safeguarding the project's ownership and sustainability. It will also ensure that the majority of resources will go straight to the beneficiaries.
77. Altogether, the project aims to be cost-effective by:
  - Efficient project operations in climate change adaptation and FLR practices and avoidance/significant reduction of future costs associated with damage, loss from natural disasters.
  - Maintenance of the solution as the intervention is: (a) environmentally friendly and nature-based, (b) needs a rather low capital investment and operating expenses, (c) provide socio-economic benefits, and (d) features a long lifespan.
  - Local community involvement at every stage of the project, which makes the project cheaper, combines local knowledge with modern methods, and provides employment together with ownership of the intervention.
  - Selecting the suitable variant based on cost, feasibility and resilience/sustainability criteria (assessment will be done at every stage of the project).

#### **D. Consistency with national or sub-national sustainable development strategies**

78. Project alignment with government priorities: Vanuatu ratified the United Nations Framework Convention on Climate Change in March 25, 1993, acceded to the Kyoto Protocol in 2001 and ratified the Paris Agreement on Climate Change on September 21<sup>st</sup> 2016. The country submitted three national communications to the United Nations Framework Convention on Climate Change in 1999, 2014 and 2020. Vanuatu has submitted the currently active NDC (Nationally Determined Contribution) in 2020. The project exhibits full alignment with NDC 2020 (Specifically Target Ag 2: for Component 2 and Component 3). For project alignment three documents were used: Vanuatu's First Nationally Determined Contribution (NDC) (Updated Submission 2020) and Enhancing and Fast-tracking Implementation of Vanuatu's Nationally Determined Contribution (2020), Third National Communication to UNFCCC. Agriculture Sector Policy is also a key document for the agri-environmental sector and the proposed project's thematic area. The proposed components also exhibit alignment with Climate Change and DRR policy 2016-2030, National Climate Change Adaptation Strategy 2012-2022, Vanuatu Forest and Landscape Restoration Strategy 2020-2030, National Biodiversity Strategy and Action Plan 2018-2030, Vanuatu National Environment Policy and Implementation Plan 2016–2030. Finally, in relation to the Sustainable Development Goals the proposed project is expected to contribute to Goals: 1 (no poverty), 2 (zero hunger), 3 (good health and well-

being), 5 (gender equality), 8 (decent work and economic growth), 10 (reduced inequalities), 13 (climate change) and 15 (life on land).

**Table 5:** Project proposal alignment with selected national and sub-national priorities (Output level)

Nationally determined contribution (2020)
<p>Component 1 aligns with National Sustainable Development Goals (NSDP): Environment (ENV) 4. Climate and Disaster Resilience. The following project activities of component 1 are aligned with the document: 1.1.1., 1.1.2., 1.1.3., 1.1.4, 1.1.5.</p> <p>Vanuatu's strategic climate change priorities and actions: Knowledge and Information, Climate change adaptation, Information and data, Gender equality and inclusion of other vulnerable groups.</p> <p>Target Ag2: By 2030, 100 percent of identified measures for enhancing the resilience of subsistence agriculture in a changing climate in the six provinces have been implemented.</p> <p>Indicator Ag2.1: Climate vulnerabilities of subsistence agriculture for all six provinces mapped, using GIS as well as human rights based, gender-sensitive and socially inclusive approaches and methods of assessment. [ENV 1.1.2; ENV 1.1.3; ENV 1.4.3].</p> <p>Indicator Ag2.5: Institutional and governance related measures to subsistence agriculture in the six provinces identified and implemented (community decision-making, planning and action related to supporting agriculture SMEs at community, area, province level.</p> <p>Component 2 aligns with National Sustainable Development Goals (NSDP): Environment (ENV) 3–Climate and disaster resilience; Environment (ENV) 4 – Natural resource Management. The following project activities of component 2 are aligned: 2.1.1., 2.1.2., 2.1.3., 2.1.4.</p> <p>Vanuatu's strategic climate change priorities and actions: Climate change adaptation, Response to climate change, Capacity-building, Gender equality and inclusion of other vulnerable groups.</p> <p>Target Ag2: By 2030, 100 percent of identified measures for enhancing the resilience of subsistence agriculture in a changing climate in the six provinces have been implemented.</p> <p>Indicator Ag2.2: Natural resource related measures to strengthen subsistence agriculture in the six provinces identified and implemented (e.g. soil and land quality and access) [SOC 1.7.2].</p> <p>Indicator Ag1.4: Skills and training related measures to strengthen agriculture SMEs and private sector operators in the six provinces identified and implemented (e.g. climate and disaster resilient cropping training, produce market, value chain production, etc.) [ENV 1.4.2; ENV 1.5.1].</p> <p>Indicator Ag2.4: Skills and training related measures to strengthen subsistence agriculture in the six provinces identified and implemented (e.g. climate and disaster resilient cropping training, number of farms and/or level of crop harvest per farmer in normal and stress times).</p> <p>Component 3 aligns with National Sustainable Development Goals (NSDP): Environment (ENV) 4 – Natural resource Management. The following project activities of component 3 are aligned: 3.1.1., 3.1.2., 3.2.1., 3.2.2., 3.2.3., 3.2.4., 3.2.5.</p> <p>Vanuatu's strategic climate change priorities and actions: Climate change adaptation, Response to climate change, Capacity-building, Gender equality and inclusion of other vulnerable groups, Increase farmers' access to improved planting materials, Enhance farming through appropriate information and support; Increase production and quality through good agricultural practices, Introduce incentives for private sector engagement in agro-processing and value adding at all levels of the value chain; Enhance trade and marketing of agricultural products in the domestic and export markets.</p> <p>Target Ag1: By 2022, 80 percent of agriculture SMEs and private sector operators are able to generate sufficient income to cover essential household needs and services in normal and climate, disaster and environmentally stressed times.</p> <p>Indicator Ag1.2: Natural resource related measures to strengthen agriculture SMEs and private sector operators in the six provinces identified and implemented (e.g. soil and land quality and access, stocks of climate resilience seedlings) [SOC 1.7.2].</p> <p>Target Ag2: By 2030, 100 percent of identified measures for enhancing the resilience of subsistence agriculture in a changing climate in the six provinces have been implemented.</p> <p>Indicator Ag2.2: Natural resource related measures to strengthen subsistence agriculture in the six provinces identified and implemented (e.g. soil and land quality and access) [SOC 1.7.2].</p>
3rd National Communication to UNFCCC
<p>Key government departments such as the Vanuatu Meteorology and Geo-hazards Department (VMGD) undertake climate change awareness programmes (generally relative to climate science and climate variability) using a number of dissemination means to schools and other climate dependent sectors e.g. agriculture, water, infrastructure and tourism. The key issues, barriers and opportunities are summarized as the following: The capacity building and public awareness program and activities need to be focused and relevant in the local context. Efforts should be focused on making reliable, accurate and palatable climate change information available to a wider audience. The following project activities of components 1 and 2 are aligned: 1.1.1., 1.1.2., 1.1.3., 1.1.4, 1.1.5, 2.1.1., 2.1.2., 2.1.3., 2.1.4.</p>
Agriculture Sector Policy 2015 – 2030
<p>Component 1 aligns with Thematic Area: Extension and Training. Specific Objectives: Qualified and competent agriculture workforce; Widespread coverage of agriculture information, Disaster and climate resilient agriculture; Sector policies and legislation. The following project activities of component 1 are aligned with the document: 1.1.1., 1.1.2., 1.1.3., 1.1.4, 1.1.5</p> <p>Policy objective 1.1.2 Develop appropriate agriculture training syllabus and modules based on the needs of the sector. Policy directives:</p> <p>2.1 Train all workforces in the agriculture sector</p> <p>2.1.7 Increase the participation through the conduction of gender-based trainings for women, youths and vulnerable groups</p> <p>Policy objective 13.1 Mainstream gender and support women, youths and vulnerable groups in all agriculture initiatives:</p> <p>4.1 Develop and implement land use policies and plans</p> <p>4.1.1 Review and enforce the existing National Land Use Planning Policy and other land use policies and implement existing plan</p> <p>13.1.1. Encourage and engage participation of women, youths and vulnerable groups in all agriculture practices</p> <p>Component 2 aligns with Thematic Area: 4. Agriculture Land Use. Specific Objective: Vanuatu agriculture land appropriately allocated according to land use policy.</p> <p>Thematic Area: 2. Extension and Training: Qualified and competent agriculture workforce, Widespread coverage of agriculture information.</p> <p>Thematic Areas: Climate Variability, Climate Change and Disaster Risk Reduction, Disaster and climate resilient agriculture. The following project activities of component 2 are aligned with the document: 2.1.1., 2.1.2., 2.1.3., 2.1.4. Policy directives:</p> <p>2.1 Train all workforces in the agriculture sector</p> <p>2.1.1 Develop appropriate agriculture training syllabus and modules based on the needs of the sector.</p> <p>8.1 Mainstream environmental considerations into agriculture practices: apply environmental considerations such as buffer zones, develop and implement environmental guidelines taking into account sustainable agriculture practices</p> <p>8.2.2 Promote site-appropriate soil improvement technologies e.g. agro-forestry, alley cropping, intercropping, contour farming, composting and cover crops in all agriculture practices</p> <p>8.2.3 Practice sustainable farming (Farmers, Industries)</p> <p>8.2.4. Promote Good Agriculture Practices (GAP) taking into account sound traditional practices</p> <p>Policy directives and strategies 9.1 Increase production of agricultural produce and products through</p>

**13.1.1. Encourage and engage participation of women, youths and vulnerable groups in all agriculture practices**

Component 3 aligns with Thematic area 9. Production and Market Access.  
Specific objectives 9: Stakeholders' income and revenue base increased, Sufficient and surplus agriculture outputs. The following project activities of component 3 are aligned with the document: 3.1.1., 3.1.2., 3.2.1., 3.2.2., 3.2.3., 3.2.4., 3.2.5. Policy objectives:  
9.1. Specific objective: Agricultural seeds, planting materials and inputs readily available and accessible.  
Policy directives:  
8.2 Incorporate sustainable farming practices such as agro-forestry and soil improvement technologies in all agriculture practice;  
8.2.2 Promote site-appropriate soil improvement technologies e.g. agro-forestry, alley cropping, intercropping, contour farming, composting and cover crops in all agriculture practices.  
9.4 Increase marketing of agricultural produce and products  
9.4.1 Increase marketing of agriculture products to increase stakeholder income based on specific markets  
9.4.2 Produce and trade economically viable agriculture produce and products to increase income base of rural communities  
9.4.3 Competitively position agriculture produce and products locally and globally  
9.4.4 Create a market information system to provide market access information to stakeholders  
12.1 Mainstream climate variability, climate change and disaster risk reduction using adaptation and mitigation strategies in all agriculture initiatives and developments  
12.1.11 Strengthen traditional and self-reliant agricultural systems through development and implementation of programmes with components that encourage growing traditional climate-resilient staple crops such as sweet potato, taro, banana, yam, cassava and trees and animals  
13.1 Mainstream gender and support women, youths and vulnerable groups in all agriculture initiatives  
13.1.1 Encourage and engage participation of women, youths and vulnerable groups in all agriculture practices.

**Climate Change and DRR policy 2016-2030**

Component 1 aligns with purposes of Climate Change and DRR policy: provide the framework for mainstreaming climate change and disaster risk reduction into sustainable development processes; improve coordination and planning of programmes, projects and funding across ministries, departments, development; partners, academia, civil society organizations (CSOs) and the private sector. The following project activities of component 1 are aligned with the document: 1.1.1., 1.1.2., 1.1.3., 1.1.4,1.1.5.  
Actions: developing and building capacity in the use of risk assessment tools, such as geographic information; strengthening faith-based governance systems to implement climate change and disaster risk reduction activities via multi-stakeholder collaboration; developing tools for community development planning, which includes climate change and disaster reliance considerations; undertaking training on climate change and disaster monitoring and evaluation with relevant officers within the government and other agencies; building on all hazard warning services to improve community access to timely and accurate warnings.

Component 2 aligns with principles of CC and DRR actions:

- conducting targeted training with government agencies, provincial and area council officers, CSOs and stakeholders
  - prioritizing "soft" ecosystem-based adaptation over "hard" engineered infrastructure for ecosystem
  - building on all hazard warning services to improve community access to timely and accurate warnings
  - improving community awareness by expanding guides and tools for community awareness activities that are focused on the local level.
- The following project activities of component 2 are aligned with the document: 2.1.1., 2.1.2., 2.1.3., 2.1.4

Component 3 aligns with principles of CC and DRR policy:

- Equity – providing opportunities for meaningful participation by all groups in society, including women, youth, the elderly, people with disabilities, remote communities; valuing traditional practices; and engaging with all levels of government, industry sectors, development partners, donors, academia, regional and international bodies
  - Innovation – enabling dynamic systems that are science and evidence based, adaptable to changing situations
  - incorporating traditional knowledge and practice, emerging trends, technological advances and local contexts
- Actions: striving to follow sustainable consumption and production patterns.  
The following project activities of component 3 are aligned with the document: 3.1.1., 3.1.2., 3.2.1., 3.2.2., 3.2.3., 3.2.4., 3.2.5.

