



FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: Village Based Coastal Adaptation And Resilience In Lombok Province Of West Nusa Tenggara

Country: Lombok Climate Change Consortium (LC3)

Thematic Focal Area: Indonesia

Type of Implementing Entity: National Implementing Entity

Implementing Entity: Kemitraan – Partnership for Governance Reform

Executing Entities: Lombok Climate Change Consortium (LC3)

Amount of Financing Requested: 998,739 (in U.S Dollars Equivalent)

Letter of Endorsement (LOE) signed: Yes No

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

Stage of Submission:

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

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

In case of a resubmission, please indicate the last submission date: Click or tap to enter a date.

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

Project/Programme Background and Context:

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

1. West Lombok is one of the districts that are vulnerable to tidal flooding' threats. Areas that are vulnerable to tidal flooding' threats are in Lembar and Sekotong subdistricts. Based on data from the information system and the climate change vulnerability index (SIDIK) in 2018, West Lombok Regency is included in the vulnerability class 4 (vulnerable)¹. This is also reinforced by data from the Disaster Risk Index (DRI) presented in the National Board for Disaster Management Report (2023). Referring to DRI (2023), approx. 11,159 people will be exposed to extreme waves and abrasion in West Lombok with physical losses of up to US\$ 8.7 million and social losses of around US\$ 5.3 million, as well as 115 hectares of the natural environment damaged with an estimated loss value of up to US\$ 0.5 million. The total value of losses from the tidal flood disaster in the affected areas reached US\$ 14.6 million. In addition, the Exposure and Sensitivity Index of West Lombok is included in the 'medium' category (VIDS, 2018) and the 'high' risk index for disaster threats according to the DRI (2021) as shown in Figure 1 below:

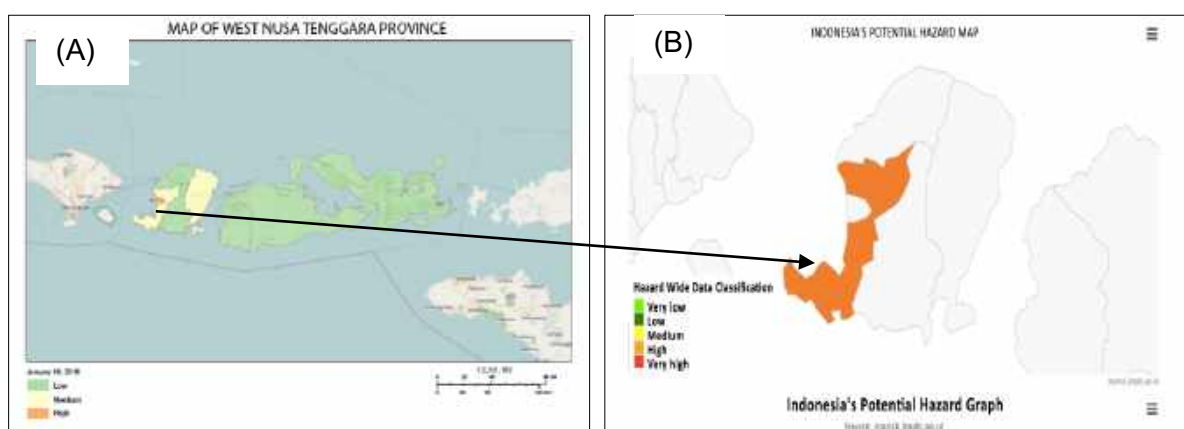


Figure 1. (A) Vulnerability category of West Lombok based on VIDS (2018) and (B) Vulnerability category of West Lombok (DRI, 2021)

2. According to the BMKG data series, there have been changes in rainfall, the number of rainy days, and air temperature over the last 10 years (NTB Climate Change Adaptation Plan, 2019). The range of rainfall in the Lembar and Sekotong Districts is between 1500-2500 mm/year. The air temperature has increased by an average of 0.2°C every 10 years, the number of rainy days decreased with greater rainfall intensity while increasing erratic rain cycle. Changes of these climatic parameters resulted in sea anomalies and fluctuations in plant production which are sensitive to rainfall changes (Figure 2).

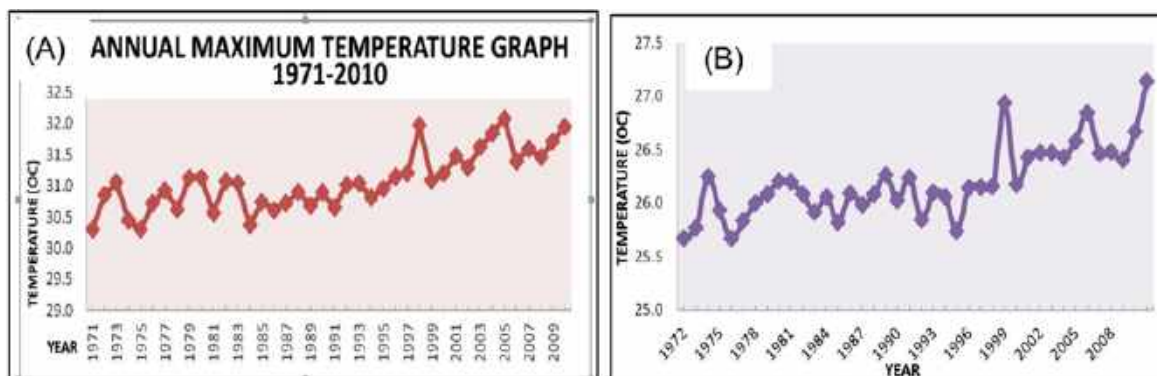


Figure 2. Graph of average temperature and average maximum temperature in 1971-2009
Source: Climatology Station of West Lombok, 2016

¹ <http://sidik.menlhk.go.id/>

- The figure above shows the trend of increasing temperature from 1971 to 2009 which averaged 0.5°C and the maximum temperature increase was around 0.8°C. There is also an increase of the cumulative temperature from 30.5°C in 1971 to 31.5°C in 2009. Thus, there has been an increase of 1°C in temperature over the last 40 years. The increased temperature is relatively fast because according to Houghton (1997), the time tolerance for an increase of 1°C is around 100 years. It is predicted that the temperature has increased abnormally. How about the rainfall? If the temperature tends to increase, the rainfall looks to fluctuate (Figure 3).

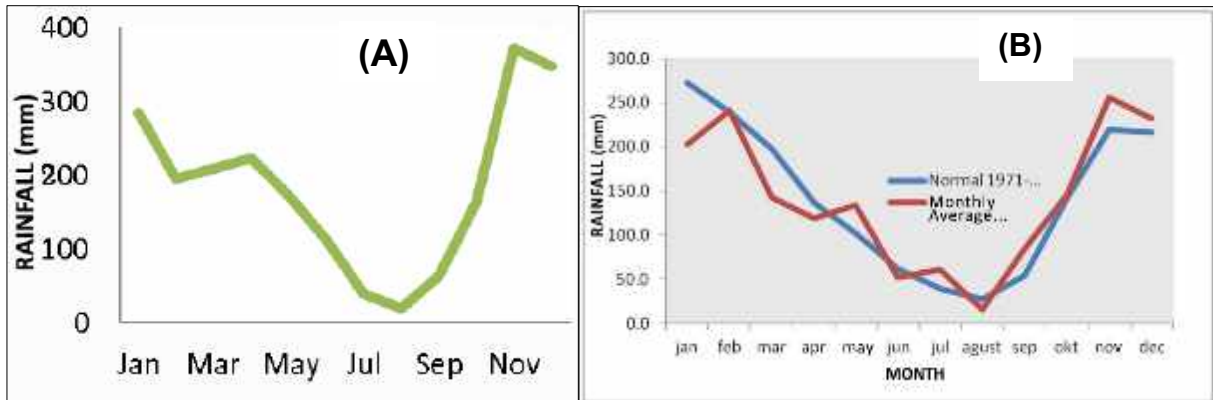


Figure 3. Average monthly rainfall in 1971-2010 (A) and average monthly rainfall in 2010 – 2020 (B)
Source: BMKG of West Lombok, 2021

- Based on the figure above, there is a tendency to increase the amount of rainfall over the last 10 years (B) rather than the previous 20 years (A). The highest amount of rainfall was in November which reached an average of 380 mm/month compared to the previous 20 years of around 280 mm/month. The implication of high rainfall can trigger flooding and affect the possibility of increased tidal intensity.
- Based on the IPCC's models, the Ministry of Environment-GTZ-WWF (2009) projected sea surface temperature on Lombok Island will increase by 3°C-3.5°C in 2100 with the assumption that sea level will rise between 60-70 cm with the most affected areas are City of Mataram and District of West Lombok. Under the conditions of multiple hydro-oceanographic hazards (tide sea water + sea level rise + Niño-Southern Oscillation + storm waves), the submerged area of Lombok Island reaches 5,635 hectares. Markum et al (2008) also reported changes in the coastline of Lombok Island getting closer to the mainland by 2-10 m over the last 10 years (Figure 4).

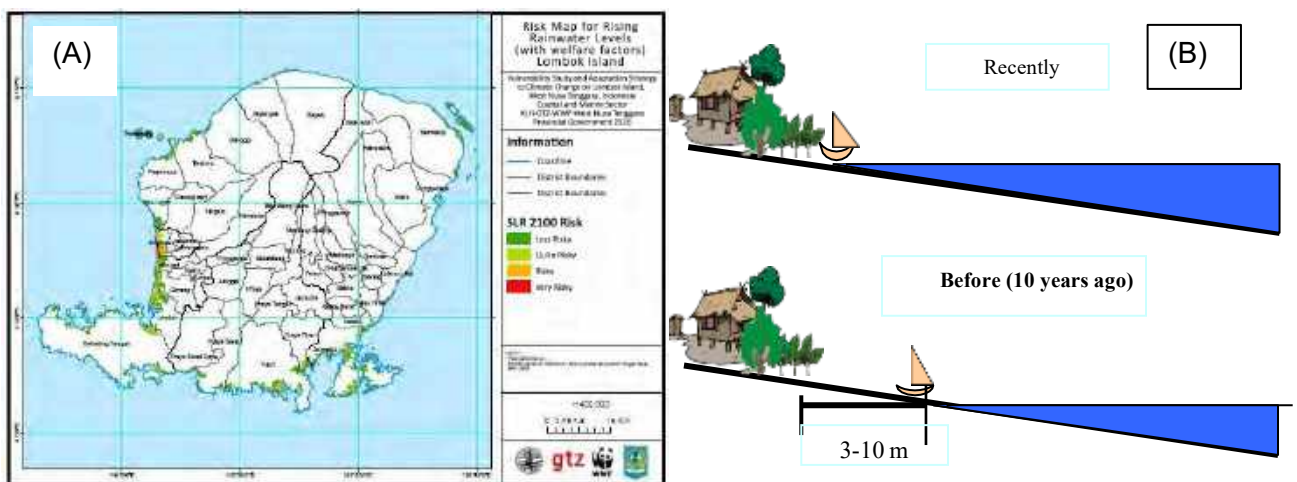


Figure 4. (A) Projection of affected-areas by sea level rise until 2100 (WWF, 2009) and an overview of 10-year coastline shift in Lombok Island (Markum et al, 2008).

- The coastal area of Lombok is the most vulnerable to the climate change impacts if linked with various phenomena such as physical changes of area, behavior changes in fishing by fishermen, and changes

in livelihood patterns. Markum et al (2008) also reported changes in three coastal areas of Lombok Island, including Lembar, were indicated by 1) the distance from the shoreline to settlements is closer, 2) a decrease of days at sea by around 40% from the normal situation of 15-20 days per month due to high waves and tidal flooding, and 3) decreasing catches both in quantity and quality of fish while non-fisherman job opportunities are very limited.

- There are two sub-districts that are very vulnerable to tidal flooding (rob) in West Lombok Regency: Lembar and Sekotong. According to local people (key informants), tidal flooding occurs 2-3 a year in a duration of more than 24 hours. The intensity of its impact is medium to high with a water level of 30-60 cm (RCRA, 2023). This hazard is repeated around November, February, and May (BPBD NTB, 2019). In fact, the current frequency of tidal flood is monthly in 2-3 days during the full moon with a duration of 3-5 hours with low to moderate impact and seawater level reaches 10-30 cm until inundates settlements.



Figure 5. Tidal flooding in sub-district of Lembar on May 2022 and October 2023

- At the village level in the two sub-districts, there are 4 (four) villages classified as being medium up to high risk of tidal flooding if referred to the vulnerability assessment (see table 1).

Table 1. Analysis of community-level risks to tidal flooding disaster in coastal areas at sub-districts of Sekotong and Lembar, district of West Lombok, Province of West Nusa Tenggara

Sub-district	Name of Village	The condition of mangroves and their value for the community	The impact of tidal flood	The functioning of capital social	The level of climate change-induced risk based on livelihood assets
Sekotong	Cendi Manik	Very High	Moderate	Very High	Moderate
	Central Sekotong	Very High	High	High	Moderate
	West Sekotong	Moderate	High	High	High
Lembar	South Lembar	Very High	Very High	Very High	Very High

Source: Rapid Climate Risk Assessment (2023)

- Based on data the information system and the climate change vulnerability index (SIDIK) in 2018, there are 3 villages that have vulnerabilities with a fairly vulnerable category (score 3), including Cendimanik

Village, West Sekotong and Central Sekotong, while South Lembar is included in the not vulnerable category (score 1). The 2018 SIDIK assessment is in line with the results of the Rapid Climate Risk Assessment. Based on the results of the interview, South Lembar Village has experienced an increase in vulnerability seen from the aspect of the impact of flash floods and the impact of climate change on people's livelihoods with community assessments in the high category (table 1).

- Not only fishermen, but the tidal flood also affected farmers because it has inundated the area up to 300 m from the shoreline affecting around 350 families. Along the coastal areas of Lembar and Sekotong are agricultural lands with mostly gardens and dry fields (70%), with the rest are rice fields (30%). The total agricultural area of the 6 coastal villages in Lembar and Sekotong is 1,461 ha or 10.5% of the total land area. Estimated, the impact of tidal flooding (rob) is able to inundate about 20% or 292 ha covering settlements and agricultural land in coastal areas (gardens and rice fields). The value of losses suffered by farmers as tidal flood-related reaches a total of US\$ 175,000 per year due to rice harvest failure, damaged gardens, and livestock diseases. Losses were mainly suffered by villagers with high vulnerability (Figure 6).

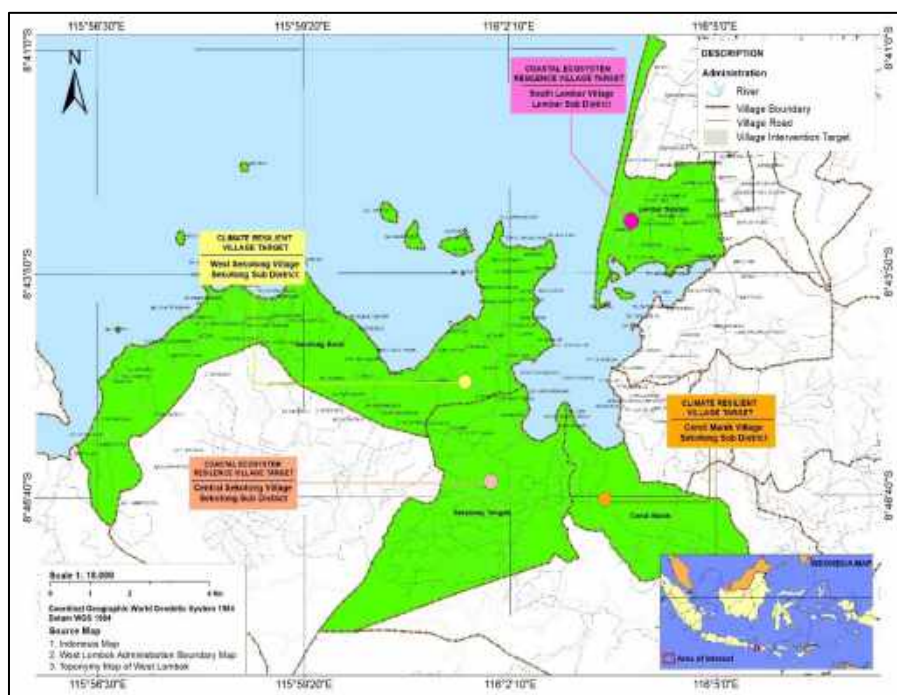
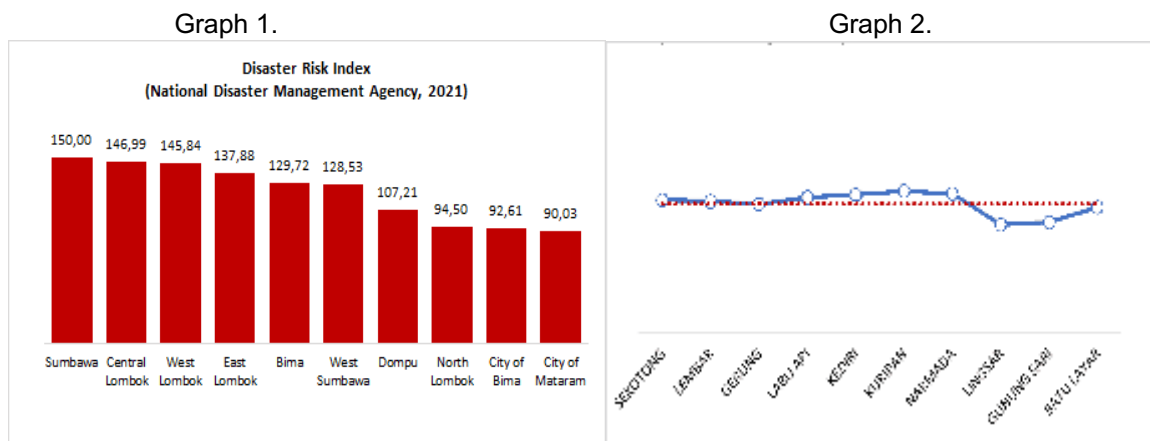


Figure 6. Map of project locations and intervention in West Lombok District

- Village-based resilience is 'a condition' or 'order' in which the community and its government can identify threats-related climate change impacts in their area and organize local resources to reduce vulnerability while increasing capacity to mitigate their climate-related risks. These capabilities will be implemented in village development planning and budgeting, which includes prevention, preparedness, disaster risk reduction, and capacity-building efforts for post-emergency recovery. The leading actor in initiating and implementing this CDRV is the village community, both men and women, by affirming vulnerable and marginalized groups at every activity. Refers to the results of Participatory Rapid Climate Risk Assessment, there are four (4) villages were viable to be project sites i.e. South Lembar, Cendi Manik, Central Sekotong, dan West Sekotong. The selection and determination of villages was based on consideration of four (4) key aspects as follows: the condition and value of mangroves, the impact of tidal waves, the functioning of social capital, and the level of climate change-induced risk based on livelihood assets.
- Village-based local climate resilience institutionalization adopts the mechanism of the Disaster Resilient Villages (Destana²) development as enacted in the Regulation of the Head of the National Disaster Management Authority (BNPB) No. 1/2020 with an emphasis on climate-induced disasters. The idea of Climate Disaster Resilient Villages (CDRV) directs to increase the community and government village's

² Desa Tangguh Bencana, Badan Penanggulangan Bencana Nasional, 2020

capacity to independently adapt and deal with climate-induced disaster threats and recover quickly from the adverse effects if a climate-induced disaster strikes them. The determination of districts as the project site is based on the Disaster Risk Index (BNPB, 2021). West Lombok was the third regency with the highest-risk index in West Nusa Tenggara Province (see graph 1). Furthermore, the identification of Lembar and Sekotong as targeted districts was based on the Vulnerability and Sensitivity Index (VSI) as published in the Vulnerability Index Data Information System by the Ministry of Environment and Forestry (2018). The VSIs of the two districts were higher than the average VSI of the districts in West Lombok (see graph 2).