**National Climate Change Adaptation Strategy (NCCAS) 2012-2022**

Component 1 aligns with NCCAS following objectives:

- Identify and analyze climate risks based on the most recent climate change projections for Vanuatu and assess how the anticipated changes will impact on Vanuatu's land-based resource sectors;
  - Provide a comprehensive list of Vanuatu specific, appropriate and prioritized adaptation strategies and actions at all levels (based on the analysis above and taking into account social, equity, institutional, policy, technical, environmental, economic, financial, gender and other relevant considerations)
  - Link and coordinate Vanuatu efforts in CCA, DRR and DRM
  - Foster strategic coordination, including an exchange of information, experience and tools, thus considerably contribute to improving the sustainability of development processes.
- The following project activities of component 1 are aligned with the document: 1.1.1., 1.1.2., 1.1.3., 1.1.4, 1.1.5

Component 2 aligns with NCCAS following objectives:

- Provide a comprehensive list of Vanuatu specific, appropriate and prioritized adaptation actions at all levels (based on the analysis above and taking into account social, equity, institutional, policy, technical, environmental, economic, financial, gender and other relevant considerations)
  - Link and coordinate Vanuatu efforts in CCA, DRR and DRM. Foster strategic coordination, including an exchange of information, experience and tools, thus considerably contribute to improving the sustainability of development processes
  - Encourage the continued development and application of targeted public outreach measures to increase knowledge and awareness among all people of Vanuatu about the risks posed by climate change, and provide guidance on how incorporate this knowledge into their planning and decision making
- Actions identified in the NCCAS should be based on the best available traditional and scientific knowledge of climate change impacts, threats, vulnerabilities and adaptive measures. Adaption strategy specific:  
• Grow crops in protected nurseries  
• Establish conserved buffer and a creek rehabilitation zones  
The following project activities of component 2 are aligned with the document: 2.1.1., 2.1.2., 2.1.3., 2.1.4

Actions identified in the NCCAS should be based on the best available traditional and scientific knowledge of climate change impacts, threats, vulnerabilities and adaptive measures. Adaption strategy specific suggests growing crops in protected nurseries. The following project activities of component 3 are aligned with the document: 3.1.1., 3.1.2., 3.2.1., 3.2.2., 3.2.3., 3.2.4., 3.2.5.

**Forest and Landscape restoration strategy (FLRS) 2020-2030**

<p>Specifically, the Strategy, in line with the project Component 1, will seek to contribute to climate change mitigation and adaptation. The following project activities of component 1 are aligned with the document: 1.1.1., 1.1.2., 1.1.3., 1.1.4.,1.1.5.</p> <p>The project's outputs coincide with FLRS 2020-2039 outputs: 1.2 FLR supportive policies are strengthened. 2.1 FLR plans are developed by and with communities/ interest groups and key stakeholders</p>
<p>Specifically, the Strategy and Component 2 will seek to:</p> <ul style="list-style-type: none"> <li>• control soil erosion coastal areas</li> <li>• reduce pressure on the natural forests and the vital services they provide</li> <li>• revitalize the landscape so that it can meet the needs of people and the natural environment</li> </ul> <p>The project's outputs coincide with FLRS 2020-2039 outputs: 2.2 Nurseries, public and private, are developed, in which the quality of planting material is improved 6.3 Awareness is raised on FLR importance and success at country level.</p> <p>The following project activities of component 2 are aligned with the document: 2.1.1., 2.1.2., 2.1.3., 2.1.4.</p>
<p>Specifically, the Strategy and Component 3 will seek to:</p> <ul style="list-style-type: none"> <li>• address the socioeconomic needs of forest dwellers and forest dependent communities</li> <li>• reduce pressure on the natural forests and the vital services they provide</li> <li>• contribute to climate change mitigation and adaptation</li> </ul> <p>The project's outputs coincide with FLRS 2020-2039 outputs: 2.5 Agroforestry options are up-scaled as an efficient income generation FLR option. 4.3 Sustainable agriculture technics are promoted and sustainable value chain are developed in the six provinces.</p> <p>The Forest Landscape Restoration Strategy like the project is expected to achieve the following results: Livelihoods and welfare of Vanuatu are improved. The following project activities of component 3 are aligned with the document: 3.1.1., 3.1.2., 3.2.1., 3.2.2., 3.2.3., 3.2.4., 3.2.5.</p>
<p><b>National Biodiversity Strategy and Action Plan (NBSAP) 2018-2030</b></p>
<p>Focus area: Coastal and Marine Ecosystems (CME) 1: Reduce major threats to Vanuatu's coastal and marine ecosystems such reclamation, natural disaster impacts, climate change impacts. CME 1.2 Identify root causes of major threats to coastal and marine ecosystems at local and national level. Focal area 3: Design and Facilitate National Implemented Forest. Forest and Inland Waters (FIW) 3.1: National Forest Landscape Restoration plans, and strategies developed with wide stakeholder consultation at island, provincial and local levels based on land tenure systems. The following project activities of component 1 are aligned with the document: 1.1.1., 1.1.2., 1.1.3., 1.1.4.,1.1.5</p>
<p>Focus area CME1: Reduce major threats to Vanuatu's coastal and marine ecosystems such reclamation, natural disaster impacts, climate change impacts. SM1.16 Conservation of Tanna region. Focus area 3: Design and facilitate a nationally implemented forest landscape restoration (FLR) project in Vanuatu. FIW F3.2 Soil fertility is improved through the establishing improvement nurseries that are established and functioning at community level. Action Plans to Address Threats: to set water buffer zones. The following project activities of component 2 are aligned with the document: 2.1.1., 2.1.2., 2.1.3., 2.1.4</p>
<p>Focus area 3: Design and facilitate a nationally implemented forest landscape restoration (FLR) project in Vanuatu. FIW3.2 Soil fertility is improved through the establishing improvement nurseries that are established and functioning at community level. FIW3.3 An increase in subsistence or commercial agricultural activities is recorded in areas when soil fertility has been improved and income from crops are assisting local livelihoods and food security. Focal area 3: Design and Facilitate National Implemented Forest Landscape Restoration (FLR) Project in Vanuatu. Objective FIW3: To reverse trends in deforestation, enhance land degradation neutrality and improve biodiversity through improved policy support and governance framework, knowledge management and by implementing a strategic forest landscape restoration project to enable long term ecological recovery and increased economic benefits for all forest stakeholders. Specific activities: Encourage best agricultural practices such as agroforestry to address soil fertility. The following project activities of component 3 are aligned with the document: 3.1.1., 3.1.2., 3.2.1., 3.2.2., 3.2.3., 3.2.4., 3.2.5</p>
<p><b>National Environment Policy and Implementation Plan (NEPIP) 2016–2030</b></p>
<p>Component 1 aligns with policy objectives (PO). PO 4.2: Mainstream climate and disaster risk into policies, strategies, budgets and planning at all levels. The following project activities of component 1 are aligned with the document: 1.1.1., .1.2., 1.1.3., 1.1.4, 1.1.5</p>
<p>Establish community nurseries. Undertake awareness and training activities on rehabilitation of coastal forest planted zones. The following project activities of component 2 are aligned with the document: 2.1.1.,2.1.2., 2.1.3., 2.1.4</p>
<p>PO 1.7: Promote appropriate modern technology to benefit conservation practices. PO 5.2: Build capacity and support local communities to manage natural resources. The following project activities of component 3 are aligned with the document: 3.1.1., .1.2., 3.2.1., .2.2., 3.2.3., .2.4., 3.2.5.</p>
<p><b>Tafea and Sama Provincial Disaster Response and Climate Change Management Plan</b></p>
<p>Priority needs of Tafea DRCCM Plan: Food security and livelihood: 1) awareness and education, planting materials, strings/hooks, seedlings (best case); 2) local food, vegetable seeds, forestry seedlings, planting tools, livestock tools, transports, food conservation (likely case); 3) food conservation, agriculture inputs, fishery inputs, forestry inputs, livestock inputs, transport/fuel Priority needs of Sanma DRCCM Plan: Food security and livelihood: 1) food need for the part of the community (best-case); 2) need planting material, need animal to restart livestock, food supply by area council, small business The following project activities of components 2 and 3 are aligned with the document: 2.1.1., 2.1.2., 2.1.3., 2.1.4.,3.1.1., 3.1.2., 3.2.1., 3.2.2., 3.2.3., 3.2.4., 3.2.5.</p>

## E. Relevant national technical standards and complies with the Environmental and Social Policy of the Adaptation Fund

79. Implementation of this project will be governed by several national guidelines, policies and regulations. Environmental and sustainable development provisions emanate from the Constitution of Vanuatu, PART II: Fundamental Duties 7 “to

safeguard the national wealth, resources and environment in the interests of the present generation and of future generations”. Further elaboration on the compliance with national technical standards, Environmental and Social Policy of the Adaptation Fund and Environmental and Social Standards of FAO will be provided in the full proposal.

**Table 6: Compliance with national technical standards, rules, regulations and procedures, and ESP principles**

Output	AF ESP	Relevant Rules, Regulations, Standards and Procedures	Compliance procedure and authorizing offices
1.1.1.	1, 2, 4, 5, 13	Disaster Risk Management Act No. 23 of 2019 Environmental Management and Conservation Act (Amendment) No. 28 of 2010 Environmental Protection and Conservation (Amendment) Act 2019 Meteorology, Geological Hazards and Climate Change Act No.25 2016	Ministry of Meteorology, Geological Hazards and Climate Change, Department of Environmental Protection and Conservation (DEPC), Municipal Disaster and Climate Change Committee, Vanuatu Meteorology and Geo-Hazards Department (VMGD), Climate Change and Disaster Risk Reduction Division, National Advisory Board, Provincial Disaster and Climate Change Committee. Biodiversity Advisory Council.
1.1.2.	1, 3, 11, 13	Disaster Risk Management Act No. 23 of 2019. Environmental Management and Conservation Act (Amendment) No. 28 of 2010 Agriculture Act No. 17 of 2018 Environmental Protection and Conservation (Amendment) Act 2019 Foreshore Development (Amendment) Act No. 11 of 2019	Ministry of Meteorology, Geological Hazards and Climate Change. Municipal Disaster and Climate Change Committee, VMGD, Climate Change and Disaster Risk Reduction Division, National Advisory Board, Provincial Disaster and Climate Change Committee. Biodiversity Advisory Council, Ministry for Agriculture, Livestock, DEPC, Fisheries and Biosecurity, Ministry of Land and Natural resources, local or municipal councils.
1.1.3.	1, 3, 6, 9, 10.	Planted Forest Act No. 7 of 2015 Public Finance and Economic Management (Amendment) Act No 45. Forestry Act 26 (Cap. 276) 2006 [2001]	Ministry for Agriculture, Livestock, Forestry, Fisheries and Biosecurity, Ministry of Land and Natural resources, local or municipal councils, Ministry of Finance and Economic Management.
1.1.4.	1,3, 6, 10,	Disaster Risk Management Act No. 23 of 2019, Meteorology, Geological Hazards and Climate Change Act No.25 2016 Planted Forest Act No. 7 of 2015, Disaster Risk Management Act No. 23 of 2019 Forestry Act 26 (Cap. 276) 2006 [2001]	Ministry of Meteorology, Geological Hazards and Climate Change, Municipal Disaster and Climate Change Committee, Ministry for Agriculture, Livestock, Forestry, Fisheries and Biosecurity, Ministry of Land and Natural resources.
1.1.5.	1, 2, 4, 5, 6, 13.	Disaster Risk Management Act No. 23 of 2019 Meteorology, Geological Hazards and Climate Change Act No.25 2016 Environmental Management and Conservation Act (Amendment) No. 28 of 2010 Environmental Protection and Conservation Act 2019	Ministry of Meteorology, Geological Hazards and Climate Change, Vanuatu Meteorology and VMGD, Climate Change and Disaster Risk Reduction Division, DEPC, Municipal Disaster and Climate Change Committee, National Advisory Board, Provincial Disaster and Climate Change Committee, Biodiversity Advisory Council.
2.1.1.	1, 3, 5, 6, 8, 9, 10, 11, 12, 13, 14.	Disaster Risk Management Act No. 23 of 2019 Environmental Management and Conservation Act (Amendment) No. 28 of 2010 Agriculture Act No. 17 of 2018 Environmental Protection and Conservation (Amendment) Act 2019 Foreshore Development (Amendment) Act No. 11 of 2019 National Building Code (2000) Forestry Act 26 (Cap. 276) 2006 [2001] Customary Land Management Act No 33 (2013) Physical Planning Act (Fees For Application) (Cap. 193). 2006	Ministry of Meteorology, Geological Hazards and Climate Change, VMGD, Climate Change and Disaster Risk Reduction Division, Municipal Disaster and Climate Change Committee, National Advisory Board, Provincial Disaster and Climate Change Committee, Biodiversity Advisory Council, Ministry for Agriculture, Livestock, Forestry, Fisheries and Biosecurity, Ministry of Land and Natural resources, DEPC, Shefa Provincial Council, Customary Land Management Office, Public Works Department (PWD), Department of Agriculture and Rural Development (DARD), local or municipal councils.
2.1.2.	1, 3, 5, 6, 8, 9, 10, 11, 12, 13, 14.	Disaster Risk Management Act No. 23 of 2019 Environmental Management and Conservation Act (Amendment) No. 28 of 2010 Environmental Protection and Conservation (Amendment) Act 2019 Foreshore Development (Amendment) Act No. 11 of 2019 Planted Forest Act No. 7 of 2015 Customary Land Management Act No 33 (2013), Physical Planning Act (Fees For Application) Cap. 193). 2006	Ministry of Meteorology, Geological Hazards and Climate Change, Municipal Disaster and Climate Change Committee, National Advisory Board, Provincial Disaster and Climate Change Committee, VMGD, Climate Change and Disaster Risk Reduction Division, Biodiversity Advisory Council, Ministry for Agriculture, Livestock, Forestry, Fisheries and Biosecurity, DEPC, Shefa Provincial Council, Ministry of Land and Natural resources, Public Works Department (PWD), Department of Agriculture and Rural Development (DARD), local or municipal councils
2.1.3.	1, 2, 3, 4, 5, 9, 10, 13.	Disaster Risk Management Act No. 23 of 2019 Environmental Management and Conservation Act (Amendment) No. 28 of 2010 Environmental Protection and Conservation (Amendment) Act 2019 Meteorology, Geological Hazards and Climate Change Act No.25 2016	Ministry of Meteorology, Geological Hazards and Climate Change, Municipal Disaster and Climate Change Committee, VMGD, Climate Change and Disaster Risk Reduction Division, National Advisory Board, Provincial Disaster and Climate Change Committee, DEPC, Biodiversity Advisory Council, local or municipal councils.
2.1.4.	1, 2, 3,4, 5,6.	Environmental Protection and Conservation (Amendment) Act 2019 Agriculture Act No. 17 of 2018,	Ministry for Agriculture, Livestock, Forestry, Fisheries and Biosecurity, Ministry of Land and Natural resources, local or municipal councils, DEPC.