Source: Analyzed from DRI (BNPB, 2021) and SVI (2018)

- Based on Rapid Climate Risk Assessment (RCRA) conducted in 2023 shows that each village has a different level of vulnerability based on 4 aspects of RCRA. A brief description of these aspects in each village as shown in the following matrix:

Table 2. Description and score level of vulnerability of these aspects in each village

Villages	Key Aspects		Score	Total
South Lembar	The condition of mangroves and their value for the community	Mangroves are one source of income for communities around the coast. They catch crabs, shellfish, and fish under the mangroves and use them for fish farming or silvo-fisheries. Apart from that, they also made the mangrove area a beach tourist attraction, managed by the Tourism Awareness Group in collaboration with Village-Owned Enterprises. The community also relies on their income from mangrove nurseries. They sell seeds to some buyers, including the West Nusa Tenggara Province Watershed Management Agency for the Forest and Land Rehabilitation program.	Very High (5)	20
	The impact of tidal flood	Robts occur 2-3 times a year triggered by floods with a duration of 1-3 days and water levels reaching 30-60 cm which inundate settlements. The tidal flood impact is categorized as very high with the number of affected heads of families around 495 people who live in two (2) sub-villages.	Very High (5)	
	The functioning of capital social	The function of social capital is founded when community members act to mitigate and adapt to tidal flood disasters. In sub-village Cemara, the community constructed embankments independently, led by the local lead of the sub-village. The length reached approximately 2 km, with a height of 0.5m and is estimated to have cost US\$ 51,724.1 - 68,965.5	Very High (5)	
	The level of climate change-induced risk based on livelihood assets	In February 2023, floods occurred in 5 (five) sub-villages South Lembar with 529 affected families and one child died because he was hit by wooden debris during the flood.	Very High (5)	

Cendi Manik	The condition of mangroves and their value for the community	Cendi Manik Village has quite a large mangrove area and the community uses it for more diverse purposes than other villages: mangrove tourism, shellfish and crab harvesting, silvofisheries, ponds, and beach tourism. Village Tourism Awareness Group manages mangrove ecotourism in collaboration with Village-Owned Enterprises. The community also carried out mangrove seedling and they sell seeds to government	Very High (5)	16
	The impact of tidal flood	Robbs occur every month on 2-3 days during the full moon for 3-5 hours. The intensity of the tidal impact is classified as moderate, with water levels of 10-30 cm inundating settlements. There are 2 (two) affected-sub village with a total of 208 heads of families.	Moderate (3)	
	The functioning of capital social	The function of social capital is founded when community members act to mitigate and adapt to tidal flood disasters. The Cendi Manik community is actively working together to repair the tidal embankment	Very High (5)	
	The level of climate change-induced risk based on livelihood assets	Risk of loss of milkfish ponds covering an area of approximately 25 hectares with a plot size range between 100 m ² to 400 m ² . The level of loss due averages US\$ 517.2 per year.	Moderate (3)	
Central Sekotong	The condition of mangroves and their value for the community	The government and community of Central Sekotong village use the mangrove area as an ecotourism spot which is managed by Village Tourism Awareness Group in collaboration with Village-Owned Enterprises. In fact, Central Sekotong is the only village whose people are able to process mangrove seeds into mangrove coffee.	Very High (5)	18
	The impact of tidal flood	The community explains that the frequency of occurrence and impact of tidal floods has increased in the last 10 years. The distance between the settlement and the surrounding coastline is getting closer. Currently, the residential area is already on the shoreline. If the waves rise as high as 2 meters, sea water enters and floods the house. The tidal flood impact is categorized as high with the number of affected heads of families around 394 people who live in three (3) sub-villages.	High (5)	
	The functioning of capital social	The community has exceptional social capital to participate in activities related to the public interest. They will help each other when one of them is experiencing difficulties or when they have interests that must be fought for together. Community members still adhere strongly to social norms for harmony and order.	High (4)	
	The level of climate change-induced risk based on livelihood assets	Every time a tidal flood has occurred, fishermen not able to fish in the sea, which results in lost time earning around 3-5 days a month or 60 days/year for each fisherman. If their average net income is US\$ 2.1-3.4 for every fishing, there is a loss of income of US\$ 124.1-206.9 per year/person	High (4)	
West Sekotong	The condition of mangroves and their value for the community	The condition of the mangrove forest is the same as the village of South Lembar, but its use by the community is slightly more diverse such as for tourism purposes, collecting shellfish/crabs, silvofisheries, and beach tourism.	Moderate (3)	15
	The impact of tidal flood	The frequency of occurrence and impact of tidal floods has increased in the last 10 years. The distance between the settlement and the surrounding coastline is getting closer. Currently, the residential area is already on the shoreline. If	High (4)	

		the waves rise as high as 2 meters, sea water enters and floods the house. The tidal flood impact is categorized as high with the number of affected heads of families around 429 people who live in two (2) sub-villages.		
	The functioning of capital social	The community has exceptional social capital to participate in activities related to the public interest. They will help each other when one of them is experiencing difficulties or when they have interests that must be fought for together. Community members still adhere strongly to social norms for harmony and order.	High (4)	
	The level of climate change-induced risk based on livelihood assets	Every time a tidal flood has occurred, fishermen not able to fish in the sea, which results in lost time earning around 3-5 days a month or 60 days/year for each fisherman. If their average net income is US\$ 2.1-3.4 for every fishing, there is a loss of income of US\$ 124.1-206.9 per year/person	High (4)	

Source: Rapid Climate Risk Assessment (2023)

Socio economic context

14. Based on Rapid Climate Risk Assessment (2023), the total population of vulnerable villages by tidal flooding is 34,756 people (heavy affected 1,729 people (5%), moderately affected 5,213 people (15%), lightly affected 27,804 people (80%). Most of their income sources are fishermen (50%) and farmers (18%). For farmers, they are landowners, farm laborers, cattle farmers, and artisanal mining. Rice production in coastal areas is around 3-4 tons/ha or smaller than the upstream and middle areas of 4-6 tons/ha (NTB Provincial Agriculture Office, 2019). The low rice production as impact of lack water conditions which are influenced by tides and the intensity of tidal waves. The average tenure of agricultural land is only 0.2-0.5 ha with the total income of farmers around US\$ 600 – 1,014.0 per year including from livestock-raising and artisanal mining.
15. For fishermen, they are small fishermen with small canoes (using paddles) and middle fishermen with motorized canoes (ketinting). The income of fishermen is more uncertain than that of farmers. In normal seawater conditions, fishermen usually go to sea with a range of 15-20 days a month. If the waves are medium and high, the number of days at sea decreases. For small fishermen, they go to sea with an allocation of 6-12 hours. Currently, fishermen's productive days are decreasing. They have productive time between 6-7 months a year and the rest are mostly unemployed (Markum, 2008).

Table 3. Description of coastal community livelihood and estimated income in 6 affected villages by tidal flooding at sub-districts Lembar and Sekotong

Jobs	Combination of income sources	Estimated Amount of Income (US\$)
Farmer	Land farming – Livestock raising	600.00
	Land farming – Livestock raising – services	931.00
	Land farming – Livestock raising – artisanal mining	1,014.00
Fisherman	Fishing – Land farming	848.00
	Fishing – Land farming – Livestock raising	1,262.00
	Fishing – artisanal mining	1,076.00

Source: Rapid Climate Risk Assessment (2023)

16. The impact of the tidal flood is the loss of job opportunities for fishermen, the risk of crop failure and crop failure for farmers, damage to garden crops, and disease in livestock. Another impact is the disruption of school activities by reducing children's learning time at school from 2 to 5 days when the rob occurs, as well as causing various diseases or even triggering epidemics. There are seven (7) diseases that often appear due to tidal flood: leptospirosis, diarrhea, digestive tract diseases, upper respiratory tract infections, typhoid, skin diseases, dengue fever or malaria. Data from the Health Service of West Lombok (2022) has recorded 2,741 diarrhea sufferers in Lembar and Sekotong during 2022. In turn, the negative impact of tidal floods will lead to weak community resilience in the socio-economic livelihoods of affected communities.

Project Context

17. Based on the description of the factual conditions above and aligned with the Presidential Regulation (PERPRES) No. 98 of 2021 concerning the Implementation of Carbon Economic Value for the Achievement of National Contribution Targets and Greenhouse Gas Emission Control in National Development, NTB Climate Change Adaptation Action Plan 2019-2023 (BAPPEDA NTB, 2019) and the National Climate Resilience Development Policy 2020-2045 (BAPPENAS, 2020), we argued that this project interventions are needed to respond these. The management of disasters and vulnerabilities in coastal areas has been mandated in the NTB Climate Change Adaptation Action Plan 2019-2023 on the explanations related to the marine sector and small islands (p.100). At least, there are three main issues to be addressed as the root of problem in the targeted site. *First*, the occurrence of tidal flooding has always been repeated in the last 20 years. This means that efforts to reduce tidal flooding' impacts by various parties have not been effective; *Second*, the tidal flooding has impacted on the weakening of community's livelihoods due to the loss of job opportunities and the decline in productive activities as well as disruption of education and public health aspects; *Third*, repeatedly tidal waves, not only due to natural anomalies induced by climate change, but also the unavailability of adequate infrastructure for supporting it, both naturally and artificially.
18. Actually, the Government has been concerned to overcome the tidal flooding disaster through the initiation of villages development programme such as Disaster Resilient Villages (DESTANA), Pro-Climate Villages (Proklim), and Tourism Villages. Through this project, facilitation will be carried out Pro-Climate Villages (Proklim) in Central Sekotong Village, West Sekotong and South Lembar. In addition to the project's contribution to the achievement of the national contribution target for climate change adaptation (Proklim), facilitation will also be carried out in 50 villages in West Lombok Regency to be registered as Proklim villages and assistance to become Proklim Villages with Primary status. This is in accordance with the mandate of Presidential Regulation No. 98 of 2021. Disaster management initiatives in four villages in Lembar and Sekotong districts through the determination of village status as shown in the following Table 4.

Table 4. Disaster management initiatives in four villages in Lembar and Sekotong districts through the determination of village status

District	Name of Village	Disaster Resilient Village (Destana)	Climate Hamlet Program (Proklim)	Tourism Village
Sekotong	Cendi Manik	√	√	√
	Central Sekotong	√	-	√
Lembar	West Sekotong	√	-	√
	South Lembar	√	-	√
Source		BPBD ³ NTB Province, 2021	DLHK ⁴ NTB Province, 2022	West Lombok Regency Website

19. Absolutely, various determinations of the status of the village can contribute to disaster reduction in the region. However, the fact is that the level of disaster vulnerability in the area has not changed significantly. Thus, it is essential to construct more carefully the efforts of physical and non-physical arrangements related to the efforts to overcome the disaster vulnerability. The urgency is that program interventions will need to be carried out ensures that the community is safer from the tidal disaster, the community has an institutionalized adaptation attitude, and the community is supported to have a way of getting around (choices) to create economic and social resilience when the tidal disaster comes unavoidable. In addition, supporting the normalization of the carrying capacity of ecosystems and the environment in coastal areas is vital in strengthening climate adaptation and resilience in the targeted villages.
20. One of the limiting factors in the West Lombok Region in disaster management is the small Regional Budget (APBD⁵). In 2020 the West Lombok APBD amounted to IDR1.9 trillion (West Lombok Regional

³ Regional Disaster Management Authority = *Badan Penanggulangan Bencana Daerah (BPBD)*

⁴ Environment and Forestry Office = *Dinas Lingkungan Hidup dan Kehutanan (DLHK)*

⁵ Regional Budget = *Anggaran Pendapatan dan Belanja Daerah (APBD)*

Regulation No. 03/2020 on the Regency's APBD). Support for the Adaptation Fund (AF) project is highly expected to stimulate the tidal disaster management objectives described above. AF project support can finance the provision of adaptation infrastructure, strengthening community capacity, financing for increasing community income, and strengthening community and village institutions.

Project/Programme Objectives:

List the main objectives of the project/programme.

21. This project aims to:
1. Develop a village-based climate-resilient institutionalization mechanism in the coastal area of West Lombok
 2. Improved and established adaptive capacity for rural coastal communities to climate-induced hazards
 3. Improve the resilience of the coastal ecosystem to strengthen community livelihood resources

Project/Programme Components and Financing:

Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the attached instructions for a detailed description of each term.

For the case of a programme, individual components are likely to refer to specific sub- sets of stakeholders, regions and/or sectors that can be addressed through a set of well-defined interventions / projects.

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)
1. Develop a village-based climate-resilient institutionalization mechanism in the coastal area of West Lombok	Output 1.1. Institutions, policy and planning at the village level that are responsive to climate change disaster impacts	<ul style="list-style-type: none"> • Increased village governance, policy instruments and capacity on climate resilience measures 	252.773
	Output 1.2 Village community action plan on climate-related disaster risk reduction		51.730
2. Improved and established adaptive capacity for rural coastal communities to climate-induced hazards	Output 2.1 Increased knowledge and skill of the targeted communities, including women and vulnerable groups on climate adaptation actions	<ul style="list-style-type: none"> • Increased rural coastal communities' knowledge and awareness on adaptive measures on climate-induced hazards 	132.905
	Output 2.2 Models of coastal climate adaptation are developed and demonstrated at the targeted community		129.968
3. Improve the resilience of the coastal ecosystem to strengthen community livelihood resources	Output 3.1. Rehabilitation and enhancement of coastal ecosystems to adapt to climate impacts at selected sites are demonstrated	<ul style="list-style-type: none"> • Increased the carrying capacity of coastal ecosystems to serve as natural defences and livelihood source 	252,931
			42,000

	Output 3.2. Community income-generating and productive economic activities are increased	towards climate impacts <ul style="list-style-type: none"> Increased sources of income of targeted beneficiaries especially the vulnerable communities in coastal areas 	
4. Project / Programme Activities Cost			862.307
5. Project/Programme Execution cost			58,190
6. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			78,242
7. HO			171.948
Amount of Financing Requested			998.739

Projected Calendar:

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

Milestones	Expected Dates
Start of Project/Programme Implementation	August 2024
Mid-term Review (if planned)	July 2025
Project/Programme Closing	June 2026
Terminal Evaluation	July 2026

PART II: PROJECT/PROGRAMME JUSTIFICATION

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

The project has 3 components, namely:

- Component 1. Strengthened governance and institutional capacity.**
22. This component support the Project objective: Develop village-based climate resilient institution to address climate risks and impacts. This will contribute to Project Outcome 1: Increased village governance, policy instruments, and capacity on climate resilience measures, that is aligned with Adaptation Fund Outcome No.2. Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses.
- Component 2. Capacity building on adaptation measures.**
23. This component will support the project objective: improve and establish the capacity of rural coastal communities to climate-induced hazards. The Project will contribute to Project outcome: increased rural coastal communities' knowledge and awareness of adaptive measures on climate-induced hazards, that is aligned with Adaptation Fund Outcome No.3. Strengthened awareness and ownership of adaptation and climate risk reduction processes at the local level.
- Component 3. Coastal ecosystems resilience and sustainable livelihoods**
24. This component will contribute to the Project objective: improve the resilience of coastal ecosystems to strengthen community livelihood. This will contribute to Project outcome 3: increased the carrying capacity of coastal ecosystems to serve as a natural defense and livelihood source towards climate impacts and Outcome 4: Increased sources of income of targeted beneficiaries especially the vulnerable communities in coastal areas. These Project outcomes are aligned with the following AF outcome: Outcome 5. Increased ecosystem resilience in response to climate change and variability induced stress and Outcome 6. Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas. All components consist of objectives, outputs and activity descriptions as shown in table 5 below.

Table 5. List of project component, objectives, outputs and activities description

Project Component	Objectives	Outputs	Activities Description
Component 1. Strengthened governance and institutional capacity	Objective 1. Develop a village-based climate-resilient institutionalization mechanism in the coastal area of West Lombok	Output 1.1. Institutions, policy and planning at the village level that are responsive to climate change disaster impacts	<ol style="list-style-type: none"> 1. Recruitment of village volunteers for climate-related disaster preparedness. Recruitment of village volunteers minimum of 30 persons for each village (at least 30% of them are women) who are selected by: (i) identification of criteria candidates through informal discussion with village officers, social leaders, and community members; (ii) interview with short-listed candidates; (iii) announcement of selected-volunteers in meeting for the socialization of this project in each village. 2. Participatory climate risk analysis (PCRA) by community focused discussion in 3 days for each targeted village to identify and assess aspects related to hazard characteristics, existing capacities, vulnerabilities, risk mapping, as well as risk level assessment for priority hazards. The key participants of PCRA are 35

Project Component	Objectives	Outputs	Activities Description
			<p>people who are representatives of village volunteers, village officers, community leaders, youth leaders, etc. PCRA will be the basis to formulate Village Community Action Plan on Climate Resilience as a designed activity in outcome 2.1 below.</p> <ol style="list-style-type: none"> 3. Establishment of a village climate disaster preparedness work team from village volunteer members and added with other community components. This work team will be justified by the Head Village's decree. 4. Training packages for village government and village climate disaster preparedness work team. 5. Formulation of local policies on climate resilience (both at village and district levels) 6. Facilitation for formulating climate disaster-related guidelines/plans/standards (contingency plan, early warning system); 7. Formulation of policy brief/policy paper to strengthen climate resilience actions or policies at sub-national level 8. Technical assistance on policy making and governance process at subnational level to support climate adaptation measures at village level (including strengthening knowledge management systems)
		<p>Output 1.2 Village community action plan on climate-related disaster risk reduction in coastal areas</p>	<ol style="list-style-type: none"> 1. Dissemination of PCRA's results to the wider community through presentation of work team representative in workshop for each village 2. Community Action Planning (CAP) on climate resilience through community discussion series and field workshop. Formulation of CAP also considers input and comments in previous workshop regarding PCRA' results (activity 1). CAP on climate resilience is the main activity in output 2.1 that will be implemented through community discussion series and workshop for each village. The key participants of CAP process are village climate disaster preparedness work team, village government, social leaders, and vulnerable groups in each village. Community Action Plan (CAP) on climate resilience also contains implementation of Participatory Coastal Area Spatial Planning integrated with climate-induced disaster resilience 3. Facilitation on integration Community Action Plan (CAP) with the village government's annual plan and budget through discussion series with village government.

Project Component	Objectives	Outputs	Activities Description
			<ol style="list-style-type: none"> 4. Facilitation of annual village development planning forum to decide on village development priority programs in the current year including CAP on climate-induced disaster resilience 5. Advocacy of CAP to sub-national government policies both at district and provincial levels through lobbying and discussion series by inviting sub-national government representatives both district and provincial levels.
<p>Component 2. Capacity building on adaptation measures</p>	<p>Objective 2. Improved and established adaptive capacity for rural coastal communities to climate-induced hazards</p>	<p>Output 2.1 Increased knowledge and skill of the targeted communities, including women and vulnerable groups on climate adaptation actions</p>	<ol style="list-style-type: none"> 1. Trainings for targeted community on climate adaptation and resilience. The specific theme of training on climate adaptation and resilience is CRSAL (Climate Resilience Sustainable Agriculture Livelihood) in district level with targeted participants from district government staff, village government, village climate disaster preparedness work team, and NGOs staff by considering gender balance. Participants of this training will be selected as facilitators of the community-based climate field school 2. Conducting climate field school on adaptation actions on coastal areas conditions (mangrove, land-based farming in coastal, salt farming), consists of preparation of training modules by the expert team; Training of Facilitators (ToF) for community-based climate field school; in-class for 6 times in each targeted community, and preparing demonstration plots for climate adaptation (field practices). 3. Conducting simulation/exercise to respond to climate induced disaster by testing the contingency plans and early warning system that have been previously prepared (see output 1.1 activity 6) involving approximately 100 people in each village. As part of this activity, standard equipment for village climate disaster preparedness work team will be provided i.e field vest, t-shirt, field cap, boat shoes, handy talkie (HT), preparing evacuation route, preparing for assembly point, and safe evacuation sites. 4. Developing and implementing a learning platform and process for communities related to climate adaptation actions through regular learning forums in each village and cross visits to other areas. 5. Procurement of climate-induced disaster information and documentation systems: risk map of PCRA; personal computers/laptop for web/portal

Project Component	Objectives	Outputs	Activities Description
			<p>development; Sellphone to record and send data; ombrometer to measure rainfall; stationaries; digital cameras.</p> <p>6. Documenting knowledge and best practices of community actions in climate change by producing Stories of Change (SoC) from targeted groups, videos, and books. All of these will be uploaded and disseminated by information system web/portal integrated with the existing village information system.</p>
		<p>Output 2.2 Models of coastal climate adaptation are developed and demonstrated at the targeted community</p>	<ol style="list-style-type: none"> 1. Conducting analyses and model development on climate adaptation in coastal areas to identify, analyze, and design of model by hiring the expert team with taking into account PCRA's results and CAP. 2. Procurement of climate-induced adaptation facilities/equipment: construction of fishpond, fish seed, stationaries (silvofishery in mangrove); crops/plant seed, land for small scale pilot, stationaries (climate-smart land-based farming in the coastal); infrastructures for ecotourism village information center. 3. Demonstration of climate adaptation models of coastal climate adaptation at least 3 models i.e. silvofishery in the mangrove, climate-smart land-based farming in the coastal, and ecotourism services. 4. Documentation best practices and lesson learned from climate adaptation models in coastal area by producing practical guidebook and videos.
<p>Component 3. Coastal ecosystems resilience and sustainable livelihoods</p>	<p>Objective 3. Improve the resilience of the coastal ecosystem to strengthen community livelihood resources</p>	<p>Output 3.1. Rehabilitation and enhancement of coastal ecosystems to adapt to climate impacts at selected sites are demonstrated</p>	<ol style="list-style-type: none"> 1. Participatory coastal area spatial plan integrated with climate-induced disaster resilience. Participatory coastal area spatial plan (PCASP) is the main activity in this output to describe and design patterns or forms of coastal area spatial use in more detail including land use mapping integrated with risk map as produced in the previous PCRA and also Community Action Plan (CAP) on climate-induced disasters. The difference with CAP is that PCAP will prepare on landscape-oriented especially the mangrove management areas rather than the village administration approach as CAP 2. Facilitation on development of community-based nurseries for mangrove rehabilitation 3. Mangrove planting in 20-hectare areas at selected sites. 4. Develop infrastructure packages for climate-disaster risk reduction in mangrove

Project Component	Objectives	Outputs	Activities Description
			<p>areas; infrastructures: rob-resistant embankments</p> <p>5. Monitoring and evaluation for mangrove rehabilitation</p>
		<p>Output 3.2. Community income-generating and productive economic activities are increased</p>	<ol style="list-style-type: none"> 1. Value chain analyses to develop the potential supply chain for smallholder fisheries and coastal community livelihood by hire expert team 2. Identification of business opportunities and product development through study use mixed method (both participatory/qualitative and survey/quantitative technique); 3. Facilitation of training packages for sustainable smallholder fisheries and livelihood: good practices on fisheries cultivation; diversification of products/processing; marketing. 4. Facilitation small-scale business licensing and product certification 5. Procurement of equipment for productive economies and businesses i.e production machines, packaging machines, etc; 6. Technical assistance for developing market-demand commodities and products 7. Facilitation on access to finance (including venture capital) to support communities' businesses by developing network or collaboration with banks or private sectors.

25. The sustainable livelihoods (SL) approach is a framework of this proposed project to ensure the achievement of climate resilience by considering the potential and diversity of local community livelihood sources in the coastal areas of West Lombok. Refers to the SL approach, it can be described that individuals, households, or communities usually rely on various livelihood sources that are owned and can be accessed and controlled to sustain their lives. These livelihood resources are constructed into five assets: human, natural/environmental, physical/ infrastructures socio cultural, and economic. Ownership, access, and control over livelihood resources are unequally distributed and often modified by social roles and social relation patterns (such as gender, economic class, age, ethnicity, religion, and social position). All livelihood resources have the potential to be lost and damaged if affected by a disaster or climate crisis. The ability of individuals, families, or communities to maintain their existence will be disrupted if one or more livelihood assets are lost or damaged, especially for vulnerable or marginalized groups. Coastal communities live in prone areas and are affected by climate variability or extreme weather. Most of them relied on household incomes from unadaptable livelihood sources due to their high vulnerability to the negative impacts of climate change. Therefore, one of the main components of this proposed project is to improve coastal community livelihood resources in West Lombok to be more adaptive and resilient under climate change stresses by assessing community risks, vulnerabilities, and capacities using a sustainable livelihood approach.
26. Improving the quality of coastal ecosystems is one of the key elements to taking account in the development of village-based climate resilience institutionalization mechanisms regarding to its existence as a landscape (natural resources) and community's life-scape (socioeconomic-related aspects). This argument is based on the objective fact that damaged coastal ecosystems due to various pressures, both natural-factors and man-made, will further exacerbate to vulnerability situation of the environment and humans to tidal flooding threats when sea level rise occurs. The measures to improve ecosystem quality will begin with the formulation of coastal areas' spatial plans through consultation and

discussion with the community which will be integrated with deliverable results of previous climate risk analysis (including vulnerability and capacity assessment) under tidal flooding hazard. This participatory coastal area spatial plan includes agreements and determination of protection and cultivation zones. Within this component, the project will also facilitate demonstration activities on coastal restoration and rehabilitation through mangrove planting as an effort to reduce vulnerability to tidal threats while rehabilitating the mangrove ecosystems that function as potential sources for livelihood activities, so the community becomes more adaptive and resilient to climate change impacts. In addition, mangrove restoration and rehabilitation are an innovative approach for community livelihood strategies that can be implemented under local agro-ecological. In the designed project activities, some models of coastal community livelihood diversity that will be intervened in parallel with mangrove restoration and rehabilitation are climate-smart coastal community agriculture; coastal ecotourism; processing fishery, and farming products for women's groups. In addition, a tidal flood or an abrasion barrier building will be constructed.

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

Economic, Social, and Environmental Benefits.

1. Economic and Social Benefits

27. Economically, this project directly impacts the livelihoods of coastal communities through a 10-15 revenue increase in the next 5 years from income sources that are more diverse, adaptive, and resilient to climate change stressors based on optimizing local coastal potential. The range of fishers' income is US\$ 450-850 per year (small fishers) and US\$ 900-1,200 million per year (middle fishers). Meanwhile, the farmer's income is US\$ 600-1,014 per year. The following is detail of targeted increasing income for each affected jobs by this project:

Table 6. Targeted increasing income each affected jobs by this project (in next 5 years)

Source of Incomes	Briefly Description	Average of Income per year (US \$)	Intervention	Estimation of Income (US\$)
Fishing	<ul style="list-style-type: none"> - The average fish catch is 3-5 kg per day with a selling price of US\$ 6.2-10.3 and the average number of days at sea is 20 days/month. - Catch crabs and shellfish found in the area mangroves almost every day for both men (crab catchers) and women (shellfish catchers). The average income is US\$ 2.1 – 3.4 for 20 days / month 	2,648.28	<ul style="list-style-type: none"> - Mangrove rehabilitation - Increasing capacity for fish processing - Silvo-fishery 	2,980,0
Farming	<ul style="list-style-type: none"> - Dry land farmers with an average land ownership of 0.5 ha. - Two planting seasons (1 planting season for rice and the other for secondary crops and vegetables. - Rice yields are 1.5 - 2 tons/ha for own consumption. Likewise for secondary crops and vegetables. 	2,234.5	<ul style="list-style-type: none"> - climate-smart coastal community agriculture. - Increasing capacity for farming products processing 	2,513.4
Small Micro Enterprises (SMEs)	<ul style="list-style-type: none"> - Selling in small kiosks/home stalls and around tourist locations (basic necessities, snacks, processed products, food and drinks) 	1,717.24	<ul style="list-style-type: none"> - coastal ecotourism - processing farming products for women's 	1,931.9

	<ul style="list-style-type: none"> - In the weekend, sales volume reached 3-5 times rather than normal days. - Normal daily income ranges from US\$ 5.2 – 6.9, and at peak times reaches US\$ 20.7/day. 		groups	
Fishponds	Milkfish and crab ponds are managed by local communities with an area of around 100 m2	1,241.4	Wall retaining tidal flood	1,396.6
Services in Ecotourism areas	Ecotourism service provider	579,31	Coastal ecotourism	651,72

28. The total targeted beneficiaries of the project are **1,729 persons (1,119 men and 610 women)**, distributed in **four (4) villages** in Sekotong and Lembar sub-districts. The sub-districts are included in the vulnerable coastal areas to adverse impacts of climate change as shown in the following table:

Table78. Targeted beneficiaries of the project

Sub-District	Village	Population			Targeted Beneficiaries (5 % of total)	Distribution of targeted beneficiaries	
		Men	Women	Total		Man	Women
Sekotong	West Sekotong	4,055	4,736	8,791	440	290	150
	Central Sekotong	4,664	4,699	9,363	468	308	160
	Cendi Manik	2,831	2,868	5,699	285	185	100
Lembar	South Lembar	5,436	5,287	10,723	536	336	200
TOTAL		16,986	17,590	34,756	1,729	1,119	610

29. The social benefit of this project is improving local governance on climate-induced disaster risk management in coastal areas by ensuring the social participation of representatives of all community groups without exception, both men and women especially the vulnerable groups (poor people, persons with disabilities, etc.) to participate, engage, and voice out their aspirations, advice, suggestions, and expectations regarding climate adaptation and resilience actions align with climate justice principles by fulfilling their rights especially those who are affected by climate change negative impacts. It is acknowledged that the impact of climate-related crises has been distributed unfairly across communities as a result of differences in social status, gender, income, etc. Likewise in coastal communities of West Lombok, especially in project location villages.

Environmental Benefits

30. This project will improve the environment around the areas affected by tidal floods, both in natural and artificial environments, and enable the development of environmentally friendly products. The project will improve the natural environment by rehabilitating and planting mangroves in coastal areas covering 20 hectares (intensively) and 20 hectares (enriching) to build environmental resilience in resisting tidal waves and flood currents.
31. Another ecological improvement is the availability of support in constructing infrastructures or facilities of tidal flood retaining embankments along 2 Km (South Lembar), 350 meters (Central Sekotong), and boat mooring spots (25 points) which will be constructed on the coastline adjacent to settlement areas in order to minimize abrasion/tidal flood damage. The other benefit of environmental restoration is to develop various processed products by prioritizing fewer chemicals or organic products. In addition, mangrove rehabilitation also provides opportunities for village governments to develop coastal ecotourism areas resilient to climate-induced disasters.



Figure 7 Existing condition of embankments in South Lembar village

Gender and Vulnerable Groups Benefits

32. In the context of gender and social inclusion (GESI), the expected benefit of this project is to increase community involvement, both men and women, especially vulnerable and marginalized groups (including a person with disabilities), in discussing and planning actions related to climate resilience and adaptation. In addition, the project will implement gender and social inclusion mainstreaming by providing 'space' for poor people, both men and women, as well as other vulnerable groups as right holders to claim their rights in access, participation, and as beneficiaries of this project with expected impact, is support on the sustainability of resilience their livelihoods. This project requires the involvement of at least 30% of women's representatives in every activity. RCRA results (2023) showed that tidal floods have disrupted the livelihood activities both of men and women, which further implications to cut the cash flow of household income. For women, local disasters increase their burden related to domestic work due to the loss of sources of livelihood (the washing away of salt ponds and the destruction of mangroves as habitats for shellfish, shrimp, and crabs). Women must also work hard to find ways/strategies to meet their family's consumption needs when their main sources of livelihood are threatened by disaster.
33. Gender statistics of West Lombok Regency (2022) recorded the number of Women Headed Household (WHH) around 11.9 percent compared to Men Headed Household (MHH) of 88.11 percent. Some causes of women as head household are as follows: divorce because their husband has died, divorce because their husband lives, as the second or third wife of a polygamous husband, the husband under condition impossible to earn needs. RCRA revealed that WHH plays the central role as breadwinner for family members from various sources of income. They rear the family's livestock and control sales decisions and price determination. If a tidal flood occurs, WHH evacuates their livestock to a safe location without waiting for volunteers to help them. In the village of Cendi Manik, there are women heads of families who are exemplary salt entrepreneurs and sell their harvested salt through cooperatives. They received the assistance of salt production equipment because they were active as cooperative members. In the village of South Lembar, salt ponds can no longer be produced due to continuous tidal attacks. The strategy of WHH is to buy coarse salt from other places and process it into acceptable salt for sale. Besides that, they also sell fish at the local market or go around to houses in the village.
34. Gender roles are relatively less recognized as determining factors in taking actions and decision-making related to climate change adaptation at the household level. Men have played a vital role as the primary breadwinner, and they are responsible for ensuring family income stability. Meanwhile, women are income managers and have a supporting role as the second line of income seekers by selling in local stalls and markets. In disaster situations or crisis events, women play an essential role as the mainstay of fulfilling the family's economic needs. They have wider access to non-bank credit institutions rather than men. Women have control over the use of family assets and savings, such as selling small livestock, pawning goods, borrowing money or rice from neighbors or relatives, and looking for additional work (such as seeking and collecting shellfish). In addition, they also have the crucial task of ensuring

adequate food and nutritional security for family members daily. Patterns of family consumption do not change even though they are experiencing crisis situations due to disasters or when the head of the family (male) cannot generate income.