3.1.1.	1, 2, 3, 5, 6, 8, 11, 12, 14.	Disaster Risk Management Act No. 23 of 2019 Environmental Management and Conservation Act (Amendment) No. 28 of 2010 Agriculture Act No. 17 of 2018 Environmental Protection and Conservation (Amendment) Act 2019 Planted Forest Act No. 7 of 2015.	Ministry of Meteorology, Geological Hazards and Climate Change, VMGD, Climate Change and Disaster Risk Reduction Division, Municipal Disaster and Climate Change Committee, National Advisory Board, Provincial Disaster and Climate Change Committee, Biodiversity Advisory Council, Ministry for Agriculture, Livestock, Forestry, Fisheries and Biosecurity, Ministry of Land and Natural resources, DEPC, DARD, local or municipal councils.
3.1.2.	1, 3, 11, 12.	Disaster Risk Management Act No. 23 of 2019 Environmental Management and Conservation Act (Amendment) No. 28 of 2010 Environmental Protection and Conservation (Amendment) Act 2019 Forestry Act 26 (Cap. 276) 2006 [2001] Planted Forest Act No. 7 of 2015.	Ministry of Meteorology, Geological Hazards and Climate Change, VMGD, Climate Change and Disaster Risk Reduction Division, DEPC, Municipal Disaster and Climate Change Committee, National Advisory Board, Provincial Disaster and Climate Change Committee, Biodiversity Advisory Council, Ministry for Agriculture, Livestock, Forestry, Fisheries and Biosecurity, DARD, Ministry of Land and Natural resources.
3.2.1.	1, 2, 3, 6, 8, 11, 12, 13, 14.	Disaster Risk Management Act No. 23 of 2019 Environmental Management and Conservation Act (Amendment) No. 28 of 2010 Agriculture Act No. 17 of 2018 Environmental Protection and Conservation (Amendment) Act 2019 Foreshore Development (Amendment) Act No. 11 of 2019	Ministry of Meteorology, Geological Hazards and Climate Change, VMGD, Climate Change and Disaster Risk Reduction Division, Municipal Disaster and Climate Change Committee, National Advisory Board, Provincial Disaster and Climate Change Committee, Biodiversity Advisory Council, Ministry for Agriculture, Livestock, Forestry, Fisheries and Biosecurity, Ministry of Land and Natural resources, Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business, DEPC, DARD, local or municipal councils.
3.2.2.	1, 2, 3, 4, 5, 6.	Public Finance and Economic Management (Amendment) Act No 45	Ministry of Finance and Economic Management, Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business.
3.2.3.	1, 2, 3, 4, 5, 6, 12, 15	Agriculture Act No. 17 of 2018 Planted Forest Act No. 7 of 2015.	Ministry for Agriculture, Livestock, Forestry, Fisheries and Biosecurity, Ministry of Land and Natural resources, DARD, Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business.
3.2.4.	1, 2, 3, 5, 6.	Public Finance and Economic Management (Amendment) Act No 45	Ministry of Finance and Economic Management, Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business.
3.2.5.	1, 2, 3, 4, 5, 6.	Public Finance and Economic Management (Amendment) Act No 45	Ministry of Finance and Economic Management, Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business.

## F. Duplication of project / programme with other funding sources

80. Vanuatu is a country with many climate change and DRM related projects and initiatives. The proposed concept, due to its technical nature, will be able to optimize results through synergies with other projects and also avoid duplication. The proposed project will build on, augment and contribute to the results of other projects listed below and also collect and utilize their lessons learned. Initial screening for potential overlaps has not indicated any issue between existing projects and the proposed one in technical, spatial, and/or temporal dimensions. Within the framework of proposal development and consultations, a dialogue with all platforms will be further organized to ensure best alignment and screen for more parallel projects at regional and global level. The strong coordination with on-going and pipeline projects will be established to support the project design and implementation through learning from experiences, building on existing results and strengthening the knowledge management process, but the project framework to achieve its objective does not require co-financing.

**Table 7:** Identified projects and programmes

Relevant Projects/ Programme	Description of the project/programme	Goals and Achievements (within/ after the relevant project/program)	Complementary potential and non - duplication	Project Timeline and Budget
GEF 5/ UNDP <a href="#">Project</a> "Adaptation to Climate Change in the Coastal Zone in Vanuatu"	The project explicitly addresses three of eleven priorities identified in the NAPA (National Adaption Programme of Action) including: community-based marine resource management, integrated coastal zone management and mainstreaming climate change into policy and national planning processes.	The installation of Integrated Weather Forecasting System (IWFS) at the VMGD has upgraded the quality of the meteorological forecasting available to all the people of Vanuatu. The installed Automatic Weather Stations (AWS) at 6 provincial sites which link to the main server installed at the Vanuatu Meteorology and Geo-Hazard Department, including the installed Integrated Weather Forecasting System (IWFS) high quality data are stored in the servers at the department as well as in the 6 sites at the provinces and are available to all the people of Vanuatu to access.	The GEF Project is addressing CC through different angles. It focuses on infrastructure maintenance (roads, bridges, etc.), improvement. The GEF project includes improvement of information and early warning systems to prevent climate hazards. Under Component 2, automated weather stations are already installed, and a EWS system is established. Integrated Weather Forecasting System (IWFS) at the Vanuatu Meteorology and Geo-Hazard Department, and Automatic Weather Station (AWS) at the 6 provinces throughout the country are developed. This information system will directly feed into the Component 1. To investigate the direct modalities of using the generated data, consultation with UNDP and stakeholders will be conducted at the stage of full proposal design.	2014 – ongoing Budget: 8,030,000 USD



GEF7/UNDP <a href="#">Project</a> "Adaptation to Climate Change in the Coastal Zone in Vanuatu – Phase II (VCAP II)"	The project improves the resilience of the vulnerable areas and communities therein to the impacts of climate change through integrated approaches in order to sustain livelihoods, food production and preserve and improve the quality of life by building on the lessons learned from the first phase project.	The project started in June 2021. It will focus on improved resilience through climate proofing of selected public conveyance infrastructure and evacuation facilities in the coastal zone. Automated systems for real time monitoring of climate-related hazards such as coastal flooding, storm surges, sea level rise will be designed.	The GEF Project focuses on rehabilitation of important coastal ecosystems and resources and their biodiversity such as mangroves, coral reefs, fisheries, improving the work of VMGD staff and timely warnings about coastal natural hazards. There is no duplication with this project, because the proposed AF project will focus mainly on inland restoration, and the coastal area interventions are geographically not overlapping. The GEF project's activities will inform the design of the full proposal.	2021 – ongoing Budget: 12,544,037 USD
GEF 6/FAO <a href="#">Project</a> "Ecosystem Restoration and Sustainable Land Management in Tongoa Island"	The project aims to effectively restore degraded landscape and implement climate-resilient sustainable land management Practices in Tongoa Island.	The project will improve management of landscape and hand climate smart agriculture in 400 ha.	The project is similar to the AF project in its objectives and thematic topics (sustainable land management and restoration plan, training programme on climate smart agriculture practices, agroforestry and forest restoration). However, the project is geographically not overlapping, because all these activities are on Tongoa Island. The AF project can draw from the lessons learnt and good practices of the GEF project. The full proposal development and the project implementation will ensure a strong coordination with the GEF project to ensure that key experiences are exchanged and leveraged.	2021-ongoing Budget: 867,580 USD
GEF 6/IUCN <a href="#">Project</a> Expanding Conservation Areas Reach and Effectiveness (ECARE) in Vanuatu	The project focuses on sustainable land management in production systems (agriculture, rangelands, forest landscapes) and chemical pollution, protection of marine ecosystems.	The project goal aims to improve management of landscapes and seascapes.	The GEF project focuses on protected areas and biodiversity conservation. There is no thematic overlapping, as the AF project does not involve protected areas. Although it promotes natural resource conservation, the AF project sets the scope on sustainable agriculture and non-harvested forest products, which are not the subject of the GEF project.	2017 – Pipeline (Concept Note stage) Budget: 2,450,459 USD
GEF 5/FAO <a href="#">Project</a> R2R: Integrated Sustainable Land and Coastal Management - Vanuatu	The overall goal is to test and implement sustainable and integrated management of forest, land and marine resources to achieve effective ridge-to-reef (R2R) conservation in selected priority watersheds in Vanuatu.	The project aims to create enabling environment by mainstreaming integrated R2R approaches into agriculture, livestock, tourism, fisheries and environment policies. It also includes the integration of landscape elements, focal area activities and sector priorities with an overall landscape perspective. The project involves knowledge management related activities to disseminate the lessons learnt.	The FAO-implemented GEF project focuses on the protection and conservation of watersheds through R2R approach. It involved the development of protected areas and marine protected areas to conserve water resources and marine life. The GEF project scope is set on watershed, coastal area and marine resources, while the AF project is framed into the FLR approach outside of the protected areas and around and in agricultural areas. Some activities of the GEF project were implemented as pilot field activities, namely the sustainable farming and agroforestry, and identification of non-harvested forest products, provide an evidence-based practice for this project, and the acquired experiences and lessons learnt of the pilot results will be scaled out in the AF project, in Component 2 and 3. As the GEF project will close before the expected start of the AF project, the full proposal development can take advantage of the relevant results. The full proposal will describe how the AF project will leverage the pilot activities' results, and a strong coordination with the FAO team will be ensured throughout the implementation.	2016 – closing Budget: 4,605,680 USD
GEF 5/UNEP <a href="#">Project</a> Building National and Regional Capacity to Implement multilateral environmental agreements	The goal of the project to establish a network of national and regional databases for monitoring, evaluating and analysing environmental information to provide for environmental planning, forecasting and reporting requirements at all levels.	National data portals developed and deployed. National data portals networked at the regional level inside the Pacific environment portal, systematic assessments of existing technical capacity in-country using recent documentation and surveys of 14 countries.	Data from monitoring on the state of environment will feed into Component 1 and Component 2 of the proposed AF project. AF project will examine thoroughly GEF 5/UNEP project products and lessons learned and will build on them, and consultation will be held at the full design stage.	2016 – ongoing Budget: 4,319,635 USD

(MEAs) by Strengthening Planning, and State of Environment Assessment and Reporting in the Pacific Islands Region Asia Pacific				
Green Climate Fund (GCF) "Vanuatu Community-based Climate Resilience Project"	The project seeks to: reduce the climate-related vulnerabilities of communities across Vanuatu; increase their resilience to climate variability, extremes and change; build the adaptive capacity required to ensure communities can maintain sustainable development pathways across a wide range of climate futures.	The project will ensure: increasing the household incomes of rural coastal and inland communities through livelihoods diversification and increasing access to markets; increasing access to education by ensuring less schools days lost in the aftermath of extreme weather events by making school facilities more climate resilient; increasing broad community health outcomes by ensuring communities have more secure access to nutritious foods and potable water; increasing the sustainability of ecosystem services by improving integrated water resource management and reducing reliance on reef fish as a primary food source in rural coastal communities.	The GCF project is overarching, spanning through 6 sector interventions. The partial complementarity is seen in increasing the household incomes of rural coastal and inland communities through livelihoods diversification and increasing access to markets. The AF project has different approach and is more sector-specific. Strong coordination with this project is envisaged to enable an information exchange and learning from each other. Also, the AF project will ensure the effective dissemination of project results to the GCF project stakeholders. As the geographical coverage of the projects are distinct, such information exchange might facilitate the scale-out of project best practices. The full proposal development process will investigate the concrete activities planned in this project to avoid overlapping and seek complementarities.	2020 - Pipeline (Concept Note stage) Budget: 30,000,000 USD
World Bank "Vanuatu Disaster Risk Management Development Policy Grant - with a Catastrophe-Deferred Drawdown Option"	The program development objective is to enhance the recipient's regulatory framework and institutional capacity to: manage and reduce the risks from natural disasters and climate change; manage public debt.	The support was delivered to Vanuatu focused on saving lives, protecting homes and communities, and benefiting Vanuatu's economy. Within the framework of the project the new risk financing instrument, developed by the World Bank, called the Development Policy Loan (DPL) with a Deferred Drawdown Option for Catastrophe risks (Cat DDO). It helps to prevent such budget re-allocations or hasty resort to inadequate and expensive debt instruments, which hurt long-term development goals.	The DPL with a Cat DDO have been delivering results in the sphere of planning and allocating funds. The proposed AF project will be informed by the WB project but no technical overlap can be identified at this stage.	2020 – ongoing Budget: 10,000,000 USD
ACIAR (Australian Centre for International agriculture research) project "Enhancing returns from high-value agroforestry species in Vanuatu"	The project's overall aim is to advance the Vanuatu planted forestry sector by improving the availability of new and existing technologies and facilitating wider smallholder adoption of three high-value forestry species.	The project improves methods and technologies of growing canarium, sandalwood, cost-effective methods of whitewood drying.	The project provides synergies potential for the development and the implementation of agroforestry practices. However the AF project will focus only on non-timber forest products.	2020 – on going Budget 1,530,000 AUS
Forest Carbon Partnership Facility (FCPF)	The development objective of Grant is to assist Vanuatu to carry out the Readiness Preparation Activities by supporting the preparation of its REDD+ strategy through a participatory and inclusive process and by producing technical and policy advice to help strengthen sustainable land and forest management practices.	The project focus is on the improvement of knowledge of forest (practical guides, global vibrant sustainable network).	The project data will feed into the development of the AF project and provide knowledge on supply chain data needs related to forest and land use, what is available and possible within the MRV-EWS (Monitoring Reporting and Verification and Early Warning Systems) framework.	2008- preparing Readiness Package 2020

Western Santo Conservation and Resilience <a href="#">Program</a>	The target of the programme is to prevent environmental degradation by affirming and amplifying existing knowledge, skills and expertise of the people of West and North West Santo	The project focus area is mapping, monitoring surveys, and vulnerability assessments	If relevant project results are achieved, the proposed AF project will initiate experience exchange on training modalities and best practices on awareness-raising.	2021 – ongoing Budget 700,000 USD
GCF/SPREP (Secretariat of the Pacific Regional Environment Program) Climate Information Services For Resilient Development In Vanuatu <a href="#">Project</a>	The Project will build the technical capacity in Vanuatu to harness and manage climate data; develop and deliver practical Climate Information Services (“CIS”) tools and resources; support enhanced coordination and dissemination of tailored information; enhance CIS information and technology infrastructure; and support the application of relevant CIS through real-time development processes.	The results are the following: Enhanced capacity and capability of national development agents, to understand, access and apply CIS; enhanced CIS communications, knowledge products, tools, and resources for practical application to development processes; enhanced reliability, functionality, utility and timeliness of underlying CIS delivery systems and data collection infrastructure; enhanced scientific data, information and knowledge of past, present and future climate to facilitate innovated and resilient development.	The GCF/SPREP Project is complementary to the Component 1, Activity 1.1., on climate risk assessment and prevention at regional level. The AF project will be more precise in solving issues in the target areas (East-Espiritu Santo, Pentecost, Efate, Tanna and Aneityum). The AF project will take into account all SPREP products and tools while designing the activities and products for Component 1., Activity 1.1. and will review those existing datasets and information that can further enrich or complement the activities via the following GCF/SPREP activities: strengthen existing systems to improve information capture, access and application; build on and share existing traditional knowledge and expand its use; enhance data analysis and strengthen research activity and capacity; strengthen risk assessment processes and address site-specific climate and disaster vulnerabilities; strengthen adaptive capacity and reduced exposure to climate risk; strengthen awareness of climate threats and risk reduction processes.	2017 – ongoing Budget: 18,106,905 USD
Oxfam Vanuatu Pacific Climate Change Collaboration Influencing and Learning (PACCCIL) <a href="#">Project</a>	In Vanuatu, this project reflects the key principles and approaches from the Vanuatu 2016-2030 Climate Change and Disaster Risk Reduction Policy.	The project also reinforces the priorities of Vanuatu 2030 The People’s Plan 2016-2030, specifically focus on build institutional capacity and awareness, improve monitoring and early warning systems, strengthen post-disaster systems in planning, preparedness, response and recovery.	The project is complementary to the AF project on improving awareness -raising at regional level. The AF project will take into account all Oxfam Vanuatu project data and products while implementing activities and products for Component 1.	2018-ongoing
JICA Project for Enhancing the Capacity of Issuing Earthquake, Tsunami and Storm Surge Information	The goal of the project to improve VMGD’s capacity for monitoring earthquake, tsunami and storm surge is enhanced, and the function of VMGD and NDMO to disseminate information to related organizations and to the public.	The project enhanced real-time seismic monitoring network; improved the capacity of VMGD staff for tsunami and storm surge analysis and prediction; enhanced the capacities of VMGD and National Disaster Management Office (NDMO) for public awareness activities.	The focus of the JICA project is water resources/disaster management. The project improves institutional capacity and partially overlaps the AF project activity under component 1. All the data and lessons learned from JICA project will be taken into account.	2019 - ongoing
ADB <a href="#">Project</a> Building Coastal Resilience through Nature-Based and Integrated Solutions	The project technical area is water-based natural resources management, urban flood protection.	The goals of the ADB project: preparing strategic plans, policies and programs to build coastal resilience; support of nature-based and integrated coastal resilience investments; improvement of knowledge, regional cooperation, and financing for building coastal resilience.	ADB project focus on the improvement of coastal resilience programs, plans and actions in strengthens institutional capacity while AF project provides practical solutions of local communities’ problems. There was no duplication risk identified, as thie ADB project is scoped on water-based resources, coastal management and urban flood protection. The ADB project is complimentary to the proposed AF project through providing lessons on coastal resilience through nature-based solutions.	2021 – on going, 1,994,000 USD

## G. Learning and knowledge management component to capture and disseminate lessons learned

81. Each component of the project has result-specific capacity-building, participatory planning and awareness-raising activities. Both to meet learning objectives and to properly implement the project in customary land system, the learning components

and community involvement are of crucial importance. Capacity-building will also contribute to the sustainability of the project through enabling communities to maintain the results and activities.

82. An important aspect of the communities' involvement from the planning to the implementation phase is the relatively poor literacy and education level. This requires a context-tailored approach, building rather on experience gaining, visual learning and learning from each other than reading/writing type of learning. The design of the knowledge products is aligned to these specific requirements, and the learning materials are balanced amongst learning and instructional strategies.
83. To respond to the expressed needs of women "*women's traditional roles within the community, surrounding their comfort with speaking of their views to an audience and their lack of free time make it difficult to engage them in standard workshops or presentations*", the community consultation sought key partners in maintaining the knowledge partners. Women conservation specialists are identified to act as learning mediators. Their role in project implementation regarding the capacity building programmes is crucial due to their understanding of local context, indigenous language knowledge and the ability to carry-out gender disaggregated trainings.
84. The knowledge management framework is crafted as a responsive and iterative process that builds on the four key pillars of collect-build-share-sustain and is framed into a stepwise monitoring. The framework incorporates the generated knowledge of both internal and external resources, thus ensuring the flow of information vertically and horizontally. It in-builds the out-of-project information and lessons as complementary resources, while the project-generated knowledge can be outsourced and benefit a wider audience than the primary project beneficiaries. To keep the knowledge management up-to-date and informed, monitoring protocol is established at each pillar. The monitoring extends to external and internal sources and provides a rigorous tracking of the growing number of other project resources, and the emerging needs. The merit of such monitoring rests on the fact that Vanuatu hosts numerous, mainly disaster risk management related projects, that are often implemented as rapid responses. Continuous and consistent tracking of such projects can bring additional knowledge to the benefit of stakeholders. The responsibilities along the KM chain are allocated to the actors as per their role in the project. The coordination combines the actors responsible for overseeing and assessing the progress and results, executing the project at field level and the direct beneficiaries. The KM strategic framework in its full roll out will include the communities, the government structures, and the implementing agencies), and will identify their roles in terms of knowledge supply, knowledge use, knowledge outputs. As per the experiences, if communities are passive recipients of the knowledge programmes, the information uptake might remain poor or the content development of KM products might become misplaced. To strengthen the feasibility, the approach proposes community representation and knowledge catalyzers, who provide a direct bridge between the beneficiaries, secondary beneficiaries and KM design team

**Table 8** Knowledge management framework - schematic overview

Pillars	Monitoring source	Actors and reporting line	Means and outlets
Collect: Systematic collection of generated knowledge by the project results and on-going initiatives	External: information acquisition from on-going national, sub-national and regional initiatives	Implementing entities (agencies, NGOs, etc.), national decision-maker entities (Ministry, national research centres, etc.)	Means: knowledge map, assessment documentations Outlets: national and international online information bank
	Internal: experiences of executed projects	Project tasks forces of the implementing and executing agencies (on-going, to-be-implemented),	Means: project documentations, assessment documentations Outlets: KM planning meeting (internal project platform), technical discussions
Build: Analyzing and enriching the collected information with new project results	Internal: project results tracking and periodical analysis	Project steering committee, project task force, gender expert, M&E specialist, technical specialists representation of executing entity, representation of implementing entity	Means: Content development, manuscripts, curriculums, mission plans, dissemination strategy Outlets: KM planning meeting (internal project platform), inception missions
Share: Share the updated knowledge with intermediary actors and targeted beneficiaries	External: needs assessment of secondary beneficiaries	Implementing entities (agencies, NGOs, etc.), national decision-maker entities (Ministry, national research centres, etc.)	Means: knowledge map Outlets: inter-entity meeting, KM planning meeting (internal project platform)
	Internal: tracking and periodical analysis of knowledge uptake	Community representation (representation of chief of councils, extension service etc.), knowledge catalyser of women (specialized intermediary coordinators), project task force	Means: trainings, visual learning products (tutorials, signposts, etc.), demo products, printable products (reports, plans, etc.), field trips Outlets: offline outlets (printed publication, posters, movies etc.), events (sub-national, national and regional workshops, conferences, etc.), online outlets (AF, FAO, and Ministry websites, YouTube, etc.)