Table 8. Matrix of segregation gender roles based on various activities in each type of work at the site project

Activities	Level of Dominance Gender-based Role		Description
	♂	♀	
Fisheries			
Fishing in the sea	Very High (5)	Very Low (1)	Fishing in the sea is generally worked by men and there are also several men with disabilities as fishermen
Collecting shellfish, shrimp, crabs	Very Low (1)	Very High (5)	Women generally collect shellfish, shrimp or other pond products when the sea water is low. These products are sold when their catch is considered large enough (minimum 1 kg).
Selling fish or others	Very Low (1)	Very High (5)	The identified marketing channels for seafood are selling to local markets, through collectors/ retailers, and directly to consumers.
Crop cultivation and raising livestock			
Raising cattle and goat	High (4)	Medium (3)	<ul style="list-style-type: none"> - Livestock is considered as a family savings - There are slight variations in the roles of men and women in raising livestock; - Generally, men are dominant in raising and selling livestock. Meanwhile, women tend to help when their husbands are at sea or not at home. - In the case of Women-Headed Households, they play a major role in caring for the family's livestock
Raising poultry (chicken, duck etc)	Low (2)	High (4)	
Sale of large livestock (cattle/goat) or poultry (chicken, duck etc)	High (4)	High (4)	Women-headed households also make decisions for sale their cattle.
Determining livestock selling prices	High (4)	High (4)	<ul style="list-style-type: none"> - In livestock sales, the selling price is determined based on mutual agreement between the husband and his wife - Livestock are usually sold when the family needs cash, especially when a crisis occurs (including a disaster) because there is no family income from their main or side jobs. - Large livestock (such as cattle or goats) are sold when they need money for large expenses (child's marriage or the cost of the child's education to a higher level). Meanwhile, small livestock/poultry will be sold when the family does not have income for daily consumption needs.
Crop cultivation	High (4)	Medium (3)	In crop farming, men and women play a role in cultivation from land preparation to harvesting and selling yields. For sales, men usually meet and negotiate with buyers (collectors). Meanwhile, women play a role in managing income from selling harvests to meet family needs
Small and Medium Enterprises (SMEs) and Ecotourism Activities			
Coarse salt farming	High (4)	Low (2)	
Artisanal mining	Very High	None	Be workers (laborers) in artisanal mining

Activities	Level of Dominance Gender-based Role		Description
	♂	♀	
	(5)		are generally men in the sites location. Meanwhile, there are no women participated due to the mine spots are remote and difficult to access People consider this job to be a source of income for fulfilling daily needs when the main job's income is inadequate
Refined salt farming	Very Low (1)	Very High (5)	
Small traders, mobile sellers, or retail sellers in the local market	Very Low (1)	Very High (5)	
Online sales	Medium (3)	Medium (3)	Online traders are generally young men and women
Culinary	Low (2)	High (4)	
Laundry	Very Low (1)	Medium (3)	
Hand crafts	Very Low (1)	Medium (3)	
Small traders in tourism areas	Medium (3)	Medium (3)	Disabled people and youth also get access to these jobs

35. Regarding current climate change adaptation-related actions, vulnerable communities and other marginalized groups (men and women) in almost all study areas still need to be fully aware that they must adapt to uncertain climate variability and change impact. These rights holders complain that the government's measures to solve their problems have not been optimal, from the preparedness stage, emergency response when a disaster occurs, and post-disaster recovery. Affected people by tidal floods often do not receive services to fulfill their daily consumption needs because their economic activities are stopped due to tidal surges. This situation repeats in every year. There is an exciting story amidst this situation. The lack of duty-bearers attention encouraged local leaders in one of the hamlets affected by the tidal flood to collect community funds independently to construct a tidal surge-resisting to prevent flooding into settlement areas. Regarding gender and social inclusion, the issue is that women, people with disabilities, and other vulnerable groups are increasingly vulnerable to the negative impacts of climate change due to their low level of knowledge and skills to adapt when government efforts are not directed at improving their adaptive capacity.

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

36. The tidal flood caused fishermen can't go to sea for fishing because they prioritized keep the safety of their families. There is a loss of time at sea of 3-5 days for each fisherman in a month or as much as 60 days/year. If their average net income per trip to sea is US\$ 2.0-3.3, they lose an income of US\$ 120.0-200.0 year/person. Rob also has an impact on reducing the work motivation of farmers and other service providers (builders, gold diggers, etc.). If the average wage of farmers or construction workers or gold-diggers is US\$ 4,7/day, then they lose income of up to US\$ 280.0 per year/person. Losses of rice fields due to flooding by sea water up to 50% of total production. If the average land production capacity is 2 tons/ha at a price of US\$ 140.0/ha, then the potential loss is US\$ 140.0/ha per year (lowland rice) and US\$ 140.0/ha per year (upland rice). Losses from milkfish ponds and salt ponds affected approximately 70 ha of ponds with plot sizes ranging from 10x10 m² to 20x20 m² and investment between US\$ 666.7-1,333.3/pond. If a flood occurs, production failure can reach 50-100% due to fish being washed away of the pond. The value of economic losses due to flooding for pond farmers reaches US\$ 333.3-666.7/year.
37. From the results of the cost-effectiveness analysis, financial support from the adaptation fund is effective and feasible in reducing the negative impact of tidal floods on community livelihoods from environmental, social, and economic aspects. With a project value of US\$ 998,739 and an initial cost of US\$ 25,000 dollars (total is US\$ 1,023,739 dollars or US\$ 1.02 million), the calculated benefit value in the next 10 years will reach US\$ 1.67 million or B/C ratio of 1.62 (value B/C ratio>1 or considered feasible). If the total loss and damage value of tidal flood (physical, socio-economic, and environmental) in is calculated

at US\$ 14.6 million, the benefit value of this project activity will contribute 11% to reduce potential losses in the next 10 years. The negative impact of tidal floods on community livelihoods can be reduced more quickly if funding support is available from other parties (multi-level government, NGOs, and community self-help).

Tabel 9. The 1st Intervention: Associated Mangrove Aquaculture (AMA)

Component	Without Project	Proposed Project
Coverage areas	There are no areas to be planted or enriched	20 hectares (intensively planting) and 20 hectares (enrichment)
Cost	Zero cost	US\$ 134.988,5
Impact on coastal ecosystem	The 40-hectare mangrove forest area is damaged and unable to protect the ecosystem from tidal flood threats	The 40-hectare mangrove forest area was rehabilitated by planting and enrichment
Economic Impact	The economic value of potential losses is around US\$ 137,931.0	The value of economic benefit is around US\$ 67,126.4 per year and the Break Event Point (BEP) will be achieved in the 2 nd year. In the 3 rd year, beneficiaries will receive economic benefits.
Others	Increasing community vulnerability to the impacts of climate change and the unavailability of alternative sources of livelihood	Increasing community resilience to the impacts of climate change through providing alternative sources of livelihoods and improving mangrove cover

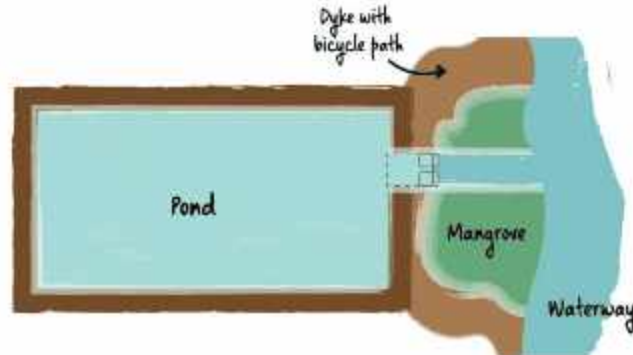
Tabel 10. The 2nd Intervention: Embankments Construction

Component	Without Project	Proposed Project
Coverage areas	There is no construction of retaining embankments and boat mooring spots to protect areas from tidal floods.	Tidal flood retaining embankments along 2 Km (village of South Lembar) and 350 meters (Central Sekotong Village) as well as 25 points for boat mooring spots will be constructed
Cost	Zero cost	US\$ 146,577.4
Impact on coastal ecosystem	Increasing sea waves and tidal floods trigger coastal erosion/abrasion which causes changes in the beach's function as a place to prevent sea waves as well as loss of habitat for marine flora and fauna.	The coastal ecosystem is maintained as a comfortable habitat for marine flora and fauna. In addition, the function of the beach can also be developed as an ecotourism spot or entertainment site for the community
Economic Impact	The value of losses is estimated to reach US\$ 1.51 million in the next 10 years (based on present value with a discounted factor of 10 %)	With an investment of US\$ 146,577.4, the value of economic benefits will be received about US\$ 1.34 million in the next 10 years (based on present value with a discounted factor of 10 %)
Others	The impact on community livelihoods is the threat of risks: crop failure, livestock losses, disease outbreaks, damage to settlements, loss of jobs, and decreased income.	Overcome crop failure and livestock death; address public health problems; overcome settlement damages; prevent loss of jobs for fishermen, small enterprises of ecotourism, and others services.

Note: Without project is an existing condition that occurs based on the RCRA was study. Based on information from the village government and local government of West Lombok Regency, there has been no financing from Associated Mangrove Aquaculture (AMA) and Embankments Construction in the next 2 years.

Layout AMA

Layout 1. Single pond



Layout 2. Complex AMA system for better water management

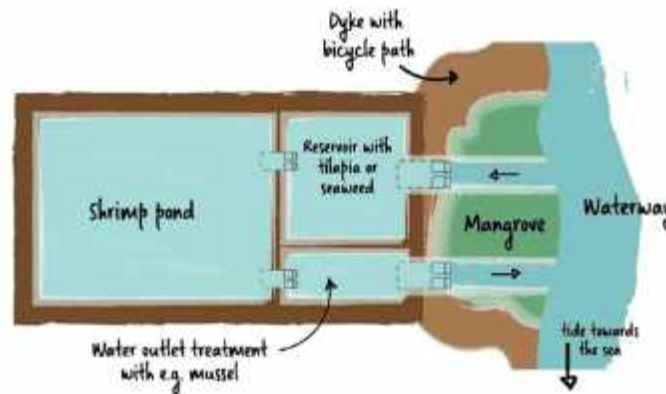


Figure 7.4 complex AMA system for better water management (© Reef Ekstra)

Side view design

HAT = Highest Astronomical Tide;
 HHWS = Highest High Water Spring;
 MHWS = Mean High Water Spring;
 MSL = Mean Sea Level;
 MLWS = Mean Low Water Spring;
 LLWS = Lowest Low Water Spring;
 LAT = Lowest Astronomical Tide

(source: **Technical Guideline #4 Associated Mangrove Aquaculture**)

38. The proposed project is considered to provide benefits toward the environmental, social, and economic resilience for the community livelihoods of 1,729 persons in the 4 (four) villages as targeted sites. From the project value of US\$ 998,739, the beneficiaries will receive financing of US\$ 577,64 per person or US\$ 249,685 per village. Then, the value of obtained benefits in the next 10 years is US\$ 963.94 per individual or US\$ 416,665.21 per village. On the other hand, this project also provides multiplier effects, including preserving coastal ecosystems, increasing public knowledge, maintaining regional food security, increasing employment opportunities, and developing tourist areas.
39. Potential sources of funding support to finance project activities and project sustainability will be supported from village funds of US\$ 21.429, community self-help US\$ 42.857, budget from the Regional Budget through several technical OPDs including the Public Works Service, the Tourism Office, the Regional Disaster Management Agency amounting IDR 2 billion (US\$ 142.857). Other potential support from the private sector includes hotels, homestays and Indonesian shipping companies (PELINDO) in the amount of IDR 1 billion (US\$ 71.429).

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

40. Nationally Determined Contributions (NDC) of Indonesia: This proposed project will contribute to Indonesia's commitment on climate adaptation by enhancing climate resilience of coastal areas and small islands West Nusa Tenggara, particularly in Lombok Island. In the national context, this project will contribute to the GHG emission reduction target of 26% and up to 41% with international support. This project objective supports the *Nawacita* Mission towards a low-carbon and climate-resilient development direction, with climate change adaptation and mitigation as an integrated and cross-sectoral priority in the national mid-term development plan. The proposed project will do so by applying these strategies: (1) developing village-based local climate resilience institutionalization mechanisms in the coastal area of West Lombok, 2) Improving community livelihoods that are resilient and adaptive to climate change, 3) Increasing the carrying capacity of ecosystems.
41. Indonesia's National Climate Adaptation Plan (RAN API). The project will support Indonesia's National Adaptation Plan (RAN-API) prepared by BAPPENAS in 2021, especially in Marine and Coastal Priority Sector in terms of: i) Infrastructure: by combining Community-based Adaptation (CbA) approaches; and Capacity building: by providing alternative livelihood for small-scale fishermen during extreme weather. It will also refer to The Ministry of Environment and Forestry Regulation No. P.33, 2016 about Guidelines on Climate Adaptation Action. This project will provide inputs for the Climate Adaptation Plan.
42. Indonesia's Adaptation Communication. The Project will contribute in strengthening and demonstrating the eight pillars of NDC Roadmap Adaptation strategies particularly on strengthening policy instruments for climate change adaptation and disaster risks reduction in coastal areas, integrating climate adaptation into development planning and financial mechanisms at village and subnational level, strengthening local capacity by best practices in coastal climate adaptation and application of adaptive technology for climate impacts in coastal areas.
43. In the sub-national context, this project will contribute to strengthen the following sustainable development policy and strategy:
 1. Governor Regulation No. 54/2019 regarding Climate Change Adaptation (API⁶) Regional Action Plans (RAD⁷),
 2. Governor Regulation No. 51/2012 regarding regional action plans to reduce greenhouse gasses (GRK⁸),
 3. Regional Regulation No. 12/2017 regarding zoning plans for coastal areas and small islands in NTB, concerning poverty reduction strategies, the implementation of this project supports efforts to improve community livelihoods that are resilient and adaptive to climate change in coastal areas so that this is very much following the NTB gubernatorial Regulation No. 29/21 concerning poverty alleviation

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

44. Relevant national policies/regulations to this project, as well as the compliance to AF Environmental and Social Policy are described in below:

⁶ Climate Change Adaptation = *Adaptasi Perubahan Iklim (API)*

⁷ Regional Action Plans = *Rencana Aksi Daerah (RAD)*

⁸ Greenhouse gasses = *Gas Rumah Kaca (GRK)*

Table 11. Relevant national policies as well as the compliance to AF ESP

Output	AF ESP	Relevant Rules, Regulation, Standards and procedures	Compliance procedure and authorizing offices
1.1.	1,8,9,10,11,14	<ul style="list-style-type: none"> ● Law No. 6 of 2014 on Village ● Minister of Home Affairs Regulation No 20 of 2018 concerning village financial management ● Village Regulation, Development of Disadvantaged Regions and Transmigration No. 6 of 2021 concerning the Village Income and Expenditure Budget ● Regulation of the Minister of Villages, Development of Disadvantaged Regions and Transmigration No.6 of 2022 concerning Village Community Institutions ● NTB Provincial Regulation No. 2 of 2008 regarding the management of coastal areas and small islands and the NTB Provincial Regulation No. 9 of 2014 regarding disaster management as stated in the 2019-2023 Regional Action Plan (RAD API) ● Regent Regulation No. 2 of 2021 concerning Village Authority. ● Regent Regulation No. 49 of 2021 concerning Priority for Use of Village Funds. 	<p>Ministry of Home Affairs, Ministry of Villages and Disadvantaged Regions, NTB Provincial Government, West Lombok Regency Government</p>
1.2.	1,3,4,8,9,10,11,14	<ul style="list-style-type: none"> ● Law No.24 of 2007 concerning Disaster Management ● Law No. 6 of 2014 on Village ● Government Regulation No. 27 of 2021 concerning the Implementation of the Maritime and Fisheries Sector ● Government Regulation No 22 of 2021 on the Implementation of Environmental Protection and Management ● Ministry of Home Affairs Regulation No 114 of 2014 on Guidance for Village Development ● Regional Regulation No.9 of 2014 concerning Regional Action Plans for Disaster Risk Reduction ● BNPB Head Regulation No. 1 of 2012 concerning General Guidelines for Disaster Resilient Villages ● Regulation of the Head of BNPB No.2 of 2012 concerning General Guidelines for Disaster Risk Assessment ● BNPB Regulation No.5 of 2017 	<p>Ministry of Villages and Disadvantaged Regions, Ministry of Environment and Forestry, Ministry of Maritime Affairs and Fisheries, Ministry of Home Affairs, National Disaster Management Agency (BNPB), Provincial Government of West Nusa Tenggara, West Lombok District Government</p>

		<p>concerning the Preparation of Post-Disaster Rehabilitation and Reconstruction Plans.</p> <ul style="list-style-type: none"> ● BNPB Strategic Plan for West Lombok Regency Government for 2019-2024. 	
2.1.	2,3,4,8,9,10 11,12,14	<ul style="list-style-type: none"> ▪ Law no. 27/2007 concerning the management of coastal areas and small islands ▪ Government Regulation No. 27 of 2021 concerning the Implementation of the Maritime and Fisheries Sector ▪ Presidential Regulation no.98 of 2021 concerning the Implementation of Carbon Economic Value for the Achievement of National Contribution Targets and Control of Greenhouse Gas Emissions in National Development (Implementation of efforts to achieve NDC targets through the implementation of climate change mitigation and climate change adaptation) 	Environment and Forestry Agency Provinsi West Nusa Tenggara, Ministry of Maritime Affairs and Fisheries, Provincial Government of Provinsi West Nusa Tenggara
2.2.	8,9,10,11,14	<ul style="list-style-type: none"> ▪ Law No 26 of 2007 on Spatial Planning ▪ Government Regulation No. 27 of 2021 concerning the Implementation of the Maritime and Fisheries Sector ▪ The Decree of the Governor of NTB No 561-685 of 2021 regarding the regional minimum wage standards for the province of NTB. 	Ministry of Maritime Affairs and Fisheries, National Planning and Development Agency, NTB Provincial Government, West Lombok district government.
3.1.	2,3,4,5	<ul style="list-style-type: none"> ▪ Law no. 27/2007 concerning the management of coastal areas and small islands ▪ Government Regulation No. 27 of 2021 concerning the Implementation of the Maritime and Fisheries Sector ▪ Regulation of the Minister of Maritime Affairs and Fisheries No.3 of 2019 regarding community participation in implementing the protection and empowerment of fishermen, fish cultivators and salt farmers 	Ministry of Maritime Affairs and Fisheries, Office of Maritime Affairs and Fisheries of NTB Province
3.2.	2,4,11	<ul style="list-style-type: none"> ▪ Government regulation No.7 of 2021 concerning facilitation, protection and empowerment of cooperatives, and micro, small and medium enterprises ▪ Technical guidelines Government incentive assistance to increase business/production capacity of tourism business 	Ministry of Small and Medium Enterprises (UMKM), Ministry of Manpower, NTB Provincial Government

		actors and productive economy No.HK.01./2/Juknis/DII/2020 Ministry of Tourism and Creative Economy	
3.3.	1,2,3,4,5,8,9, 10,11,12,14	<ul style="list-style-type: none"> ▪ Law no. 27/2007 concerning the management of coastal areas and small islands ▪ Law no. 32 of 2009 concerning environmental protection and management ▪ Law no. 13/2003 concerning manpower ▪ Government Regulation No. 27 of 2021 concerning the Implementation of the Maritime and Fisheries Sector ▪ Ministry of Marine and Fisheries Decree No 24 of 2016 on the Procedures for Coastal Areas and Small Islands Rehabilitation ▪ Minister of Environment and Forestry Regulation No. 33 of 2016 concerning guidelines for preparing climate change adaptation actions as well as contained in the RAN API and NDC-APIK roadmap. 	Ministry of Fisheries and Maritime Affairs, Ministry of Environment and Forestry, Ministry of Manpower, NTB Provincial Government

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

45. Coastal community development initiatives in Lembar and Sekotong Sub districts have been implemented since 2012. Support for policy advocacy for the management of coastal areas and small islands through the preparation of draft regional regulations has been supported in the 2012 IMACS Project supported by IFAD in 2013-2017. Several strategic programs from the central government have also been implemented, including disaster-resilient villages and climate village programs. However, the project implemented did not entirely cover the 6 villages as proposed in this proposal.
46. Based on that, the proposed proposal can be declared as not overlapping with the previous projects because the proposed project focuses more on 1) on adaptation and resilience of village-based coastal areas, 2) increasing community participation to reduce the impact of tidal disasters, 3) creating other sources of livelihood for the community and 4) increasing the carrying capacity of the ecosystem to reduce the impact of the tidal disaster.
47. There are several interesting lessons from the initiatives that have been carried out by previous projects, namely 1) the Regional Regulation on the management of coastal areas and small islands (PWP3K) in West Lombok Regency provides guidelines as a direction for the management of coastal areas, 2) Starting to grow awareness and knowledge of the community regarding the importance of coastal ecosystems, 3) the emergence of community leaders who have a concern for the preservation of coastal ecosystems.