<p>↑</p> <p>Sustain: Supervise the continuous implementation of knowledge building and provide feedback for further needs</p>	<p>Internal: tracking and periodical analysis of results and degree of scale-out</p>	<p>Project steering committee, project task force, Community representation (representation of chief of councils, extension service etc.), knowledge catalyser of women (specialized intermediary coordinators), gender expert, M&amp;E specialist</p>	<p>↑</p> <p>Means: curriculum of train-the-trainers, supervision plan, feed-back repository</p> <p>Outlets: KM planning meeting (internal project platform)</p>
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85. The KM framework sets out a preliminary assessment of means and outlets of the KM products. As per the nature of the information source, outlets act as an inflow of information and dissemination of project results. The internal outlets inform the project stakeholders by building a resource pool and are operated at executing agency level (databank at existing online platform of National Advisory Board). The external outlets target directly communities, sub-national, national and international level through a variety of dissemination tools (offline, online and in-person).
86. The lessons to be drawn from the project are relevant beyond specific national, sub-national and sector dimensions (island target areas, FLR, agroforestry, traditional/indigenous knowledge), as the project will produce actual blueprints for the participatory identification, development and application of climate-smart solutions together with the capacities necessary and the enabling environment for sustainable financing. The good practices developed in the framework of the proposed project will be elevated to work across programmes, regions, sectors, and countries. The full proposal will include how the identified dissemination outlets can reach out to a larger audience, as well as a plan of communication channels.
87. The baseline KM framework involves the identified knowledge products that are partly design to the target beneficiaries and have the potential to be scaled-out to multiple communication channels. The list below summarizes learning objectives, indicators and specialized knowledge products at activity level, briefly described in the framework:
- Activity 1.1.1 - Learning objectives: Train professionals on use of new DRM portal and communication of messages at community level; Indicators: Number of professionals, authorities and extension service; Knowledge products: Compiled and synthesized datasets from existing information, updated geospatial portal with user manual, Assessment report on training for professionals on new DRM portal, face-to-face training.
  - Activity 1.1.2 - Learning objectives: Multi-level awareness on upgraded policies; Indicators: Number of groups aware of upgraded policies; Knowledge products: Policy assessment documentation.
  - Activity 1.1.3/1.1.4 - Learning objectives: Train professionals and communities on FLR for climate change adaptation and disaster risk management; Indicators: Number of people, local chief councils, communities, extension service, forestry technical experts; Knowledge products: Developed island-level FLR plans, planning template planning roadmap, visual thinking board, face-to-face training report
  - Activity 1.1.5 - Learning objectives: To enhance multi-level capacities on geospatial analysis, information-based decision-making and planning mechanism of FLR; Indicators: Number of individual groups with increased understanding of geospatial analysis, information-based decision-making and planning mechanism of FLR; Knowledge products: Training tutorials on geospatial analysis, information-based decision-making and planning mechanism of FLR.
  - Activity 2.1.1 - Learning objectives: To enhance capacities of communities to grow and utilize appropriate plants for DRM and CCA and agroforestry; Indicators: Communities, council of chiefs, extension service and conservation specialists; Knowledge products: Learning-by-doing with visual materials, photo and video documentation of preparation phases, herbarium book and plant inventory, face-to-face training report, train the trainers report.
  - Activity 2.1.2 - Learning objectives: To enhance capacities to implement ecosystem-based solutions for restoration and revitalization of protection sites; Indicators: Communities, council of chiefs, extension service and conservation specialists; Knowledge products: inspection visits, signposts, visual training book, face-to-face training report, train the trainers report.
  - Activity 2.1.3 - Learning objectives: To raise awareness on forest/natural resource-based disaster risk management; Indicators: Number of communities and individuals; Knowledge products: Awareness campaign roadmap and final report, leaflets and posters.
  - Activity 2.1.4 - Learning objectives: To enhance community and system (extension) capacities in restoration practices and techniques; Indicators: Number of communities and individuals; Knowledge products: Demo design documentation, demo manual of practices and techniques, demo function report, face-to-face training report, training material, result assessment and scalability strategy in support of FLR planning.
  - Activity 3.1.1 - Learning objectives: To create knowledge base on the potential of sustainable agroforestry practices for CCA and DRM; Indicators: Communities, council of chiefs, extension service and conservation specialists; Knowledge products: practices inventory, pilot reports, face-to-face training report, train the trainers report, updated national extension training programme.

- j. Activity 3.1.2 - Learning objectives: To increase capacities on the implementation of resilient agroforestry; Indicators: Communities, council of chiefs, extension service and conservation specialists; Knowledge products: demonstration manuals, signposts, visual training books, field trip reports, train the trainers report
- k. updated national extension training programme, result assessment and scalability strategy in support of FLR planning.
- l. Activity 3.2.1 - Learning objectives: To establish the causality effects of integrating cash-crop production into agroforestry in the context of Vanuatu; Indicators: Communities, council of chiefs, extension service and conservation specialists; Knowledge products: signposts, visual training books, face-to-face training report
- m. train the trainers report.
- n. Activity 3.2.2 - Learning objectives: To establish the level of diversification and strengthening of local livelihoods through value chain approach; Indicators: Women communities, extension service; Knowledge products: non-timber forest product inventory, business plans of products, visual training books, face-to-face training report.
- o. Activity 3.2.3 - Learning objectives: To collect, stocktaking, and disseminate information on agricultural commodities and inter-island trade modalities; Indicators: Women groups, authorities, extension service; Knowledge products: design documentation and manual, online agriculture commodity information system,
- p. publication outlet of online information system (printable leaflets, radio and phone), face-to-face training report.
- q. Activity 3.2.4 - Learning objectives: Increased capacities of PMOs to engage with markets in a structured and sustainable manner; Indicators: Women communities, marketing organizations; Knowledge products: virtual market map and timetable, logbook template, face-to-face training report.
- r. Activity 3.2.5 - Learning objectives: FoTA, buyers, and farmers are aware and take the necessary steps to collaborate in an informed production environment; Indicators: Women communities, youth communities; Knowledge products: face-to-face training report, business plans of FoTA products, virtual market map, visual training books.

## H. Consultation process

- 88. Initiated by the Government of Vanuatu, the concept note formulation started upon a wide range of consultation process at different levels: governmental stakeholders, decision-makers, technical professionals, community representatives, communities disaggregated to women and male groups. The Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management was involved from the beginning of the formulation and supported the process to define the activities corresponding to the national adaptation priorities.
- 89. The request of the Ministry to formulate the project was received in March 2021, based on previous discussion on climate change adaptation potential in Vanuatu. Throughout the formulation, several bilateral discussions were held with the Ministry, as well as the validation of the proposal took place on 2nd of August. The project design was aligned to the defined priorities by the Government, namely the National Sustainable Development Plan, Pillar 3; National Adaptation Program for Action, Agriculture & Food Security and Sustainable Forestry; Country Programming Framework, Priority area 2.
- 90. The project formulation was based on community consultations in all selected project areas (1<sup>st</sup> to 16<sup>th</sup> July 2021) that was carried out through a dedicated national level mission with the following objectives:
  - carry out preliminary data collection related to and elaboration of the proposed activities, their cost, benefits and risks;
  - conduct community-level assessment in targeted islands, pre-select potentially involved islands, conduct gender analysis, identify vulnerable groups and propose adaptation measures relevant to the local context.

Ni-Vanuatu (indigenous Melanesian) make up the 98 percent of the country population. Similar to the national demographic feature of indigenous peoples, the tentative project areas are lived merely by indigenous ni-Vanuatu communities, and all consulted communities are indigenous peoples. The consultation process did not identify further minority groups. The consultations returned the valuable conclusions that guided the project formulation. Communities discussed their experiences regarding climate change impacts, their sustained losses and damages, the particular vulnerabilities, their livelihood conditions, their current adaptation practices and recommended adaptation practices. Specifically, the structure comprised of: (a) the consultation workshop with selected community members, b) the other was a one-to-one questionnaire interview with the community members with a priority focus on women.

- 91. **Santo:** The main challenges are associated to forest degradation due to climate change impacts, natural hazards and invasive species. The identified climate change hotspots involve inlands and catchments. The main issues included coastal area erosion, flooding, as well as communities observed crop yield decline due to the changes in weather pattern. However, the communities also emphasized the unsustainable forest extraction that exacerbates the climate change impacts. This is particularly harmful as all involved farmers carry out subsistence farming, and households have no alternative income to agriculture. The recommended adaptation measures involved better agricultural practices,



Figure 11: Community consultation in Santo

resilient forestry practices, coastal rehabilitation, agroforestry and pest management. To address the issue of uncontrolled forest logging, the communities requested capacity building and technical supervision during the project implementation

92. **Pentecost:** Pentecost is one of the main kava and taro producer, products often shipped to urban centers and markets. However, majority of the population make income from subsistence economies and other cash crops. As per the reports of the people, changes in rainfall and extreme storm events are now creating significant threats to food security and leads to an elevated probability of disease outbreaks in agriculture, water insecurity and declining health. Sea level rise is a major issue in the narrow-shaped Pentecost, and villages are forced to resettle. The main climate change hotspots are the coastal areas and river flood plains. The increasing climate vulnerability is due to floods destroying the gardens, forest degradation and declining productivity. Communities required support in climate smart practices, coastal rehabilitation and resilient forest practices.



Figure 12: Community consultation in Pentecost

93. **Efate:** The communities are particularly under the production pressure to supply food to the urban areas and tourists in Port Vila. The selected communities live in rural areas and their lands are increasingly shrinking due to the expansions of in-built area. The identified climate change hotspots are the inland agriculture areas. As they defined *“the implications of climate change on food security and livelihoods are significant and in combination are likely to present a major challenge for dependent communities”*. Climate change affects the productivity and lead to early flowering of tree species. The identified adaptation measures include best and climate agricultural practices, agroforestry, as well as pest and disease management. The Council of Chief previously formed the Efate Land Management Area Taskforce (ELMA), consisting of the head of villages. The Taskforce was formed to support project implementations and ensure synergies of the project areas. The Taskforce endorsed the project activities and conveyed their support in the planning and implementation.



Figure 13: Community consultation with women in Efate

94. **Tanna:** Tanna communities live with multiple disasters, involving climate and geological hazards, inducing frequent yield loss. Apart from climate change impacts and natural disasters, Tanna is experiencing a day-to-day disaster due to the impacts of ash fall and acid rain from the active Yasur Volcano. The areas around the volcano are the most exposed to multiple hazards, combining climate change and geohazards. General feedbacks from the community emphasized the need to increase adaptive capacity to reserve the detrimental impacts of ash fall and acid rain. The climate change hotspots involve villages and settlements and inland agricultural areas. The communities expressed the need for improving agricultural practices, increasing forests areas as shelter from the climate hazards and ash fall and applying agroforestry practices.



Figure 14: Consultation with farmers in Tanna

95. **Aneityum:** The island used to live from regular tourism due to its unique coral reef system and natural resources. Due to COVID-19 travel restriction, the small island is now experiencing the worst economic crisis, as people are left without any source of income. To mitigate the COVID impact, there is a large willingness to return to agriculture sector that has no prior history or meaningful infrastructure in the island. Due to its small size, the entire island is exposed to the climate change impact, including coastal areas and inlands. The communities defined their need for developing agricultural practices and agroforestry, as well as intensive capacity-building to allow them embarking on new economic activities.



Figure 15: Community consultation in Aneityum

96. During the consultation mission, women groups were separately interviewed. Their potential role in project activities and participation modalities were explored. The project proposal and activities were, therefore, defined in a gender-responsive manner, and activities were proposed to ensure the equal benefits for women groups. All comments in the discussions were taken into account for the development of the current concept and will be further elaborated at the stage of full project proposal. In this regard, the consultations featured consensus and validated the importance of the proposed components.

97. Further consultations were held during the Councils of Chiefs (Vaturisu Council of Chiefs in Efate, Malbangbang Council of Chiefs in South Pentecost, Aneityum Council of Chiefs, Tanna Council of Chiefs and Santo Council of Chiefs) in course

of June 2021. The project activities were presented during the workshop with 23 participants. The Council concluded the relevance of the project and endorsed the activities.

98. The project concept note was presented to the Technical Committee of National Advisory Board and the National Advisory Board on 2<sup>nd</sup> and 4<sup>th</sup> August 2021, who validated the proposal.

### **I. Justification for funding requested, focusing on the full cost of adaptation reasoning.**

99. Without the project, the increasingly severe impacts of climate change and disasters would keep hitting the communities and destroying their productive assets. The subsistence-farmers would rely on post-disaster aids/assistance to partially restore their lands and gardens. The communities would turn to make use of the remaining natural resources to generate income, such as forest harvesting. The agriculture and forestry sectors would rely on damage management, instead of risk management. The first, conceptual additionality of the project is to increase preparedness through an ecosystem-based solution. This will contribute to the income of the communities, the decrease of potential damages and losses, and ecosystem conservation.

100. As far as Component 1 is concerned, the planning mechanism would involve only responsive measures and short-term projection. The existing analyses would remain highly inaccurate and disconnected from farmers. The spatial analyses would focus merely on settlements and neglect the primary production sectors. Farmers, in particular the most vulnerable subsistence-farmers, would have little information on the expected long-term trends, thus hampering the production planning. With the project, the forecasting periods will be extended and involve the primary production sector. This will have a positive contribution to the planning mechanism of the authorities and the preparedness of agriculture and forest sectors to climate hazards. The more accurate and downscaled projections will provide information to all farmers. Altogether, the project will contribute to the climate-proof planning of previously neglected sectors and benefit the most vulnerable stakeholders of agriculture and forests.

101. As far as Component 2 is concerned, the climate change impacts, and uncontrolled forest extraction would further reduce the forest areas, thus inducing ecosystem degradation. The forestry sector would benefit only a marginal number of timber producers and neglect the most vulnerable groups. The growth rate of wood production would increase due to the population increase and economic pressure of income generation. Furthermore, agricultural lands would be expanded arbitrarily and come at the expense of ecologically important areas. With the project, deforestation will be reversed in the project areas, and the concept of adaptation function of forests will be reinforced. The redeployed forest areas with extended adaptation functions will act as disaster buffers and protect the surrounding lands. The overall perception about the role and function of forests will change, and the communities' engagement in conserving forest resources will grow. The sustainable utilization of forest products will involve a broader range of stakeholders, involving women and youth. The project will ensure that the maintenance of results is not funding-dependent through the development of nurseries that will provide future supply.

102. As far as Component 3 is concerned, (without which) agriculture would remain undiversified and exposed to climate change. The farmers would crop randomly without being conscious of the climate risk and harvests will remain at the mercy of climate change induced weather patterns. Primary production would keep benefitting the head of households and landowners. The crop lands would remain exposed to climate change impacts and disasters. Also, the household income would remain low and dependent on market uncertainties. With the project, the agroforestry systems will provide an adaptation function to protect the crops and diversify production. The climate resilient and organic practices will contribute to securing and enhancing the income. The forests will be sustainably managed, and non-timber products will be preferred over harvested products. With the project, women's and youth's roles in agriculture value chain will be strengthened, and their income will be increased through more solid market structures. Through the price information system, not only the technical efficiency will increase but the profitability of production.

103. All in all, with the project, the resilience of communities and ecosystem will increase to adapt to climate change and manage disaster risk, and the livelihoods of the most vulnerable will be improved. The following scenario analysis summarizes the full cost of adaptation reasoning:

- a. Baseline situation of Component 1: The Vanuatu Meteorological and Geo-Hazards Department (VMGD) Warning Centre, issues primary warnings and alerts through different media outlets. These warnings are rather short term and signal the rapid on-set events. Due to lack of modern technologies in rural areas communities currently have limited or no access to climate information, which makes it increasingly difficult for them to plan ahead. The information systems are managed in silos and no comprehensive, interdisciplinary analysis can be made due to the management scattered around the institutions.
- b. Alternative (additional with AF) intervention of Component 1: Communities have improved information at their level, allowing them to make more informed decisions and take additional measures to safeguard themselves during the rainy or drought season. This also includes more comprehensive, interconnected analyses that will inform stakeholders at all level through an IT umbrella (climate, FLR, agriculture, markets and commodities). Losses decrease as well as the food security issues. The current policy is improved, and enabling environment is prepared to implement FLR



measures. Capacity of target areas to respond to climate change through the Vanuatu Government planning and budgeting system is strengthened. Financing for forest and landscape restoration in the target areas are improved and GoV have a plan how to allocate funds more efficiently and improve financing in the target areas.

- c. Alternative (non-project) scenario of Component 1: Disaster risks remain non-sustainably managed. Farmers have poor access to prompt and relevant information about natural hazards. They continue bearing income losses due to climate change and severe cyclones. The climate change DRM policies is not reviewed and FLR will not be mainstreamed. There is no adaptation alternative – without governmental support to respond through the subnational financial planning system to climate change. The deterioration of agriculture in target areas continues with all the knock-on effects that this may have as described in Part I.
  - d. Baseline situation of Component 2: Multilevel stakeholders have very low awareness and capacity on how to utilize restoration practices and techniques. The rural population is amongst the most exposed to the harsh realities of climate change.
  - e. Alternative (additional with AF) intervention of Component 2: People are protected from income losses and damages. Food security is improved. Awareness-raising campaigns helps to achieve mutual understanding between local communities. Forest management, tree planting/restoration, and agroforestry are amongst the most promising ecosystem-based strategies to build local resilience while providing food and income security in remote and vulnerable rural areas. With the project ecosystem-based measures are not only developed and implemented at scale, but they are also embedded in the planning environment of the country in an inclusive multi-stakeholder context through trainings, demo sites, and knowledge material.
  - f. Alternative (non-project) scenario of Component 2: The deterioration in agriculture due to the land degradation and deforestation of target areas continues. FLR is a missed opportunity and traditional practices of indigenous people are abandoned and lost due to the expanding grey infrastructure for disaster management. Livelihoods and security of communities remain at high risk. Farmers continue bearing income losses; deforestation rates increase, and land degradation expands to ever-larger areas.
  - g. Baseline situation of Component 3: A significant portion (80%) of Vanuatu's population is heavily engaged in subsistence agriculture. It has allowed Vanuatu to maintain relatively good access to food, although nutrition-related problems persist. Rural population has limited opportunities to generate cash income. In Vanuatu, nine in ten market vendors are women, with markets a vital space for women to earn income. But such spaces remain under-resourced and under-valued by government and municipal authorities. Much of Vanuatu's food production is threatened by its exposure to natural disasters. Climate change is likely to intensify these threats.
  - h. Alternative (additional with AF) intervention of Component 3: The private sector has opportunities to link small agribusinesses with domestic and export markets. The pathway to commercial agriculture let farmers and rural communities to increase agricultural productivity and establish a place in the domestic and globally-integrated food industry. Smallholder farmers will obtain a higher share of the final value of their products through direct value addition and improved bargaining power resulting from quality enhancement with sustained demand for products and development of stable commercial relationships. A strong link between agribusiness and smallholders with a focus on women reduces rural poverty. The dialog between producers and consumers is strengthened.
  - i. Alternative (non-project) scenario of Component 3: Without reforming domestic market relations small farmers have less opportunities to sell their products and trade does not provide sufficient benefit to local producers. Domestic agricultural market remains unstructured and women's livelihoods are caught in a perpetual vulnerability loophole.
104. The proposed project does not require co-financing, as activities are not conditional on on-going or pipeline projects. Activities are built on existing infrastructure and leverage acquired information and experiences, as detailed in section F. The proposed project components, outcomes and outputs fully align with national government policies and institutional priorities and gaps identified, with a clear and direct response to the needs of the interface of the disaster risk management and climate change adaptation as these are identified in the Vanuatu's NDC (Updated Submission 2020), Agriculture Sector Policy 2015 – 2030, Vanuatu Climate Change and Disaster Risk Reduction Policy 2016-2030 and other policies. The components, outcomes and outputs also align with the needs of identified communities and vulnerable groups and with the AF outcomes. The need for special adaptation actions and DRM measures in focusing on any of the finally selected areas of East-Espiritu Santo, Pentecost, Efate, Tanna and Aneityum and on the most vulnerable groups, is rather imperative, since these areas are extremely vulnerable in terms of climate security (prolonged wet and dry seasons and coastal erosion, extreme rainfall events) and natural disasters (storm surge, tsunami, volcano eruptions). Livelihoods in the project areas are very dependent on the agricultural sector and climate change.

## **J. Sustainability of the project outcomes**

105. The project design leverages the lessons learnt from previous project implementation. The community consultation highlighted three major constraints of previous adaptation programmes, which must be addressed to ensure the sustainability: the lack of continuation of financing after project implementation, the lack of technical people on the ground, the lack of community involvement during project implementation. A sustainable project design must be based on three

pillars to address these issues: introducing measures that can be reproduced and self-generated without additional financial support; identification of intermediary supervisors on the ground to act as technical support; co-planning and co-implementation of project, also involving the most vulnerable groups.

106. Social sustainability: the customary land tenure is one of the most complex condition of any project intervention in Vanuatu. The system is largely built on cultural heritage, informal agreements and traditional complaint management. This largely unsettled and dynamic system results in numerous conflicts and disputes that are settled by the chief of the communities. Therefore, a project intervention requiring land acquisition, trans-farm-boundary implementations or engineering solutions requiring land consolidation would involve a large uncertainty. The project design is, therefore, built on community-based planning and implementation. The implementation modalities will be channeled into the chief councils of the villages. This is the only viable modality of implementation due to the customary lands in Vanuatu (and all Pacific SIDS) and it is in this regard that chief councils are considered to be a support not only as value added for implementation and sustainability, but as a key prerequisite for the project to be realized. As the community consultation already showed a great interest from beneficiaries, and chief councils were present in the consultations and provided their support, the social sustainability framed into the customary land system is ensured. During the concept note development, councils of chiefs were consulted, who committed the support of the project (Vaturisu Council of Chiefs in Efate, Malbangbang Council of Chiefs in South Pentecost, Aneityum Council of Chiefs, Tanna Council of Chiefs and Santo Council of Chiefs). The positive indications and the joint technical design give FAO as the implementing agency the assurance that all preliminary aspects to secure community backing are there. The thematic consultations during full proposal development will further enhance the arrangement modalities. The agroforestry systems can be managed within the land size of households and be replicated by any household with similar conditions. FLR is fully compliant with this traditional setting and does not require grey investment. Beyond the community-based implementation and management, capacity-building is mainstreamed into each component. By providing adequate knowledge during the implementation, the maintenance of project results will be ensured. As knowledge maintenance safeguard, the project will also deploy local individuals as intermediary officers to further support the communities and preserve knowledge. As, the project has several components designed to women and youth communities to ensure inclusiveness, and strengthen their role in primary production and ecosystem conservation. The consultation mission has identified skilled women experts, serving as employed local officers and conservation specialists, who nurture interest in supporting the project and benefit from the train-the-trainers programmes in support of the communities. Providing capacity-building for the intermediary supervisor will be a solid foundation for operating the project results beyond the project timeline, in particular for women who are exposed to be marginalized after the project closure. Support of specialized, local women expert will ensure the long-term and inclusive social sustainability.
107. Economic sustainability: the project is built around ecosystem-based adaptation measures, therefore, the introduced measures are inexpensive, income-enhancing and inclusive. The proposed activities do not require new input markets or inaccessible equipment. The project improves the locally produced crops and forest products with locally available techniques, equipment and inputs. Therefore, the continuation of the project results does not depend on external markets, transport, financing or trading mechanism. The targeted subsistence-farmers can diversify and increase their incomes, targeting market gaps. The approach used by FAO in implementing nurseries is a revamped method to improve the management performance and sustainability. Building on experiences, communities are trained an assisted to nurture the seeds, collect the seedlings and plant them. This is a rotational management that supports the entire chain of cropping and lower the running costs of the production. The input necessary to operate the nursery is the certified seeds that can be purchased or directly produced by the farmers. Another running cost is the labour cost that is covered by the community contribution. The project supports the initial purchase of the seeds, but once income is generated from the crops, the system becomes financially self-sustained. Through the empowerment of marketing organizations and integrating women into marketing, the project can ensure the market uptake of newly introduced products at the most optimal price. The improved market outlets help create the foundation of more predictable market conditions. The warranty of the economic sustainability is the improved income without additional production cost incurred. Regarding the development of datasets and information systems (climate, FLR-related, market and commodities), the project upgrades and integrates existing IT infrastructure. This infrastructure is operated by the relevant Ministries under their mandate and is open-access and open-source. By creating the relevant analysis methods for each project components through a data collection protocol and appropriate coding, the analysis can be uploaded and added as additional layer in the open-source platform. Wherever more complex analysis is required, the platform can be accessed through TJS plugin for QGIS (free and open access GIS application), thus entailing no further cost implication. Relying on this open access and open source applications, incurred running cost of the system operation is not foreseen. However, exploiting the potential of the IT infrastructure and keeping it inclusive require an institutional process model, whereas stakeholders are trained to use the systems.
108. Institutional sustainability: The institutional sustainability is backed by the Governmental efforts to set up departments specialized on climate change and disaster risk management in all ministries. The formation of cluster groupings, adopted from the UN cluster system had assisted a lot in incorporating government agencies to work closely together with partner agencies from both humanitarian and private sector, including community committees. All clusters are led by a government agency and co-lead by a humanitarian or private sector agency. Unlike the UN cluster system, that is activated during