Table 12. Project initiatives that have been implemented in Lembar and Sekotong sub-districts

No	Project	Goal	Year	Funding Sources	Potential synergies & collaboration
1	Indonesian Marine and climate Support Project (IMACS)	Facilitation of Draft Regional Regulations (Raperda) regarding the management of	2012	IMACS dan Gadjah Mada University	The project will leverage the information of climate change information in coastal areas and updated through Project intervention. The Project

		coastal areas and small islands (PWP3K) in West Lombok Regency			will also advocate for policy uptake on coastal areas management using the draft regulation and studies facilitated by IMACS
2	Coastal community empowerment project coastal Community Development Project (CCDP)	Empowerment of coastal communities through improving the economy of the community in South Lembar Village	2013-2017	CCDP -IFAD, Bappenas dan Marine and Fisheries Ministry	The Project will cascade and upscale the intervention to other villages from the activities carried out in CCDP sites
3	Ecotourism Development in Eat Mayang Area, Lembar District	Protection mangrove ecosystem and guiding mangrove cultivation independently	2013	Marine and Fisheries Ministry	The Project will cascade and upscale demonstration activities on ecotourism to other villages from the activities carried out in Ministry project sites
4	Disaster-resilient tourism village development	Provision of infrastructure and community empowerment in the village of South Lembar, Central Sekotong, Cendi Manik, West Sekotong	2013	BPBD NTB dan Palang Merah Indonesia (PMI)	The project will update the baseline information and cascade intervention to develop disaster resilient tourism villages in other villages (other than covered in BPBD programme)
5	Climate Village program	Increase public understanding of climate change and its impacts so that all parties are encouraged to take concrete actions that can strengthen resilience to climate change and contribute significantly to GHG reduction in South Lembar Village, Central Sekotong, Cendi Manik	2021	KLHK	The Project will leverage the awareness and knowledge produced from Proklim to be used on the key Project intervention that aim to strengthen and enhance awareness (Output 2.1)

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

48. The successful implementation of this project will provide a series of lessons learned and knowledge management of the Project. The knowledge management plan of this Project is described in the following table.

Table 13. Knowledge management plan

Project Output	Targeted Audience	Knowledge Products	Means of Dissemination	Means of Access
1.1.	Government, community groups, Vulnerable groups (women and youth), Private sector, CSOs	Document of Participatory climate risk analysis (PCRA)	Workshop, video	Consortium's and government website and social media, national and local media
		Module of Training packages for village government and village climate disaster preparedness work team	Training, Video	Consortium's and government website and social media, national and local media
	Government, community groups, Vulnerable groups (women and youth), Private sector	Document local polices	Workshop and Expert team meeting, Video	Consortium's and government website and social media, national and local media
	Government of West Nusa Tenggara dan District of West Lombok, Community groups, vulnerable groups (women groups and youth)	Document of guidelines/plans/standards (contingency plan, early warning system)	Workshop and Expert team meeting,	Consortium's and government website and social media, national and local media
	Village government, Community groups, Vulnerable groups	Policy brief/policy paper	Workshop and Expert team meeting	Consortium's and government website and social media, national and local media
2.2.	Government of West Nusa Tenggara dan District of West Lombok, Community groups, vulnerable groups (women groups and youth)	Video, Printing Document best practices and lesson learned from demonstration of climate adaptation models	Delivery to stakeholders	www.transform.or.id www.konsepsi.org www.kemitraan.or.id www.data.ntbprov.go.id www.satudata.lombokbarat.go.id
3.1.	Local government, village government, fishermen groups, vulnerable groups (women and youth)	Document and Video Coastal area plan integration	Workshop and training, delivery networking, Media mainstreaming and media social	Consortium's and government website and social media, national and local media
3.2.	Private sectors, Government, Community groups, Fishermen groups, BUMDes, SMEs	Value chain analyses report,	Workshops, Journalist Trip	Consortium's and government website and social media, national and local media

3.3.	Private sectors, Government, Community, Fishermen groups, BUMDes, SMEs	Business case models, BMP publication, local champion stories or videos	Workshop, Journalist Trip, Exhibition, B2B Meetings	Consortium's and government website and social media, national and local media
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49. To ensure synergy and sustainability of the knowledge transfer and management, the Project will also align the Project knowledge materials and dissemination with knowledge management centers owned by the West Nusa Tenggara Provincial government, namely, One NTB Data and West Lombok District Government, namely; SIWARTA, and NTB Siaya from BPBD NTB Province

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

50. This project has consulted with relevant stakeholders in relevant with the policy/decisions related to issues (tidal flood and climate change adaptation) starting from the community level up to the regency and province level as summarized of consultation activities below:

No	Activity	Time and Location	Stakeholders or Participants	Results
1.	Focus Group Discussion	September 2, 2022, in South Lembar	The FGD was attended by 10 people: the head of sub-village, the head of South Lembar Village, the Fishermen's Group, Salt Farmers, Mangrove nursery farmers, wetland farmers and housewives. Of the 10 people who attended, 5 people (50%) were women.	FGD described about the tidal flood disaster and its impact on people's livelihoods. There are 2 sub-villages exposed to the threat of tidal flood with 495 of households
2.	Discussion with District Government of Lombok Barat	December 27, 2022, in Office of District Development Planning Agency	Discussion was attended by 19 people (14 men and 5 women) from: District Development Planning Agency; District Disaster Management Agency; Provincial Public Works and Human Settlements Department; Provincial Environment and Forestry Agency. Meteorology Climatology and Geophysics Agency; NGOs, Village Government, Fishermen's Groups, and Environmental Youth Leaders	This FGD activity aims to deepen information related to various events, periods of occurrence, social and environmental impacts, as well as adaptation and mitigation programs from existing rob disasters. The result from the consultation reiterates the need of synergy and collaboration of all stakeholders in developing a careful planning and intervention to address the robs problems and adapting to the future risks of climate hazards
3	Focus Group Discussion	July 10, 2023, in Gerung-District of Lombok Barat	This FGD was attended by 35 participants who represent: the Provincial Disaster Management Agency; the Provincial Forestry and Environmental Office; the	This FGD intended to gather data/Information related to the impact of Climate Change by sector and location as well as to inform the design of proposed project concept

			District Disaster Management Agency; the District Fisheries Office; the District Agriculture Office; the District Development Planning Agency; the district of Village community and government empowerment office; head of 2 sub-district; head of 6 villages.	notes (as was submitted to AF)
4	Series consultation with targeted community	<ul style="list-style-type: none"> - July 23, 2023, in Village of Cendi Manik - July 24 in Village of Central Sekotong - July 24, 2023, in Village of South Lembar - July 24, 2023, in Village of West Sekotong 	The number of participants in the six villages was 140 people (30% of them were women) as representatives of Village Government, Heads of sub-villages, Women's Groups, Persons with Disabilities, Vulnerable Groups, and local leaders.	This activity intended to explore the views, experiences, and stories of key informants regarding with tidal flood disaster and its impact on their livelihoods as well as to gather their suggestions/inputs about the kind of program or intervention model that they need.
5	Workshop Consultation of Project Proposal Design	August 10, 2023, at FAVE Hotel Mataram	This activity was attended by 37 participants from the provincial government (development planning agency, disaster management agency, environmental and forestry office, women empowerment office); the district government (agriculture office, fisheries office, head of sub-districts, development planning agency, disaster management agency); four (4) selected government village	The objectives of this consultation workshop is to present the results of the Rapid Climate Risk Assessment in six (6) site villages and the project design that will be submitted to the Adaptation Fund. In addition, to gather suggestions and input from stakeholders regarding the proposed project design.



Figure 8. Workshop consultation process in villages (B,C) and district level (A,D,E)

Mainstreaming gender in project

51. Considering the importance of women's roles in various aspects, especially in development issues, this project will use a gender perspective from planning to program implementation. The aim is to mainstream gender, especially in the management of coastal areas. By applying the principle of gender inclusivity, this project sees the role of women as crucial and potential parties to maintain the sustainability of coastal areas through pilot and productive businesses.
52. Women are the most vulnerable social group and are affected by *rob*. When the disaster occurred, women's activities (productive sector including salt making, activities in the fields, making processed food from marine products, mangrove nurseries, buying and selling fish catches, and small traders at tourist village locations) were affected and even stopped being productive. Women tend to do domestic work; while men are more involved in securing the environment and their homes as *the rob* occurs.

53. In addition, there is a high gap between women's and men's roles in managing coastal areas prone to tidal floods, according to previous research. The increased gap occurs in two aspects: institutional governance and governance of the coastal regions and the environment. However, women have a prominent role in business governance. Accordingly, this project will try to provide enabling environment and opportunities that women can be involved in both aspects. In the institutional aspect, women must be involved proportionally in meetings, discussions, and capacity-building activities. In regional governance, on the other hand, women are given opportunities in various aspects of the project.

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

54. Climate change adaptation aims to increase resilience by reducing vulnerability and increasing the capacity of communities and areas where they live, exposed to disasters. Thus, if hazards and vulnerabilities are reduced, and the power of the community and region is increased, the community's resilience in facing tidal disasters caused by climate change will be better/increased. Thus, it will minimize the communities' risk of loss of life, economy, society, and environment experienced caused by tidal flood disasters.
55. The development of climate resilience programs in West Lombok regency has been implemented in five villages, including Mareje, Cendi Manik, Banyu Urip, East Sekotong, and South Kuripan. The five villages have received a charter for their participation in developing the Climate Village Program with an Intermediate Category by the Ministry of Environment and Forestry in 2021. However, the West Lombok Government's policy to integrate climate change management is still weak, as reflected in their 2019-2024 RPJMD. Goals for achieving the fifth mission: Increasing Environmental Quality and Reducing Regional Disaster Risk with the Environmental Quality Index and Regional Disaster Risk Index as a measure of success with targets of 58.57 for IKLH and 123.58 for IRBD at the end of the RPJMD period. There are only two programs related to low carbon development and increasing climate resilience: The Waste Management Performance Development Program and the Pollution Control Improvement Program.
56. This project is proposed to reduce the risk of vulnerability and increase the resilience of communities, and the environment exposed to tidal disasters. This hope/goal will be achieved if the capacity of the community is increased. This is in the form of knowledge and skills of vulnerable groups, the ability to manage livelihood resources, and support from the institutional and policy needed for this purpose. In handling the tidal disaster in Lembar district and Sekotong district, the West Lombok government has included the handling of the tidal disaster in the 2019-2024 RPJMD. However, this effort has not been carried out because 1) the allocation of funds that should have been used for handling tidal flood disasters was diverted to overcome the COVID-19 pandemic, 2) the allocation of funds is relatively small, so it is not able to handle tidal disasters, 3) village funds are only able to handle small-scale development, 4) tidal flood's impact is felt almost every year, so urgent action is needed. For this reason, Adaptation Fund is needed to stimulate efforts for tidal flood disasters response.
57. If the community and the area in this project location do not have support from the Adaptation Fund, then the community in six villages (Lembar district and Sekotong district) will always be continuously exposed to tidal flood disasters because of climate change. In addition, environmental damage will get worse if this condition continues. Therefore, the existence of policy advocacy activities for stakeholders, especially the village, district, and provincial government, will ensure the sustainability of this program. This is especially in sustainable management of coastal areas and communities, in managing community livelihoods and the coastal regions for climate change adaptation.

Table 13. Scenarios and justifications for why this project intervention is vital to be proposed

Component	Without the Adaptation Fund	With the Adaptation Fund
Output 1.1 Institutions, policy and planning at the village level that are responsive to climate change disaster impacts	The institutional resilience at the village level in dealing with the tidal disaster is still limited due to its low capacity and limited support for facilities and infrastructure.	Losses due to climate change disasters from the aspect of resilience will increase. Meanwhile, the element of vulnerability will decrease because the capacity has been increased.
Output 1.2. Increased community participation in reducing tidal flood disasters	Community participation in contributing to mitigating and adapting to overcome disasters is small due to low awareness.	The number of people contributing to climate change adaptation activities will increase because they have received the support of knowledge and skills in dealing with climate change.
Output 2.1. Increased community preparedness in the face of tidal disasters	The community's preparedness in dealing with disasters is lacking because the facilities and infrastructure to anticipate this happening do not yet exist.	The community will always be ready to face the tidal disaster because they have acquired the knowledge, skills, and infrastructure to deal with the tidal floods in the village.
Output 3.1. Established business management capacity and opportunity for viable community livelihood and smallholder businesses	Opportunities to obtain sources of livelihood are limited due to lack of knowledge and skills in creating job opportunities. Therefore, the number of people who will become jobless will increase.	Opportunities to develop and create sources of livelihood will be opened so that the community's income level when a disaster occurs will be stable.
Output 3.2. Increased community income generating and productive economic activities	Community income during the tidal flood disaster decreased due to the cessation of work activities. Unfortunately, the number of people who will experience this decline in income will continue to increase.	Opportunities to develop and create sources of livelihood will be opened so that the community's income level when a disaster occurs will be stable.

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

58. The sustainability of project/program outcomes has been considered when designing the project. The project's sustainability is developed from the perspective of policies, institutions, and financing at the village and regency levels.
59. At the village level, a multi-stakeholder forum will be formed to discuss and develop community action plans to reduce vulnerability to climate change. In addition, a village alert team will also be constructed or utilized, one of whose duties is emergency response to disasters. The establishment of these institutions is based on village regulations and legalized by the village head. Meanwhile, to ensure sustainable financing, the agreed community action plan to reduce vulnerability to climate change will be integrated into the village medium-term development plan (RPJMDesa) and/or village working plan (RPKPDesa) documents.

60. At the regency level, the regional action plan document for climate change adaptation (RAD-API) of West Lombok regency will be prepared and legalized through a Regent Regulation. Furthermore, the village climate change adaptation plan that has been integrated into the village planning document is sought to be accommodated in West Lombok's RAD-API document. In addition, the West Lombok Climate Change Working Group (Pokja Perubahan Iklim) will also be formed, tasked to ensure the implementation of climate change adaptation programs and conduct evaluation monitoring.
61. NTB's risk index score decreased from 172.00 (HIGH) in 2013 to 128.05 (MEDIUM) in 2020 and 122.33 (MEDIUM) in 2021. In the last six years the regency/city's disaster risk index scores generally decrease. The IRBI 2021 data states that there are three regencies that are still "HIGH" risk, namely: Sumbawa, Central Lombok, and West Lombok. The risk index value that does not change is due to the constant capacity value as described above.
62. Along with the above, the progress of disaster-resilient village development is quite significant, including the villages in West Lombok regency. Disaster-resilient villages are mostly from districts in West Lombok. Most of them are financed from the APBD, while others are supported by Non-Governmental Organizations (NGOs).
63. In general, the distribution of disaster-resilient villages/sub-districts in West Nusa Tenggara is spread over Mataram city, covering three districts consisting of eight sub-districts, West Lombok regency includes eleven districts comprised of 50 villages/sub-districts, Central Lombok regency contains ten districts consisting of 34 villages/sub-districts, East Lombok regency includes 12 districts comprised of 31 villages/sub-districts, North Lombok regency covering five districts consisting of 22 villages/sub-districts, West Sumbawa regency covering three districts composed of five villages/sub-districts, Sumbawa regency includes four districts consisting of eight villages, Dompu regency includes seven districts comprised of 18 villages/sub-districts, Bima regency has eleven districts consists of 36 villages/sub-districts, Bima city includes five Sub districts and 12 villages/sub-districts.

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

64. From the results of risk identification based on the output project, there are several risks that fall into the moderate category and need to get serious attention in this project, including risks to beneficiaries who do not have access to capital, loss of community livelihoods and injustice in obtaining social assistance when the Rob disaster, the risk of very slow growth of mangrove planting, and the risk of soil pollution due to the use of plastics. In minimizing these risks, the project has identified mitigation actions including project activities that need to connect beneficiaries with the bank as well as facilitation of licensing and product marketing so that it is hoped that beneficiaries can run their businesses to increase income, conduct an inventory of directly affected communities as a basis for targeting the provision of assistance from government and other parties, using certified mangrove seeds and assisting the community in carrying out maintenance and monitoring evaluations, Limiting the use of plastic in project activities.
65. The risks that have a low level identified include the risk of non-compliance in infrastructure development with standard civil technical requirements which must refer to Law No. 18 of 1999, the risk that local people do not get access to work, the risk of domination of certain mangrove species over other species, the existence of the risk of releasing greenhouse gases originating from vehicles transporting project materials, there is a risk that vulnerable groups in society (disabilities, women, the elderly) are not given the opportunity by their families and relatives to be involved in project activities. Mitigation efforts that need to be carried out have been identified to minimize the risk of this happening. The results of risk identification, levels and mitigation actions based on ESP Adaptation Fund are more clearly presented in the following table:

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
<i>Compliance with the Law</i>	None	Based on the applicable law in Indonesia, this project is in accordance with the national policy, namely implementing the Minister of

		Environment and Forestry Regulation No. 33 of 2016 concerning guidelines for preparing climate change adaptation actions as well as contained in the RAN API and NDC-APIK roadmap. At the provincial level, the Project supports the NTB Provincial Regulation No. 2 of 2008 regarding the management of coastal areas and small islands and the NTB Provincial Regulation No. 9 of 2014 regarding disaster management as stated in the 2019-2023 Regional Action Plan (RAD API).
<i>Access and Equity</i>	None	The project provides fair and equitable access to beneficiaries. The total target beneficiaries are 2,379 people (1,665 men and 714 women) distributed in 4 selected villages in Sekotong and Lembar subdistricts. This project encourages the involvement of both men and women, especially vulnerable and marginalized groups (including persons with disabilities) in discussions and action planning related to climate change, resilience and adaptation. The project implements gender mainstreaming and social inclusion by providing space for the poor, men and women, and other vulnerable groups as rights holders to claim their rights in access to climate information for decision making in their livelihood activities. This project requires the involvement of at least 30% of women's representatives in every activity.
<i>Marginalized and Vulnerable Groups</i>	None	The project contributes to empowering vulnerable and marginalized groups in six villages (potential beneficiaries of 2,400 people). Empowering vulnerable and marginalized groups can increase community participation and income for resilience to climate change. This project directly impacts the livelihoods of coastal communities through a 10% increase in household revenues from income sources that are more diverse, adaptive, and resilient to climate change stressors based on optimizing local coastal potential
<i>Human Rights</i>	None	The project has no potential to violate human rights.
<i>Gender Equality and Women's Empowerment</i>	Yes	Women get fewer opportunities than men due to the influence of community culture.
<i>Core Labour Rights</i>	None	Payment for labor involved in the project will be based on the regional minimum wage standards of the province of NTB and the district of West Lombok. The project will ensure that the workers involved are entitled to rights in accordance with the Decree of the Governor of NTB No 561-685 of 2021 regarding the regional minimum wage standards for the province of NTB.
<i>Indigenous Peoples</i>	None	There are no indigenous peoples at the project site.
<i>Involuntary Resettlement</i>	None	The project does not have a resettlement plan from the tidal flood location.