respond and recovery phases, the Vanuatu cluster system is a full-time job for cluster members that covers the full cycle from, planning, preparedness, respond and recovery. Currently there are eight (8) cluster groupings that are led by each government agency namely, Logistics (National Disaster Management Office), Food Security and Agriculture (Department of Agriculture and Rural Development), WASH (Department of Water Resources), Shelter (Public Works Department), Education (Ministry of Education), Health (Ministry of Health), Gender and Protection (Department of Woman Affairs), Emergency Telecommunication (Office of Government Chief Information Officer). An agency could be a member of more than one cluster. The project will work closely with three out of the 8 clusters (Gender and Protection, Food Security and Agriculture and Logistics), but will inform all clusters about the project results and potential linkages. As cluster members are permanent entities, their involvement into the project will ensure the long-term sustainability. The institutional sustainability is lined out as an inclusive process model from the Ministries and their specialized departments to the local level institutions and individuals, who ensure the operation of the project results beyond its timeline. As per the planning mechanism and information systems, the project requires the harmonized and interdisciplinary collaboration of Ministries, including the Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management, Ministry of Finance and Economic Management, Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity and Ministry of Lands and Natural Resources. The Ministries are the custodians of the acquired datasets from different sources and are directly in touch with the branch offices of the divisions and extension services (at provincial and Area of Council level). This will allow the tracking and regular update of necessary datasets and the dissemination at governmental, open access platforms. The information flow will be guaranteed and operated via a data collection protocol at field level, whereas cluster members, extension service officers, women representations and intermediary supervisors are responsible for the data flow. The process model is iterative in a sense that some data is sourced directly from the field (i.e. market, commodity prices, status of natural resources etc.), but the generated information must be dispersed back to the field through different outlets. (i.e. agriculture information through agricultural extension service officers, market information through women organizations etc.). The project via the activity 1.1.1 and 1.1.4 sets out a suite of training from dataset compilation to the operation of the portal. This training will ensure that relevant stakeholders at local level can operate the system from both data acquisition/management and information dissemination side beyond the project. The structural measures (agroforestry plots, nurseries, EbA measures etc.) are operated by the communities, namely through the chief of villages organized in customary system. The project builds on participatory approach to ensure engagement and willingness to sustain and scale out the results. In order to enhance the institutional sustainability, the cluster members, extension service and intermediary supervisors will be involved and trained during the implementation. While agricultural extension service is recently more active in the area, the project requires a more interdisciplinary approach involving other extension service branches (i.e. forestry, women affair), therefore, the project will strengthen the tie and ensure that all relevant extension service together with the cluster members, provincial offices of the departments and divisions are involved. This will directly contribute also to the technological sustainability. An additional asset of the institutional sustainability is the partially identified intermediary supervisors in the islands (technical experts and knowledge catalyzers), who add to the gender-responsiveness and the role of women in sustaining the project results. The project introduces train-the-trainers knowledge outlets to ensure that the results are mainstreamed into the curriculum of the relevant branch offices, who can further work with the chief councils and supervisors. A detailed organizational chart will be provided in the full proposal to demonstrate the responsibility line and clear roles of the involved actors.

109. Technological sustainability: The project is built on new-old practices of forest management and agroforestry but also extending their functions with climate change adaptation and disaster risk management. The forestry, agroforestry, nursery, climate smart cropping and non-timber forest product related activities are designed in a climate-proof manner to increase the resilience of their management. Community-based nurseries are embedded in the project activities to continue supplying the communities. Consequently, even the restoration, damage and loss management in case of devastating disasters are guaranteed. The proposed technical measures are fully climate resilient and can be reproduced even in worst case scenario. The technology sustainability of databases and information systems lies within the fact that the project builds on existing, and ministries-hosted platforms that do not require additional maintenance from IT infrastructure point of view. The upgraded methods and integration of data sources are supported through protocol and trainings. The outdate of the crafted and upgraded analysis methodology is not expected because the potential update and latest release of the cross-platforms does not trade off the compatibility with previous versions.
110. Environmental sustainability: The project involves ecosystem-based adaptation measures through FLR and promotes the restoration of lost natural resources. Each activity is compliant with the environmental and sustainability objectives. The project reinforces the ecosystem functions of the forests through soil stabilization, hazard-proofing, runoff control, water retention, landscape restorations etc. Therefore, the restoration and regeneration potential of the ecosystem is supported to provide long-term and sustainable services. The awareness-raising campaign and capacity-building shift farmers away from resource exploitation, thus changing the habitual mindset on wood production and provide valuation of the ecosystem.

## **K. Overview of the environmental and social impacts and risks**

111. The project is prepared and will be designed in a way to have a positive environmental and social impact, based on data and synergies with products from other projects, as well as through consultations with stakeholders, target local

communities, and relevant authorities. The rather small-scale appropriate activities will be selected by communities and are expected to create an overall positive impact on the environment with special attention to minimize any collateral environmental effects.

112. An environmental and social risk pre-screening under the 15 principles of the AF ESP was conducted during the development phases of the concept note. The initial pre-assessment at the concept note stage would classify the project under Category B, where the proposed activities requiring an environmental or social assessment represent a minor part of the project. Category B is proposed due to the customary land tenure system in Vanuatu, which requires a social assessment to ensure equal access of all possible stakeholders to the project results. Given concept note level, the formulation team proposes that all ESP principles will be subjected to an in-depth screening during full proposal development. The full proposal development will conduct and provide an Environmental and Social Impact and Risk Management Plan (ESMP) to ensure that all relevant risks are mitigated.
113. The project is aligned with the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) and ILO Convention No. 169 as the project is in compliance with the Declaration. All activities focus on the prosperity and benefits for indigenous people of the target areas. During the implementation of activities under Components 2 and 3 UNDRIP Articles 10 and 3284 and ILO Convention Article 1585 (land of indigenous people) will be taken into account. All practices on the land will be done with the consent of its owners. The project team will consult and cooperate in good faith with indigenous peoples. Free, Prior, Informed Consent (FPIC) is specified in the afore-mentioned Article 10 of UNDRIP. “Indigenous peoples shall not be forcibly removed from their lands or territories. No relocation is foreseen on the basis of project activities implementation.

<b>No further assessment required for compliance</b>	<b>Potential impacts and risks – further assessment and management required for compliance</b>
<b>ESP: Compliance with the Law</b>	
	<p>Initial screening has not identified non-compliance after in-depth desk review as laid out in part II.E</p> <p><i>Risk:</i> By the time of submission of full project proposal new national laws and/or new international commitments may be in place (likelihood low)</p> <p><i>Impact:</i> Project not in full compliance with the relevant legal and regulatory frameworks.</p> <p><i>Mitigation:</i> Revisit ESP Principle and re-assess before final full proposal submission.</p>
<b>ESP – Access and Equity</b>	
	<p>The project endeavours to provide fair and equitable access to benefits.</p> <p><i>Risk identified at pre-screening:</i> Stakeholder mapping indicated that customary land system and community leadership system (chiefs) may leave room for unfair and unequal access to decision-making processes, trainings et. al. (likelihood low)</p> <p><i>Impact:</i> Project activities especially relevant to nursery establishment and management, restoration, and trainings are not equally accessed by all.</p> <p><i>Mitigation:</i> A more rigorous assessment will be provided in the full proposal, whereas an in-depth and sectorial stakeholder mapping will be an essential part of the targeting strategy.</p>
<b>ESP – Marginalized and Vulnerable Groups</b>	
	<p>The project formulation team made efforts to include vulnerable groups into concept development/approval. Initial consultations identified the three most vulnerable groups (youth, women<sup>86</sup> and indigenous peoples), and specific activities are proposed to ensure they will benefit from the project.</p> <p><i>Risk:</i> As the exact target areas are still undecided and full roll out and inception consultations have not taken place it is likely that the concept can't guarantee the notion of 'leaving no-one behind' (likelihood low).</p> <p><i>Mitigation:</i> A more rigorous assessment during the stage of full proposal will describe in detail the characteristics of marginalized or vulnerable groups in the target areas as well as disaggregated analysis of the ways these groups can be disproportionately affected by the project.</p>
<b>ESP – Human Rights</b>	
	<p>Initial screening has not identified any specific risks on the interface of the proposed project and Human Rights. However, the possibility of Human Rights violations in the process of delivering project activities is likely as Vanuatu has ratified only five of the nine core international human rights treaties, while for</p>

<sup>84</sup> UN 61/295. United Nations Declaration on the Rights of Indigenous Peoples (2007).

<sup>85</sup> ILO Convention 169 (1989).

<sup>86</sup> A brief presentation of identified risks targeting gender can be found under Annex 2.

	<p>the ratified ones Vanuatu still has significant gaps vis-à-vis implementation and reporting.</p> <p><i>Risk:</i> Human Rights violations in the working/implementation process of project activities (likelihood low).</p> <p><i>Impact:</i> Project delivery impeded and/or project funding stops on the basis of violations. Project / Donor / Country reputation damaged.</p> <p><i>Mitigation:</i> Human Rights will be an explicit part of the consultations with stakeholders and compliance with UNHR and its monitoring will be ensured by ESMP constructed together with the executing entity and FAO systems and frameworks.</p>
<b>ESP – Gender Equity and Women’s Empowerment</b>	
	<p>The concept features a dedicated gender assessment in Annex 2. Moreover, gender-based violence is still a serious concern in the country. According to UN Women, 60% of women suffered physical and sexual violence by their partners. Moreover, women are poorly represented in the political sphere. Since independence, only five women have been elected to Parliament.</p> <p><i>Risk:</i> The project runs a risk of having less women than men engaged in its processes and activities and in general women’s involvement in the project can be restricted by their weak position (likelihood low).</p> <p><i>Impact:</i> knock-on effects on project activity implementation but also sustainability of results.</p> <p><i>Mitigation:</i> The concept note design entailed a suite of gender-responsive activities to provide equal social and economic benefits to women. The project targeting strategy will have gender quotas and allocation of project activities will mainstream women leadership, wherever possible. Further analysis of the legal and regulatory context with respect to gender equality in Vanuatu and enhancement of the already initiated gender analysis and the project activity interface to make certain that everything that could exclude or hamper a gender group is excluded.</p> <p>A brief presentation of the identified risks can be found under Annex 2</p>
<b>ESP – Core Labour Rights</b>	
	<p>Vanuatu ratified eight ILO Conventions, including seven core Conventions. C138, minimum age convention is not ratified by Vanuatu.</p> <p><i>Risk:</i> Child labour to illegally support project activities (e.g. nurseries, restoration) (likelihood low)</p> <p><i>Impact:</i> Impact: Project delivery impeded and/or project funding stops on the basis of violations. Project / Donor / Country reputation damaged.</p> <p><i>Mitigation:</i> FAO through its ESS 7 Decent Work explicitly prohibits the child labour. As in Human Rights this aspect will be central to consultations and inception phases and collaboration will be sought with ILO through UNCT to enhance the current assessment of this ESP Principle. ESMP constructed together with the executing entity with provide a strategy to avoid the violation of core labour rights.</p>
<b>ESP – Indigenous Peoples</b>	
	<p>Vanuatu has not ratified the ILO 160 Convention on Indigenous and Tribal Peoples Convention up to date. Over 95 percent of Vanuatu are indigenous peoples. The project planning phase involved all community members of the target areas to ensure that rights of indigenous peoples (Ni-Vanuatu) are respected, and their cultural, traditional, social and economic role are strengthened throughout the project.</p> <p><i>Risk:</i> Rights of indigenous people not respected in some of the activities (likelihood extremely low/no risk)</p> <p><i>Impact:</i> Indigenous peoples do not receive equal benefits from the project</p> <p><i>Mitigation:</i> All project beneficiaries are indigenous peoples, who were consulted during the concept note formulation, and their interests are fully incorporated in the proposal. No risk was identified per se as FPIC will be embedded in the project development process, however, full proposal development will provide a further assessment, including how the project will create awareness about the rights of indigenous peoples (referring to all project stakeholders).</p>
<b>ESP – Involuntary Resettlement</b>	
<p><i>Project risk related to involuntary resettlement is not identified</i></p> <p>The project activities are planned at small scale and do not require land acquisition nor resettlement (economic</p>	

<p>or physical). Project implementation does not interfere with ownership rights. Full proposal development will include an assessment (further demonstration of this fact in the more detailed description of the activities) how the project activities will be aligned with the customary ownership system.</p>	
<p>ESP – <i>Protection of Natural Habitats</i></p>	
	<p>As the target areas are not per se identified at this stage the preliminary screening could not conclude on the presence in or near the project/programme area of natural habitats, and 2) the potential of the project/programme to impact directly, indirectly, or cumulatively upon natural habitats. (Even though the project will work directly on the restoration of such habitats in an EbA context).  <i>Risk:</i> Unidentified natural habitats in target areas and impact of restoration activities on natural habitats and landscapes (likelihood extremely low).  <i>Impact:</i> Natural habitat destruction due to project activities  <i>Mitigation:</i> At the stages of physical target area scoping the project formulation team will make a new assessment together with the communities and other stakeholders on 1) the presence in or near the project/programme area of natural habitats, and 2) the potential of the project/programme to impact directly, indirectly, or cumulatively upon natural habitats.</p>
<p>ESP – <i>Conservation of Biological Diversity</i></p>	
	<p>Vanuatu is party of the United Nations Convention on Biological Diversity. FLR promotes native, indigenous and non-invasive species to avoid interfering with biological diversity. As the species to be used for restoration are not yet fully identified, the project formulation team pledges to assess further at the next stage.  <i>Risk:</i> Spill over of invasive species (symbionts/parasites of restoration species) during transport to/from nurseries (likelihood low)  <i>Impact:</i> Restoration plots and other natural habitats sustain impacts from IAS.  <i>Mitigation:</i> during project consultations and activity design the biosecurity framework of Vanuatu will be reviewed and gaps will be identified on the project interface in order to avoid any alien species spill-over.</p>
<p>ESP – <i>Climate Change</i></p>	
<p><i>Project risk related to climate change is not identified</i>  The increased forested areas and vegetation cover act as net sink of national GHG emission. The project sets out explicitly win-win actions contributing to adaptation and mitigation. The increased adaptation potential will be further demonstrated in the full proposal development.</p>	
<p>ESP – <i>Pollution Prevention and Resource Efficiency</i></p>	
	<p>The main activities of the project with the potential to generate waste are nursery establishment and function and restoration per se.  <i>Risk:</i> Activity by-products poorly managed (likelihood low).  <i>Impact:</i> Waste and leaching of waste material deteriorate ecosystem quality near and around target areas.  <i>Mitigation:</i> The full project proposal will conduct a life-cycle analysis of all the materials necessary for nursery establishment and operation as well as restoration. An Environmental Management Plan will be proposed for waste/by-product management and for the environmental interface of project operations (use of resources such as energy and water for operations).</p>
<p>ESP – <i>Public Health</i></p>	
	<p>Initial screening could not identify potential health risks from project implementation.  <i>Risk:</i> unidentified health impacts at concept stage (likelihood extremely low).  <i>Impact:</i> If unaddressed they can impede project operations and delivery.  <i>Mitigation:</i> A health impact screening checklist will be developed and applied in compliance with relevant WHO practices including for the contemporary status and protocols for COVID-19 in Vanuatu at the stage of full project submission. WHO will be requested to contribute through UNCT prior or at inception.</p>
<p>ESP – <i>Physical and Cultural Heritage</i></p>	


	<p>Project risk related to physical and cultural heritage is not identified.  <i>Risk:</i> Cultural heritage sites in the proximity of the target area (likelihood extremely low)  <i>Impact:</i> Cultural heritage sites impacted by the project activities  <i>Mitigation:</i> Identification of presence of cultural heritage in or near the project areas. Screening of national and international instruments on cultural heritage. Description of measures during project operations to avoid impacts on cultural heritage.</p>
ESP – <i>Lands and Soil Conservation</i>	
<p><i>Project risk related to lands and soil conservation is not identified</i></p> <p>The project by nature works on the improvement of soil quality and the proposed method in FLR assumes practices that conserve the soil. It is not seen how the interface between the project and this ESP principle can facilitate negative impacts on soil quality. Further elaboration of the positive impacts of FLR on soil quality and degradation will be available in the full project proposal</p>	

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

### A. Record of endorsement on behalf of the government<sup>87</sup>

<p><i>Esline Garaebiti, Director General, Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Environment and Energy &amp; NDMO</i></p>	<p>Date: August 11 2021</p>
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### B. Implementing Entity certification

<p>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 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 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.</p>	
	
<p><i>Maher Salman</i> Implementing Entity Coordinator</p>	
<p>Date: August 6, 2021</p>	<p>Tel. and email: 0039 0657054718 Maher.Salman@fao.org</p>
<p>Project Contact Person: Maher Salman</p>	
<p>Tel. And Email: 0039 0657054718, Maher.Salman@fao.org</p>	

## Annex 1: NDA Letter of Endorsement

<sup>24</sup> 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.

GOVERNMENT OF THE  
REPUBLIC OF VANUATU MINISTRY  
OF CLIMATE CHANGE  
ADAPTATION, METEOROLOGY,  
GEO-HAZARDS, ENVIRONMENT &  
ENERGY & NDMO  
PMB 9074, PORT VILA  
VANUATU



GOUVERNEMENT DE LA  
RÉPUBLIQUE DE VANUATU  
MINISTÈRE DE L'ADAPTATION AU  
CHANGEMENT CLIMATIQUE, LA  
MÉTÉOROLOGIE, LES RISQUES  
GÉOLOGIQUES, ENVIRONNEMENT &  
ÉNERGIE & NDMO  
SPR 9074, PORT-VILA, VANUATU

TEL : (678) 22068

FAX : (678) 22068

Ref: PVMoCCA/NAB/UNFCCC-IPCC/1. B.75

Wednesday 11 August 2021

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

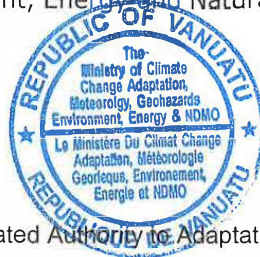
**Subject: Endorsement for Enhancing livelihood resilience in Vanuatu through forest and landscape restoration**

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

Accordingly, I am pleased to endorse the above project concept note with support from the Adaptation Fund. If approved, the project will be developed in the full proposal and be implemented by Food and Agriculture Organization of United Nations and executed by Ministry of Climate Change, Meteorology Geohazards, Environment, Energy and Natural Disaster in Vanuatu.

Sincerely,

Esline Garaebiti  
Director General & Designated Authority to Adaptation Fund





## Annex 2: Initial Gender Assessment:

114. **Gender baseline:** According to the VNSO (2021) in Vanuatu lives 152 345 men and 149 350 women (VNSO 2021a). Women's participation in the formal labour market stands at 40% for both private and public sector compared to 60% for men (DWA 2015). Women's share of employed people is 34% in rural areas (FAO & SPC 2019). According to the global gender gap index (2020) Vanuatu is placed on 126<sup>th</sup> position having a score of 0.638. The same 2020 index highlighted a major discrepancy in gender equality in Vanuatu: most women were self-employed or employed in the informal sector with relatively low qualifications. This means that they receive less pay for the results of their work (HRC 2019). Gender balance in leadership is also an issue in the private sector, where women hold only 3.4 percent of senior management positions. Women also less influence on political decision-making. In 1990, women held 4.3 percent of seats in Parliament, but in the 2016 election none of the 10 women candidates was elected (FAO & SPC 2019). The amendment of the Municipalities Act in 2013 and the introduction of a 30 percent quota for women's representation in all municipal councils is targeted to provide women with an opportunity to participate in the decision-making process on the local level, but the underrepresentation in political and public life of women is still preserved (HRC 2019) as they have to engage in traditional work such as childcare. There is a concern on the high dropout rates among girls at the secondary level of education whilst, a very limited number of girls is applying for tertiary education scholarships. Pregnancy can constitute of a reason for being expelled from school (HRC 2019). Due to the geographic dissemination of people in Vanuatu's islands, communities in rural areas have limited access to public services such as health care (FAO & SPC 2019). The community consultation with women underpinned important facts regarding a negative trend of educated women outmigration from rural areas. It is common in all the five islands that the educated women moved to urban centers while the average level of education for women living in rural areas has received primary education with a few high school drop-outs. However, while defining the roles of women in the project, women with stable jobs and salaries and education showed interest. Women with formal education qualifications serving as school teachers, local bank tellers, shop keepers, local conservation specialists and local project officers are keen to engage in the project and contribute to the implementation, information uptake and sustaining project result.
115. **Gender differences in agriculture:** Women and men participate in almost equal numbers in the agricultural sectors, although they may grow different crops and use different levels of technology. According to the gender assessment in the five involved islands. The primary role of women in rural Vanuatu is to manage their homes, that is to ensure there is food to eat, taking care of children and elders but yet dependent on men or their husband as head of their homes. As part of their management, they are playing active role in food production for their daily sustenance with excess to be sold in local markets. Therefore, if we are to quantify the level of power regarding the role women play in rural communities of these Five islands against men, it will be a 40 % for women and 60% for men. More women than men (49% and 41% respectively) are involved in the subsistence economy, which makes them more susceptible to poverty, climate change, disasters and other livelihood stresses (DWA 2015). Women have more workload than men because except working in the field they have to prepare products for sale and take on domestic duties. Women have less access to and control over their resources than men have at all levels of society in Vanuatu. Women in the fieldwork areas rarely participate on an equal base with men in community decision-making and have no control over customary land except through male family members. In 2019 Committee on the Elimination of Discrimination against Women, expressed concern that the customary landownership system did not guarantee women equal rights to landownership and inheritance. In Vanuatu still preserves discriminatory customs (entitlements of men as the customary owners) and traditional practices that affected the full enjoyment of those rights (HRC 2019). Women and men have quite specific roles in agriculture, whereas women take part in land preparation, planting vegetables, weeding, looking after and harvesting crops, tithing, and selling goods in markets.
116. The proposed AF Project is particularly promising, since women are the primary labour force in agriculture, and largely responsible for seasonal agricultural activities such as sowing, weeding, and harvesting fruits and vegetables. Men are primarily responsible for clearing ploughing the land. The diversified cropping pattern in project areas (East-Espiritu Santo, Pentecost, Efate, Tanna and Aneityum) is also advantageous in the sense that the peak periods requiring labor force (land preparation, sowing, transplanting, fertilizing, harvesting, etc.) can be evenly distributed over the season, thus allowing a more-or-less balanced and continuous demand for the labor force. As agricultural operations are mostly done by hired labor, this could provide relative stability for hired women. The positive trend of shifting to cash-crops is profitable also for small-scale holdings, however, it must be supported by increased productivity of the agricultural sector, more efficient use of sharply degrading natural resources, and improved knowledge of agricultural employees. The project has significant merit in agricultural development through climate-smart agricultural practices, provision of alternative income sources from forest and agriculture products, and strengthening market conditions and marketing organizations, which will be beneficial for women. This will have a stabilizing effect on agriculture while promoting a sustainable balance between agricultural production and ecosystem functions.
117. **Gender differences aggravated by climate change:** The lack of climate change adaptation has direct impact on women. Women and men have an equally important role to play in disaster preparedness, response, and recovery. After TC Pam, one of the key findings was that when women had more equal roles in decision making, this resulted in more effective disaster risk reduction activities "because both men's and women's voices and roles (were) respected". The appointment of women to the Community Disaster and Climate Change Committees (CDCCCs) also led to a higher

incidence of women and men working together and increased social inclusion at the community level (Webb, 2017). DRM becomes a very important issue. It is predicted that tropical cyclones will be less frequent but more intense. This fact will likely be requiring farmers to change their traditional crops for storm-resistant plants which will be supported by the proposed project. Natural disaster impacts have multiple implications on women, as the assessment study revealed a substantial gap between men and women regarding adoption of disaster risk management and practices, whereas men have adopted more as compared to women. Living in the country with a higher highest disaster risk (49.74) among 181 countries in the world (WRI 2020,) women, in particular who work in agricultural sector are exposed to land loss and loss of jobs. As climate change impact can be adapted only at farm management level, women employed in daily work and directed by farm owners have practically no means to mitigate the production risks. The project will provide multiple pathways for to release the burden on women. During the project formulation, it was a critical aspect to adopt an approach that is consistent with the recommendations from the Vanuatu Department of Women's Affairs. The consultation with women groups resulted the following recommendations that must be incorporated in the project design:

- when it comes to addressing climate change issues and disaster response; there has to be decision with common understanding between both men and women;
- women are more concern with the impact of climate change and disasters impacts on both agriculture and livelihood;
- women's traditional roles within the community, surrounding their comfort with speaking of their views to an audience and their lack of free time make it difficult to engage them in standard workshops or presentations;
- while youth are often engaged during consultations, ensuring that female youth are included is a challenge for the same reasons as outlined above for women in general;
- there are few women, youth or people with disabilities taking up roles within each local authorities.

118. The gender-related risks that identified for the concept note stage vis-à-vis project implementation have to do mostly with ensuring active participation and ownership of women in all stages of the project cycle (design, implementation, monitoring, evaluation, post-project sustainability).

- Women's power and role in decision-making process is rather poor in Vanuatu. Their heavy workloads negatively affect their time to rest and prepare for the next day and reduce their ability to engage in education and training. Due to this the project runs a risk of having less women than men engaged in its processes and activities.
- Women in rural areas have less access to modern technologies. This leads to the risk of them receiving information and notifications from early-warning systems much later than the urgency requires. This aspect can affect project activities and pilot tests / demonstrations.
- Women have less access to and control over resources than men. They have no control over customary land except through male family members.<sup>88</sup> Their involvement in the project can be restricted by this weak position.
- The traditional role of women in Vanuatu is more in home management and taking care of children. This is another aspect that can affect women's participation in the project as they depend on men, fathers and husbands and they are not expected to lead.

Being aware of these risks the full project proposal will endeavor to assess the risk intensity and propose risk mitigation measures for the smooth implementation of the project in a Gender Equity and Women's Empowerment context as well.

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<sup>88</sup> HRC (2019): Compilation on Vanuatu. Report of the Office of the United Nations High Commissioner for Human Rights, Working Group on the Universal Periodic Review Thirty-second session