<i>Protection of Natural Habitats</i>	None	The project will impact the protection of habitats, including mangrove areas in South Lembar and Cendi Manik village. In addition, the project will contribute 100 hectares of mangrove forest and potentially reduce the tidal intensity at the project site.
<i>Conservation of Biological Diversity</i>	None	The project will impact increasing the biodiversity of flora and fauna, including bird diversity and fish resources, especially mangroves as nursery ground locations.
<i>Climate Change</i>	None	The project contributes to the absorption of greenhouse gas emissions through mangrove enrichment and efforts to improve coastal ecosystems to strengthen climate resilience. This impact assessment can be measured by the reduced numbers of households affected by tidal floods.
<i>Pollution Prevention and Resource Efficiency</i>	Yes	dust pollution due to the entry and exit of operational vehicles carrying project materials.
<i>Public Health</i>	Yes	The increase in people affected by disease during ROB, dust pollution due to the entry and exit of project operational vehicles which makes people vulnerable to respiratory infections
<i>Physical and Cultural Heritage</i>	None	There is no cultural heritage at the project site.
<i>Lands and Soil Conservation</i>	None	The project will impact the ecosystem improvement through soil and water conservation efforts and development of adaptive agriculture for high salinity areas. Assessment of land conservation aspects can refer to the NTB Provincial Regulation No. 5/2007 concerning watershed management.

66. With risk identification per E&S Principles, the proposed project is categorized as C according to the categories specified in the ESP. Category C corresponds to projects with small potential impact risks, less widespread, reversible, and mitigated. The details of the analysis are as follows:

Table 14. Categorization definition

Questions	Component Answer YES / NO		
	1	2	3
Does the Project Outputs / Activities have significant adverse environmental or social impacts that are diverse?	No	No	No
Does the Project Outputs / Activities have significant adverse environmental or social impacts that are widespread?	No	No	No
Does the Project Outputs / Activities have significant adverse environmental or social impacts that are irreversible?	No	No	No
Does the Project Outputs / Activities have few adverse environmental or social impacts?	No	No	No
Does the Project Outputs / Activities have in small scale / low widespread adverse environmental or social impacts?	No	No	No
Does the Project Outputs / Activities have reversible or easily mitigated adverse environmental or social impacts?	No	No	No

Does the Project Outputs / Activities have no adverse environmental or social impacts?	Yes	Yes	Yes
Categorization	C	C	C

67. The results of the Component Categorization showed that the component 1 and component 2 are categorized as low risk (Category C) because the strengthened governance and institutional capacity. There is no impact can be a risk on environmental and social. in component 2 is included in the low-risk category (Category C) because capacity building on adaptation measures do not have an impact on the environment and social. Component 3 is categorized as low risk (Category C) Coastal ecosystems resilience and sustainable livelihoods because in this component there are several activities, especially infrastructure development which can have little impact on the environment and social.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project/programme implementation.

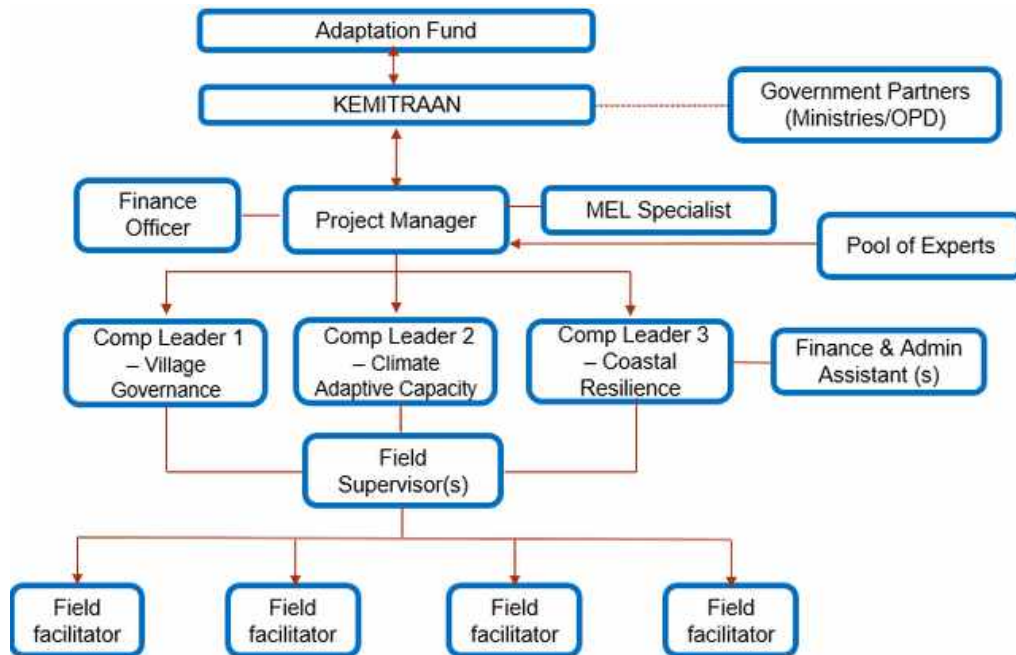


Figure 9. Project Governance Structure

68. The Executing Entity (EE) for this project is KEMITRAAN which form Consortium partnership with two local civil society organizations (CSOs) in West Nusa Tenggara, TRANSFORM and KONSEPSI. The Consortium formed a Project Management Unit (PMU) which will be responsible to implement the project and ensures the outcomes to be achieved are in accordance with the project framework and planning. Division of responsibilities among the consortium members has been agreed as stated in the Letter of Agreement signed by consortium members. The LoA has been attached in this proposal document
69. The Project Management Unit is led by a Project Manager that will be responsible and report directly to KEMITRAAN as National Implementing Entity (NIE). In delivering work plan and ensuring the project outcome, the Project Manager will be assisted by Outcome Component Leaders (3 persons – for each Outcome Component) for program-related matters, 1 MEL Specialist for technical support in project monitoring and evaluation and 1 Finance Officer to ensure financial planning and management of the overall project. The Outcome Component Leaders will be assisted by Field Supervisor, Finance and Admin Assistant and Field Facilitators (4 facilitators). The Field Facilitators will work at the village level and spend 15 working days in the village in a month. The Outcome Component Leaders will be assisted by the Finance and Administration Assistant who will handle the administrative and financial issues at the local level. The coordination mechanism including monitoring and evaluation will be jointly conducted in regular manner with the representative of the National Implementing Entity.
70. In ensuring that the planned activities will achieve its expected outputs and outcome, the PMU will receive technical assistance from pool of experts with different backgrounds and expertise including: Climate & Disaster Preparedness Specialist, Village Governance Specialist, Community Development Specialist, Hydro Civil Engineering Specialist, Mangrove Rehabilitation Specialist, Sustainable Agriculture Specialist, Sylvo-fishery Specialist, SMEs and Livelihood Specialist, Knowledge Management Specialist and Gender and Social Inclusion Specialist. These experts will provide inputs for technical knowledge in other relevant project component both at subnational and field/village level.
71. The project component will ensure that gender mainstreaming will be promoted and aligned within the Project cycle since planning, implementation until monitoring and evaluation. The Project will also apply gender balance and affirmation policy to ensure that gender-based approach and inclusion in the recruitment and staffing of the Project. To improve the understanding on how to mainstream and

promote gender responsive planning and action plan, series of capacity building will be provided to ensure each facilitator will have the sound knowledge and guidance in the project implementation. The project will also apply gender tracking tools in its monitoring and evaluation framework to ensure that a gender responsive knowledge management and learning is in place.

Table 14. The role of each institution

Structure	Duties and responsibilities	Explanation
Government Partners	The government partners will be engaged in coordination for policy direction and alignment for the project activities implementation. The government partners will also provide advice and recommendation for the successful implementation of the Project. Where feasible, government partners will also be engaged in the knowledge dissemination and learning platform.	At national level, the Ministry of Environment and Forestry (KLHK) will be engaged as the AF focal point. Other line ministries relevant to program component (e.g. Ministry of Marine and Fisheries Affairs, Ministry of Village, Ministry of Home Affairs, BNPB, BMKG and etc.) will be engaged when necessary for sectoral and technical coordination. At subnational level, key government agencies will be involved include: BAPPEDA, Office of Forestry, Office of Environment Affairs, Office of Marine and Fisheries, Office of Tourism Affairs, Office of Village Development, BPBD.
Executing Entity	<ol style="list-style-type: none"> 1. Program preparation, including selecting PMU and linking the Government partners 2. Program implementation, including communication and coordination with AF focal point and line ministries 3. Program monitoring and evaluation of PMU 4. Financial monitoring and assessment of project implementation 	As the executing entity, KEMITRAAN will ensure the implementation of the program will follow and align with the Adaptation Fund Policy
Project Manager	<p>The Project Manager will direct PMU in delivering and implementing the project, such tasks will include:</p> <ol style="list-style-type: none"> 1. Together with PMU, the Program Implementation Plan will be prepared as a guide for implementing the program 2. Ensure that the program is carried out in accordance with the objectives and result framework 3. Assuring the monitoring of Project progress and results of achievement 4. Ensure the coordination mechanism with the 	The Program Manager is the Program leader who will be responsible for the National Implementing Entity through reporting results
Pool of Experts	<p>Will be responsible for technical advice and input towards project activities implementation, which include:</p> <ol style="list-style-type: none"> 1. Climate & Disaster 	<p>The pool of experts will include at the minimum the following:</p> <ol style="list-style-type: none"> 1. Climate & Disaster Preparedness Specialist

	<p>Preparedness</p> <ol style="list-style-type: none"> 2. Village Governance and Planning 3. Community Development 4. Hydro Civil Engineering for Sea Dyke 5. Mangrove Rehabilitation 6. Sustainable Agriculture/silvofishery 7. SMEs and Livelihood Development 8. Knowledge Management 9. Gender and Social Inclusion 	<ol style="list-style-type: none"> 2. Village Governance and Planning Specialist <p>Community Development Specialist</p> <ol style="list-style-type: none"> 3. Hydro Civil Engineering Specialist 4. Mangrove Rehabilitation Specialist 5. Sustainable Agriculture/Silvofishery Specialist 6. SMEs and Livelihood Specialist 7. Knowledge Management Specialist, and 8. Gender and Social Inclusion Specialist
Finance Officer	The Finance Officer will be responsible for financial and administrative management of the overall project and assist the Project Manager in preparing financial forecast and planning as well as financial report in each reporting period	
Component Leaders	<p>Will be responsible for implementing for each main Outcome Component of the Project. The key tasks would include:</p> <ol style="list-style-type: none"> 1. Together with the Field Supervisor, preparing program implementation plan for each main Outcome Component as implementation guideline 2. Ensuring that the program is carried out in accordance with the objectives and result framework 3. Lead in coordination on program progress and achievement with the field supervisor 4. Lead in establishing and maintaining coordination with the subnational government and relevant stakeholders 	
Field Supervisor	<ol style="list-style-type: none"> 1. Coordination with Outcome Component Leader in implementing the program 2. Manage and assist coordination with the subnational government at district level 3. Coordinating the field facilitators to ensure the activities implementation is in accordance with work plan and result to be achieved 4. Report to Outcome Component Leader and Project Manager in the 	Field facilitators will be based in the district and coordinate with the field facilitators in each village for the project activities implementation

	progress, results and challenges of Project	
Field Facilitators	<p>Will come in direct contact with the beneficiaries</p> <ol style="list-style-type: none"> 1. Act as Project contact point and establish communication and relationship with the project beneficiaries at village level 2. Together with the field supervisor developing work plan for the project activities execution at village level 3. Assist the Project team to implement the activities in the field/village level in accordance with the Project workplan 4. Report to the Field Supervisor for the Project activities implementation, result and challenges 	The Field Facilitators will be based in each targeted village and will be responsible for the project execution at the ground/site.

B. Describe the measures for financial and project/programme risk management.

The following table summarises the risks and issues of the proposed Project:

Risk Category	Risk Rating	Risk Description	Proposed Mitigation Measures
1. Stakeholder Management Risk			
1.1. Low participation in Project activities implementation	Low	Stakeholders (Local Fishermen, Women Group, Custom/Traditional Figure, Youth, NGOs) have low buy in and support in the project approach and activities	<p>An intensive awareness raising campaign, clear communication would be carried out to increase the understanding and following buy-in of the local communities.</p> <p>The Project Operation Manual will be developed to align and comply with the assessed environmental and social risks and the Environmental Social Safeguards Management Plan.</p> <p>A program of alternative livelihood in the coastal areas (mangrove rehabilitation and climate smart agriculture) will be developed to provide adaptation measures co-benefits.</p>
1.2. Changes of political leadership (government official) towards Project support and sustainability	Low-Moderate	Changing political leadership during the course of the Project may affect in the political support of the Project and pose risks for sustainability measures	The Project will ensure that along the course of the Project, it will establish strong communication and manage its network of local champion with the Political Partners at national and subnational level. Whenever change of political leadership occurs, the project will draw on the maintained local champion official to transfer the Project information, knowledge and approach.

2. Program Implementation Risk			
2.1. Survival of mangrove planting and rehabilitation	Moderate-High	The mangrove seeds planted has low survival rate which will affect the result of the Project	<ul style="list-style-type: none"> - Ensure vegetation type selection and location for mangrove rehabilitation suits with the biophysical characteristics of mangrove ecosystems - The Project will also promote the development of community-based nurseries for the mangrove seeds materials - Develop clear work plan and operational support for maintenance and monitoring of the mangrove survival.
2.2. Technical compliance and quality over the embankment construction	Moderate	The coastal embankment built is not in compliance with the standard technical design and may have shorter period for sustainability	<ul style="list-style-type: none"> - Ensuring that robust and proper feasibility study and detailed engineering design is prepared prior to construction works - Ensuring that vendor/subcontractor selection will follow best quality principle and efficiency - Ensuring the construction of the coastal embankment is in compliance with the DED - Ensuring compliance with policies and technical standard in the environment and civil engineering sector
2.3. Access and equity	Low-Moderate	Access of women and vulnerable groups to get involved and benefit from project implementation	<ul style="list-style-type: none"> - Participatory resource management - The operational project will mandate gender mainstreaming in every activity implementation
3. Financial Risk			
3.1. Fraud and Corruption	Low	Project staff may have the risks to commit fraud and corruption practices due to their lack of knowledge and integrity	<ul style="list-style-type: none"> - Providing assistance, monitoring and audit for the Project - Developing whistle blowing systems to provide prevention measures for such action
3.2. Improper financial reporting	Low	The Project staff may have the likelihood to prepare improper financial reporting that is not in compliance with Project Guideline	<ul style="list-style-type: none"> - Providing capacity building/training prior to project implementation, develop financial management guideline and conducting monitoring and technical assistance to finance and administrative staff at the project site
4. Executing Entity Risk			

3.1. Capacity of Implementing Partners	Moderate	The consortium partners may have low capacity in Project implementation in accordance to AF project implementation guideline	<ul style="list-style-type: none"> - Robust recruitment of project staffs and experts for project management - Assistance and capacity building by KEMITRAAN to Consortium Partners to improve understanding on AF project implementation guideline - Assignment of technical experts/advisors in each component for project implementation
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C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

Risk and risk rating	Mitigation Measures
Compliance with law	Develop clear cooperation rules in the implementation of construction projects, prepare Detailed Engineering Design Documents (DED) for physical buildings and consistently carry out monitoring and evaluation
Access and equity	Connecting beneficiaries with the bank and facilitating business licensing and facilitating product marketing
Marginalized and Vulnerable Groups	Taking inventory of directly affected communities as a basis for targets for providing assistance from the government and other parties
Human rights	Apply consistency in the proportion of women's and men's involvement in project activities
Gender and Women Empowerment	Develop SOPs regarding local community involvement in project infrastructure development.
Core Labour right	Implement consistency in the proportion of involvement of local communities in project activities
Indigenous People	Building a dialogue process between the community, community leaders and the government to build an agreement in the event of resettlement
Involuntary Resettlement	The use of certified mangrove seeds and community assistance in carrying out maintenance and monitoring evaluations
Protection Habitat	Cultivate mangrove seedlings consisting of several species that are suitable for the habitat conditions at the project site
Conservation of Biological Diversity	Use of vehicles that emit low emissions based on emission test results from the Department of Transportation.
Climate Change	Conduct regular watering at project sites affected by dust.
Pollution prevention and resource efficiency	Providing emergency facilities for handling public health at the time of a rob disaster including light medicines and provision of personal protective equipment
Public health	Provide understanding and assistance to families of vulnerable groups and disabilities.
Marginalized and Vulnerable grup	Limiting the use of plastic in project activities
Lands and soil conservation	Develop clear cooperation rules in the implementation of construction projects, prepare Detailed Engineering Design Documents (DED) for physical buildings and consistently carry out monitoring and evaluation

Table 15. Environmental and Social Management Plan

<u>ESP Adaptation Fund Principle</u>	<u>Type of Impact</u>	<u>Possible Risk</u>	<u>(Identified impact)</u>	<u>Mitigation measure</u>	<u>Monitoring indicator</u>
Compliance with law	Environment	Procurement of climate-induced adaptation facilities/equipment: construction of fishpond, fish seed, stationaries (silvofishery in mangrove); crops/plant seed, land for small scale pilot, stationaries (climate-smart land-based farming in the coastal); infrastructures for ecotourism village information center.	Non-compliance in infrastructure development with the standard civil technical requirements as stipulated in the policy of Law No. 18 of 1999 concerning construction services.	Develop clear cooperation rules in the implementation of construction projects, prepare Detailed Engineering Design Documents (DED) for physical buildings and consistently carry out monitoring and evaluation	PMU, Field Facilitator
Access and equity	Economic	Facilitation on access to finance (including venture capital) to support communities' businesses by developing network or collaboration with banks or private sectors.	Beneficiaries do not have access to sufficient capital and markets as a follow-up to their needs for business development for project interventions	Connecting beneficiaries with the bank and facilitating business licensing and facilitating product marketing	PMU, Field Facilitator
Human rights	Economic	Technical assistance for developing market-demand commodities and products	Losing the community's right to livelihood (economic rights) and injustice in obtaining social assistance when a disaster occurs	Taking inventory of directly affected communities as a basis for targets for providing assistance from the government and other parties	PMU, Field Facilitator
Gender and Women Empowerment	Social	Women's participation and involvement in each project activity	Women get fewer opportunities than men due to the influence of community culture	Apply consistency in the proportion of women's and men's involvement in project activities	PMU, Field Facilitator
Core Labour right	Environment	Develop or construct providing infrastructure packages for climate-disaster risk reduction in mangrove areas; infrastructures: rob-resistant embankments	Local people will not get access to jobs for project infrastructure development	Develop SOPs regarding local community involvement in project infrastructure development.	PMU, Field Facilitator
Indigenous People	Social	Local community participation in each project activity	Local people do not want to be involved in project activities	Implement consistency in the proportion of involvement of local	PMU, Field Facilitator

ESP Adaptation Fund Principle	Type of Impact	Possible Risk	(Identified impact)	Mitigation measure	Monitoring indicator
				communities in project activities	
Involuntary Resettlement	Environment	Facilitation in providing infrastructure packages for climate-disaster risk reduction in mangrove areas; infrastructures: rob-resistant embankments	Local government will move settlements for very heavily affected communities	Building a dialogue process between the community, community leaders and the government to build an agreement in the event of resettlement	PMU, Field Facilitator
Protection Habitat	Environment	Mangrove planting in 20-hectare areas at selected sites.	Very slow growth of mangrove planting due to low community participation in plant maintenance	The use of certified mangrove seeds and community assistance in carrying out maintenance and monitoring evaluations	PMU, Field Facilitator
Conservation of Biological Diversity	Environment	Mangrove planting in 20-hectare areas at selected sites.	Dominance of certain mangrove species over other species	Cultivate mangrove seedlings consisting of several species that are suitable for the habitat conditions at the project site	PMU, Field Facilitator
Climate Change	Environment	Facilitation in providing infrastructure packages for climate-disaster risk reduction in mangrove areas; infrastructures: rob-resistant embankments	Greenhouse Gases originating from vehicles transporting project materials	Use of vehicles that emit low emissions based on emission test results from the Department of Transportation.	PMU, Field Facilitator
Pollution prevention and resource efficiency	Environment	Facilitation in providing infrastructure packages for climate-disaster risk reduction in mangrove areas; infrastructures: rob-resistant embankments	Dust pollution due to the entry and exit of operational vehicles carrying project materials	Conduct regular watering at project sites affected by dust.	PMU, Field Facilitator
Public health	Environment	Develop infrastructure packages for climate-disaster risk reduction in mangrove areas; infrastructures: rob-resistant embankments	Providing health facilities (sanitation, medicines) and handling public health when a flood occurs (ROB)	Providing emergency facilities for handling public health at the time of a rob disaster including light medicines and provision of personal protective equipment	PMU, Field Facilitator
Marginalized and Vulnerable grup	Social	Vulnerable groups (disabled, women, elderly) participation and involvement in each project activity.	Vulnerable groups in society (disabled, women, elderly) are not given the opportunity by their families and relatives to	Provide understanding and assistance to families of vulnerable groups and disabilities.	PMU, Field Facilitator

<u>ESP Adaptation Fund Principle</u>	<u>Type of Impact</u>	<u>Possible Risk</u>	<u>(Identified impact)</u>	<u>Mitigation measure</u>	<u>Monitoring indicator</u>
			be involved in project activities		
Lands and soil conservation	Environment	The use of plastic in every project activity that has the potential to cause pollution.	Soil pollution due to additional plastic waste from project activities.	Limiting the use of plastic in project activities	PMU, Field Facilitator

GRIEVANCE MECHANISM

72. Complaints arising from stakeholders and the general public involved in the Executing Entity (EE) to be submitted to the Implementing Activities to be discussed together to find a way out. If consensus is not reached, a complaint can be submitted to the National Implementing Entity (NiE) using the form. Complaints that will be processed with the Grievance Mechanism are only related to all project activities. Complaints and complaints information must be submitted in writing via email or letter sent or delivered directly during the visit. Other channels such as text messages / SMS, or oral / telephone complaints can be rejected as official complaints or asked to be distributed in writing. EE and NiE must ensure the confidentiality of the complaint. In registering a complaint, the complainant must fill out and attach the Complaint Form. Registered complaints that deserve to be followed up through the Complaint Settlement Plan. The following is an example of a complaint form:

Grievance Form

Lombok Climate Change Consortium (LC3)

Filled by LC3 Consortium

<i>Grievance No.</i>		
<i>Name of registerer</i>		Date:
<i>Source</i>	sms / email / letter / fax / phone / visit / others:..... *)	

*) Circle the appropriate

Filled by Complainant

Complainant Data		
<i>Name</i>		
<i>Address</i>		
<i>Phone No.</i>		
<i>Fax</i>		
<i>E-mail</i>		
Grievance Information		
<i>Location</i>		
<i>Program</i>		
<i>Parties was reported</i>		
<i>Date of occurrence</i>		
<i>Detail grievance:</i>		
<i>(Completed with related evidence or documents)</i>		
<i>(if this part is insufficient, then allowed to use additional paper)</i>		
<i>Complainant Name and Signature</i>		Date:
<i>Receiver name and signature</i>		Date:

Notes: The form must be made 2 copy: 1 copy for complainant, and 1 copy for archives.

Complaints regarding projects/programmes can also be filed with the secretariat at the address provided below:

Adaptation Fund Board secretariat

Mail stop: MSN P4-400 1818
H Street NW Washington DC
20433 USA
Tel: 001-202-478-7347
afbsec@adaptation-fund.org

73. The strategy to ensure all beneficiaries or communities can have access to the grievance mechanism is by providing socialization regarding the complaint mechanism at the beginning of the project, on the other hand project management will also provide complaint box facilities installed at the location of each intervention village (installed at the village office or facility others) to ensure this mechanism is affordable for all beneficiaries of project activities. Every month at the end of the week, the complaint box will be checked regularly to ensure that complaints can be received and evaluated regularly.

INSTITUTIONAL ARRANGEMENTS

The institutional arrangement includes the distribution of roles and responsibilities in the implementation of ESMP. The key players and their responsibilities will be as follows:

Designation	Responsibility
Program Management Unit (PMU)	<ul style="list-style-type: none"> - Identification of Environmental and Social Problems at the Project Site - Coordinate with expert in social forestry for the screening of project impact to vulnerable groups - Public disclosure, and Creation of grievance mechanism at EE level - Reporting and disposal of grievances
Kemitraan (Partnership)	<ul style="list-style-type: none"> - Monitor and review the process ESMP implementation - Set up the grievance mechanism at IE level - Disposal of grievances - Sample check and verify ESMP in the project village

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan, in compliance with the ESP and the Gender Policy of the Adaptation Fund.

74. Monitoring and evaluation will be carried out periodically every three months by Program Advisors and Financial Advisors. The evaluation results will be used to provide guidance for improving the implementation of activities. Monitoring and Evaluation will be done by independent parties every year end or annually, unless decided otherwise by Partnership and Adaptation Fund. The result of evaluation will be used as a recommendation for improvement and formulation of annual work plan and, when required, adaptation will be made following direction of the newest local/central government policies (if applicable).

Output	Activities	Responsible Parties	Targets	Cost (\$)	Time	Note
Output 1.1.	Monitoring, Evaluation and Program Coordination on village governance institutionalization and policy making	PIU	Outcome, output indicator targets	55.656	Start and End of Project	Meeting & Report
Output 1.2.	Monitoring, evaluation and technical coordination on village CAP development	PIU	Target indicator outcome, output, Process, Results milestones, effectiveness	10.870	Every Quarter, End of Project	Meeting & Report
Output 2.1.	Monitoring, evaluation and program coordination on climate adaptation capacity	PIU & NIE	Target indicator outcome, output, Process, Results,	15.266	Every Quarter, End of Project	Meeting & Report, Site Visit

Output	Activities	Responsible Parties	Targets	Cost (\$)	Time	Note
	building.		milestones, effectiveness,			
Output 2.2.	Monitoring, evaluation and program coordination on climate adaptation capacity building.	PIU	Target indicator outcome, output	9.300	Every Quarter, End of Project	Meeting & Report,
Output 3.2.	Monitoring, evaluation on alternative livelihood improvement	PIU	Target indicator outcome, output	6.564	Every Quarter, End of Project	Site Visit
-	Audit	External & Internal Audit	Management	90.072	Twice during project cycle (1/yr)	Report

E. Include a results framework for the project proposal, including milestones, targets and indicators, including one or more core outcome indicators of the Adaptation Fund Results Framework, and in compliance with the Gender Policy of the Adaptation Fund.

Table 15. Result framework for project proposal, including achievement, target and indicator.

Outcome/Output	Indicator	Baseline	Target	Source of Verification	Responsible Entity	Risk and Mitigation
Component 1. Strengthened governance and institutional capacity						
Outcome 1. Developed village-based climate-resilient institutionalization mechanism in the coastal area of West Lombok	# of village that has developed and adopted climate-resilient institutional governance and mechanism.	0	4	Project report, Evaluation Report	PMU	It is assumed that the village government have strong willingness to mainstream climate resilient approach in its governance process
Output 1.1. Institutions, policy and planning at the village level that are responsive to climate change disaster	# of village draft policy (Perdes/SK Kades) that promote and/or adopt coastal adaptation actions	0	4	Policy Document (Village Regulation/Head of Village Decree)	PMU & Village Facilitator	
	# of established task force for climate adaptation action at village level	0	4	Village Decree		
	# of guidelines/standards for climate related disasters (EWS) developed	0	4	Guideline document		
	# of village draft annual development plan (RKPDes) that promote and/or adopt coastal adaptation actions	0	4	Annual village planning document (RKPDes)		
	# of draft village annual fund (APBDes) allocation prepared for coastal adaptation actions	0	4	Village Budget (APBDes)		
Output 1.2. Village community action plan on climate-related disaster risk reduction in coastal areas	# of participatory land use planning as reference and direction to develop adaptation action areas	0	4	Land use maps	PMU &	
	#of community action plans developed to	0	4	Community Action Plan	Village Facilitator	

	respond towards climate change disaster					
Component 2. Capacity building on adaptation measures						
Outcome 2. Improved and established adaptive capacity for rural coastal communities to climate-induced hazards	# of targeted direct beneficiaries (disaggregated by gender and marginal group) which reported to have increased knowledge on coastal adaptation actions	0	100%	Project report; baseline and endline survey	PMU	It is assumed that the direct and indirect beneficiaries would actively participate and learn in the capacity building and related project activities
	# of targeted indirect beneficiaries which reported to have experienced knowledge exchange/learning on adaptation actions	0	65	Project report; baseline and endline survey		
	# of targeted direct beneficiaries (disaggregated by gender and marginal group) which reported to have adopted knowledge and best practice on coastal adaptation actions	0	25%	Project report; baseline and endline survey		
Output 2.1. Increased knowledge and skill of the targeted communities, including women and vulnerable groups on climate adaptation actions	# of training and capacity modules and guidelines (incl field school) for coastal adaptation actions developed	0	4	Training module/curriculum	PMU	
	# of targeted direct beneficiaries (disaggregated by gender and marginal group) which reported to have increased knowledge on coastal adaptation action by the Project support (capacity building and field school)	0	100%	Training report, Evaluation Report		

	# of knowledge products developed and disseminated to targeted beneficiaries and stakeholders	0	7	Project report, Knowledge publication, Media coverage		
Output 2.2. Models of coastal climate adaptation are developed and demonstrated at the targeted community	# of guidelines for demonstration activities on coastal adaptation models developed	0	4	Guideline document	PMU	
	# of success stories on adaptation activities which has been demonstrated during the course of the Project (e.g. indicative number of hectares, number of production rate etc)	0	8	Knowledge & lesson publication; Communication materials;		
Component 3. Coastal ecosystems resilience and sustainable livelihoods						
Outcome 3. Improved resilience of the coastal ecosystem to strengthen community livelihood resources	# of hectares of mangrove ecosystems that has been brought under improved rehabilitation measures (including enrichment)	0	20	Project report; evaluation report	PMU	It is assumed that: 1. Village government, district government and private sectors shows strong support on the Project approach on improving community livelihood at coastal areas through policy and sustainability measures 2. Local communities are willing to learn and adopt the best practices on coastal ecosystems-based adaptation approach 3. Private sectors and other key stakeholders are willing to engage and provide support towards the Project
	# of diverse livelihood and income generating activities options established and/or enhanced with the support of the Project	0	5	Project report; evaluation report		

						intervention in creating enabling conditions for community livelihood
Output 3.1. Rehabilitation and enhancement of coastal ecosystems to adapt to climate impacts at selected sites are demonstrated	# of feasibility study and detailed engineering design for mangrove rehabilitation and coastal embankment	0	3	FS and DED document	PMU	
	#of community groups involved in the establishment of community-based nurseries and mangrove planting	0	3	Project report; Village Decree		
	# of Ha mangroves areas intervened for mangrove planting in the targeted location	0	20	Project report, Evaluation report		
	# of Ha mangroves areas intervened for mangrove enrichment and maintenance in the targeted location	0	20	Project report, Evaluation report		
	# length of coastal embankment built and/or enhanced	Local embankment built to 2.350 km in South Lembar and Central Sekotong Village	2.350	Project report; Evaluation report		

Output 3.2. Community income-generating and productive economic activities are increased	# of VCA on coastal communities' livelihood developed, incl. market and financial access	0	1	VCA report/study	PMU	
	# of business case model for alternative livelihood in coastal communities developed	0	5	Business case/plan document		
	# of Project beneficiaries trained or to have experienced increased knowledge on alternative livelihood based on nature based solutions and EbA approach	0	100%	Training report; Evaluation report		

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

Project Objective(s)	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
<p>Outcome 1. Developed village-based climate-resilient institutionalization mechanism in the coastal area of West Lombok</p> <p>Output 1.1. Institutions, policy and planning at the village level that are responsive to climate change disaster impacts</p> <p>Output 1.2. Village community action plan on climate-related disaster risk reduction in coastal areas</p>	<ol style="list-style-type: none"> 1. Village that has developed and adopted climate-resilient institutional governance and mechanism. 2. Village draft policy (Perdes/SK Kades) that promote and/or adopt coastal adaptation actions 3. Established task force for climate adaptation action at village level 4. guidelines/standards for climate related disasters (climate risks assessment, climate EWS) developed 5. village draft annual development plan (RKPDes) that promote and/or adopt coastal adaptation actions 6. draft village annual fund (APBDes) allocation prepared for coastal adaptation actions 	<p>Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses</p>	<p>2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased</p>	<p>304.503</p>

<p>Outcome 2. Improved and established adaptive capacity for rural coastal communities to climate-induced hazards</p> <p>Output 2.1. Increased knowledge and skill of the targeted communities, including women and vulnerable groups on climate adaptation actions</p> <p>Output 2.2. Models of coastal climate adaptation are developed and demonstrated at the targeted community</p>	<ol style="list-style-type: none"> 1. Training and capacity modules and guidelines (incl field school) for coastal adaptation actions developed 2. Targeted direct beneficiaries (disaggregated by gender and marginal group) which reported to have increased knowledge on coastal adaptation action by the Project support (capacity building and field school) 3. Knowledge products developed and disseminated to targeted beneficiaries and stakeholders 4. Guidelines for demonstration activities on coastal adaptation models developed 5. Success stories on adaptation activities which has been demonstrated during the course of the Project (e.g. indicative number of hectares, number of production rate etc.) 	<p>Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at the local level</p>	<ol style="list-style-type: none"> 3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses 3.2. Percentage of targeted population applying appropriate adaptation responses 	<p style="text-align: center;">262.873</p>
<p>Outcome 3. Improved resilience of the coastal ecosystem to strengthen community livelihood resources</p> <p>Output 3.1. Rehabilitation and enhancement of coastal ecosystems to adapt to climate impacts at selected sites are demonstrated</p> <p>Output 3.2. Community income-generating and productive</p>	<ol style="list-style-type: none"> 1. Hectares of mangrove ecosystems that has been brought under improved rehabilitation measures (including enrichment) 2. Diverse livelihood and income generating activities options established and/or enhanced with the support of the Project 3. Feasibility study and detailed engineering design for mangrove rehabilitation and coastal embankment 4. Community groups involved in the 	<p>Outcome 5: Increased ecosystem resilience in response to climate change and variability induced stress</p> <p>Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas</p>	<p>5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress</p>	<p style="text-align: center;">294.931</p>

<p>economic activities are increased</p>	<p>establishment of community-based nurseries and mangrove planting</p> <ol style="list-style-type: none"> 5. Mangrove seeds planted in the targeted location 6. Length of coastal embankment built/enhanced 7. VCA on coastal communities livelihood developed, incl. market and financial access 8. Business case model for alternative livelihood in coastal communities developed 9. Project beneficiaries trained or to have experienced increased knowledge on alternative livelihood based on nature-based solutions and EbA approach 			
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¹ The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology, but the overall principle should still apply

G. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

		DESCRIPTION		Total USD
Outcome 1	Develop a village-based climate-resilient institutionalization mechanism in the coastal area of West Lombok			304.503
	Output 1.1. Institutions, policy and planning at the village level that are responsive to climate change disaster impacts			252.773
Activity	1.1.1	EE	Recruitment of village volunteers for climate-related disaster preparedness.	116.387
	1.1.2	EE	Participatory climate risk analysis (PCRA) by community to identify and assess aspects related to hazard characteristics, existing capacities, vulnerabilities, risk mapping, as well as risk level assessment	13.532
	1.1.3	EE	Establishment of a village climate disaster preparedness work team from village volunteer members and added with other community components.	24.741
	1.1.4	EE	Series of training workshop for village government and village climate disaster preparedness work team;	22.118
	1.1.5	EE	Formulation of local policies on climate resilience at village level	5.958
	1.1.6	EE	Facilitation for formulating climate disaster-related guidelines/plans/standards (contingency plan, early warning system);	3.732
	1.1.7	EE	Formulation of policy brief/policy paper to strengthen climate resilience actions or policies at sub-national level	2.511
	1.1.8	EE	Technical assistance on strengthening knowledge management systems on climate adaptation	23.826
	1.1.9	EE	Monitoring, Evaluation and Program Coordination on village governance institutionalization and policy making	39.968
	Output 1.2. Village community action plan on climate-related disaster risk reduction in coastal areas			51.730
Activity	1.2.1	EE	Dissemination of PCRA's results to the wider community through presentation of work team representative in workshop for each village	1.812

	1.2.2	EE	Community Action Planning (CAP) on climate resilience through community discussion series and field workshop. Formulation of CAP also consider input and comments in previous workshop regarding PCRA' results	2.456
	1.2.3	EE	Facilitation on integration Community Action Plan (CAP) with the village government's annual plan and budget through discussion series with village government	6.080
	1.2.4	EE	Facilitation of annual village development planning forum to decide on village development priority programs in the current year including CAP on climate-induced disaster resilience	5.016
	1.2.5	EE	Advocacy of CAP to sub-national government policies both at district and provincial levels through lobbying and discussion series by inviting sub-national government representatives both district and provincial levels.	5.996
	1.2.6	EE	Monitoring, evaluation and technical coordination on village CAP development	30.370
Outcome 2	Improved and established adaptive capacity for rural coastal communities to climate-induced hazards			262.873
	Output 2.1. Institutions, policy and planning at the village level that are responsive to climate change disaster impacts			132.905
Activity	2.1.1	EE	Trainings for targeted community on climate adaptation and resilience.	6.802
	2.1.2	EE	Conducting climate field school on adaptation actions on coastal areas conditions (mangrove, land-based farming in coastal, salt farming); in-class for 6 times in each targeted community, and preparing demonstration plots for climate adaptation (field practices).	52.010
	2.1.3	EE	Conducting simulation/exercise to respond to climate induced disaster by testing the contingency plans and early warning system	1.946
	2.1.4	EE	Developing and implementing a learning platform and process for communities related to climate adaptation actions through regular learning forums in each village and cross visits to other areas	3.700

	2.1.5	EE	Procurement of climate-induced disaster information and documentation systems	20.672
	2.1.6	EE	Documenting knowledge and best practices of community actions in climate change by producing Stories of Change (SoC) from targeted groups, videos, and book.	28.721
	2.1.7	EE	Monitoring, evaluation and program coordination on climate adaptation capacity building.	19.054
	Output 2.2. Models of coastal climate adaptation are developed and demonstrated at the targeted community			129.968
Activity	2.2.1	EE	Conducting analyses and model development on climate adaptation in coastal areas to identify, analyze, and design of model by hiring the expert team with taking into account PCRA's results and CAP.	32.899
	2.2.2	EE	Procurement of climate-induced adaptation facilities/equipment:	25.328
	2.2.3	EE	Demonstration of climate adaptation models of coastal climate adaptation at least 3 models i.e. silvofishery in the mangrove, climate-smart land-based farming in the coastal, and ecotourism services.	42.120
	2.2.4	EE	Documentation best practices and lesson learned from climate adaptation models in coastal area by producing practical guidebook and videos.	23.209
	2.2.5	EE	Monitoring, evaluation and program coordination on climate adaptation capacity building.	6.412
Outcome 3	Improved resilience of the coastal ecosystem to strengthen community livelihood resources			294.931
	Output 3.1. Rehabilitation and enhancement of coastal ecosystems to adapt to climate impacts at selected sites are demonstrated			252.931
Activity	3.1.1	EE	Participatory coastal area spatial plan integrated with climate-induced disaster resilience.	12.509
	3.1.2	EE	Development of Associated-Mangrove-Aquaculture (AMA) based on research and tourism, consist of activities:	75.000

	3.1.3	EE	Mangrove enrichment planting in 20 hectare areas at selected sites	20.000
	3.1.4	EE	Facilitation in providing infrastructure packages for climate-disaster risk reduction in mangrove areas; infrastructures: rob-resistant embankments	145.422
Output 3.2. Community income-generating and productive economic activities are increased				42.000
Activity	3.2.1	IE	Value chain analyses to develop the potential supply chain for smallholder fisheries and coastal community livelihood	4.848
	3.2.3	IE	Facilitation of training packages for sustainable smallholder fisheries and livelihood: good practices on fisheries cultivation; diversification of products/processing; marketing.	5.888
	3.2.4	IE	Facilitation small-scale business licensing and product certification	4.404
	3.2.5	IE	Procurement of equipment for productive economies and businesses i.e. production machines, packaging machines, etc.	12.000
	3.2.6	IE	Technical assistance for developing market-demand commodities and products	2.744
	3.2.7	IE	Facilitation on access to finance (including venture capital) to support communities' businesses by developing network or collaboration with banks or private sectors	4.024
	3.2.8	IE	Monitoring, evaluation on alternative livelihood improvement	8.092
			Project Activities Cost (TOTAL OUTCOME 1, 2 & 3)	862.307
	A	IE	Project Execution Cost	58.190
	B	IE	Project Cycle Management Fees	78.242
			TOTAL Management Support	136.432
			GRAND TOTAL	998.739

H. Include a disbursement schedule with time-bound milestones.

	Upon Agreement signature	One Year after Project Start^{a/}	Total
Scheduled Date	TBC upon grant award process	TBC upon grant award process	
Project Funds	552.267	368.230	920.497
Implementing Entity Fee	46.942	31.300	78.242
Total	599.209	399.530	998.739

Time schedule for project activity

Output	Main Activity	Subtotal (USD)	2024-2026							
			Q1 August-Oct 2024	Q2 Nov 2024-Jan 2025	Q3 Feb-April 2025	Q4 May-July 2025	Q5 August-Oct 2025	Q6 Nov 2025-Jan 2026	Q7 Feb-April 2026	Q8 May-July 2026
Outcome 1: Developed village-based climate-resilient institutionalization mechanism in the coastal area of West Lombok										
Output 1.1. Institutions, policy and planning at the village level that are responsive to climate change disaster impacts	1.1.1 Recruitment of village volunteers for climate-related disaster preparedness.	116.387								
	1.1.2 Participatory climate risk analysis (PCRA) by community to identify and assess aspects related to hazard characteristics, existing capacities, vulnerabilities, risk mapping, as well as risk level assessment	13.532								
	1.1.3 Establishment of a village climate disaster preparedness work team from village volunteer members and added with other community components dan Facilitation of registration of 10 Proklim villages and village assistance towards the primary PROKLIM (3 villages targeted by the Project and 7 villages outside the project target).	24.741								
	1.1.4 Series of training workshop for village government and village climate disaster preparedness work team;	22.118								
	1.1.5 Formulation of local policies on climate resilience at village level	5.958								
	1.1.6 Facilitation for formulating climate disaster-related guidelines/plans/standards (contingency plan, early warning system);	3.732								
	1.1.7 Formulation of policy brief/policy paper to strengthen climate resilience actions or policies at sub-national level	2.511								
	1.1.8 Technical assistance on strengthening knowledge management systems on climate adaptation	23.826								
	1.1.9 Monitoring, Evaluation and Program Coordination on village governance institutionalization and policy making	39.968								
Output 1.2. Village community action plan on climate-related disaster risk reduction in coastal areas	1.2.1 Dissemination of PCRA's results to the wider community through presentation of work team representative in workshop for each village	1.812								
	1.2.2 Community Action Planning (CAP) on climate resilience through community discussion series and field workshop. Formulation of CAP also consider input and comments in previous workshop regarding PCRA' results	2.456								

Output	Main Activity	Subtotal (USD)	2024-2026							
			Q1 August-Oct 2024	Q2 Nov 2024-Jan 2025	Q3 Feb-April 2025	Q4 May-July 2025	Q5 August-Oct 2025	Q6 Nov 2025-Jan 2026	Q7 Feb-April 2026	Q8 May-July 2026
	1.2.3 Facilitation on integration Community Action Plan (CAP) with the village government's annual plan and budget through discussion series with village government	6.080								
	1.2.4 Facilitation of annual village development planning forum to decide on village development priority programs in the current year including CAP on climate-induced disaster resilience	5.016								
	1.2.5 Advocacy of CAP to sub-national government policies both at district and provincial levels through lobbying and discussion series by inviting sub-national government representatives both district and provincial levels.	5.996								
	1.2.6 Monitoring, evaluation and technical coordination on village CAP development	30.370								
Outcome 2: Improved and established adaptive capacity for rural coastal communities to climate-induced hazards										
Output 2.1. Institutions, policy and planning at the village level that are responsive to climate change disaster impacts	2.1.1 Trainings for targeted community on climate adaptation and resilience.	6.802								
	2.1.2 Conducting climate field school on adaptation actions on coastal areas conditions (mangrove, land-based farming in coastal, salt farming); in-class for 6 times in each targeted community, and preparing demonstration plots for climate adaptation (field practices).	52.010								
	2.1.3 Conducting simulation/exercise to respond to climate induced disaster by testing the contingency plans and early warning system	1.946								
	2.1.4 Developing and implementing a learning platform and process for communities related to climate adaptation actions through regular learning forums in each village and cross visits to other areas	3.700								
	2.1.5 Procurement of climate-induced disaster information and documentation systems	20.672								
	2.1.6 Documenting knowledge and best practices of community actions in climate change by producing Stories of Change (SoC) from targeted groups, videos, and book.	28.721								
	2.1.7 Monitoring, evaluation and program coordination on climate adaptation capacity building.	19.054								

Output	Main Activity	Subtotal (USD)	2024-2026							
			Q1 August-Oct 2024	Q2 Nov 2024-Jan 2025	Q3 Feb-April 2025	Q4 May-July 2025	Q5 August-Oct 2025	Q6 Nov 2025-Jan 2026	Q7 Feb-April 2026	Q8 May-July 2026
Output 2.2. Models of coastal climate adaptation are developed and demonstrated at the targeted community	2.2.1 Conducting analyses and model development on climate adaptation in coastal areas to identify, analyze, and design of model by hiring the expert team with taking into account PCRA's results and CAP.	32.899								
	2.2.2 Procurement of climate-induced adaptation facilities/equipment:	25.328								
	2.2.3 Demonstration of climate adaptation models of coastal climate adaptation at least 3 models i.e. silvofishery in the mangrove, climate-smart land-based farming in the coastal, and ecotourism services.	42.120								
	2.2.4 Documentation best practices and lesson learned from climate adaptation models in coastal area by producing practical guidebook and videos.	23.209								
	2.2.5 Monitoring, evaluation and program coordination on climate adaptation capacity building.	6.412								
Outcome 3: Improved resilience of the coastal ecosystem to strengthen community livelihood resources										
Output 3.1. Rehabilitation and enhancement of coastal ecosystems to adapt to climate impacts at selected sites are demonstrated	3.1.1 Participatory coastal area spatial plan integrated with climate-induced disaster resilience.	12.509								
	3.1.2 Development of Associated-Mangrove-Aquaculture (AMA) based on research and tourism, consist of activities:	75.000								
	3.1.3 Mangrove enrichment planting in 20 hectare areas at selected sites	20.000								
	3.1.4 Facilitation in providing infrastructure packages for climate-disaster risk reduction in mangrove areas; infrastructures: rob-resistant embankments	145.422								
Output 3.2. Community income-generating and productive economic activities are increased	3.2.1 Value chain analyses to develop the potential supply chain for smallholder fisheries and coastal community livelihood	4.848								
	3.2.3 Facilitation of training packages for sustainable smallholder fisheries and livelihood: good practices on fisheries cultivation; diversification of products/processing; marketing.	5.888								
	3.2.4 Facilitation small-scale business licensing and product certification	4.404								

Output	Main Activity	Subtotal (USD)	2024-2026							
			Q1 August-Oct 2024	Q2 Nov 2024-Jan 2025	Q3 Feb-April 2025	Q4 May-July 2025	Q5 August-Oct 2025	Q6 Nov 2025-Jan 2026	Q7 Feb-April 2026	Q8 May-July 2026
	3.2.5 Procurement of equipment for productive economies and businesses i.e. production machines, packaging machines, etc	12.000								
	3.2.6 Technical assistance for developing market-demand commodities and products	2.744								
	3.2.7 Facilitation on access to finance (including venture capital) to support communities' businesses by developing network or collaboration with banks or private sectors	4.024								
	3.2.8 Monitoring, evaluation on alternative livelihood improvement	8.092								

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

A. Record of endorsement on behalf of the government²



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

Manggala Wanatani Building Block VII 12th Floor, Jalan Gattot Subroto – Senayan, Jakarta 10270
Phone +62 21 5730144 Fax: +62 21 5730134

Website : <http://kl.jepang.kemhi.go.id>

email : climate@kemhi.go.id

Our Ref : *J. 260 / P1 / R1 / 191 / 0 / B / 2022* Jakarta, 5 August 2022
Attachments :
Subject : Letter of endorsement

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

Dear Board Member,

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

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

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

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

Sincerely yours,

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

Copy to:
Kemitraan (Partnership Governance Reform in Indonesia)



Certificate No. CSC 00489



Certificate No. CSC 00489



Certificate No. CSC 00489




Certificate No. CSC 00489

Ir. Laksmi Dhewanthi, M.A. IPU Director General of Climate Change Ministry of Environment and Forestry, Indonesia	Date: August, 5, 2022
H.Syahdan, ST,MT, Head of Regional Disaster Management Agency, Province of West Nusa Tenggara	Date: July 15, 2022
Julmansyah, S.Hut, M.A.P Head of Regional Office of Environment and Forestry Province of West Nusa Tenggara	Date: July 15,2022
Muslim, ST,M.Si Head of Regional Office of Marine and Fisheries Province of West Nusa Tenggara	Date: July 15,2022

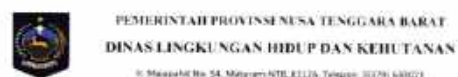
B. Implementing Entity certification

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

<p>⁹I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (President Decree No. 16/2015; P.13/MENLHK/Setjen/OTL.0/1/2016; P.33/MENLHK/Setjen/Kum.1/3/2016; Indonesia Intended Nationally Determined Contribution/INDC; COP 21; Paris Agreement signed by Government of Indonesia; Book and Map of Information System of Vulnerability Index Data (SIDIK); Climate Change Adaptation National Action Plan) and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy 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>Laode M Syarif</i> <i>Executive Director of Kemitraan</i> <i>Implementing Entity Coordinator</i></p>	
Date: July 15, 2022	Tel. and email: +62-21-2278-0580 laode.syarif@kemitraan.or.id
Project Contact Person: Eka Melisa	
Tel. And Email: ; +62-818-764-746	eka.melisa@kemitraan.or.id

⁹ 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.

Annex 1. Support letter from government of West Nusa Tenggara Province



LETTER OF SUPPORT
 Number : 010/5208/Sekret-1/PSLH/2022

Responding a letter from the Transform organization, a member of the Lombok Climate Change Consortium, for the ideas for tackling *rob* and its impact in West Lombok Regency, we hereby express our support for the Proposed Program (Concept Note) entitled "Village Based Coastal Adaptation and Resilience in Lombok, Province of West Nusa Tenggara" proposed to the Programme Funding for Adaptation Fund.

We consider this activity very important in supporting local government efforts to create community resilience through the climate village program (Psklim) which has been carried out by the Environment and Forestry Office in West Nusa Tenggara Province.

Thus, we convey this Letter of Support, and we hope that it will become part of the strategic considerations of the proposals submitted to the Programme Funding for Adaptation Fund.

Mataram, 15 July 2022
 Head of the Regional Office of Environment and Forestry
 Province of West Nusa Tenggara,

 Hilmaniyah, S.H., M.A.P.
 NIP. 19740701 200212 1 005



LETTER OF SUPPORT
 Number : 923/200-1/2022/010/010/1/2022

Responding a letter from the Transform organization, a member of the Lombok Climate Change Consortium, for the ideas for tackling *rob* and its impact in West Lombok Regency, we hereby express our support for the Proposed Program (Concept Note) entitled "Village Based Coastal Adaptation and Resilience in Lombok, Province of West Nusa Tenggara" proposed to the Programme Funding for Adaptation Fund.

We consider this activity very important in supporting local government efforts to create community resilience and in the same time improve their livelihood in facing climate change in Province of West Nusa Tenggara.

Thus, we convey this Letter of Support, and we hope that it will become part of the strategic considerations of the proposals submitted to the Programme Funding for Adaptation Fund.

Mataram, 15 July 2022
 Head of the Regional Office of Marine and Fisheries
 Province of West Nusa Tenggara,

 A. Muslim, ST, M.Si
 Pembina Tk. I/IVB
 NIP. 19790801200121009

Annex 2. Letter of Potential Cofinance Support



**ANNEX NTB PROVINCIAL GOVERNMENT PROGRAMS IN LINE WITH
THE PROPOSAL OF ADAPTATION FUND BATCH II 2023 PROPOSAL**

No	Name of Program	Activities	Budget (USD)	Leading Sector
1	Marine, coastal and small islands management	Coastal community empowerment	8,887	Marine and Fisheries Office
2	Fisheries and aquaculture management	Fish farming techniques, processing and marketing	34,971	Marine and Fisheries Office
3	Development of Tourism Resources and Creative Economy	Implementation of Human Resource Capacity Building in Tourism and Creative Economy	8,130	Tourism office
4	Watershed Management	Application of soil and water conservation techniques	17,220	Environment and Forestry Office
Amount			68,227	

Head of Bappeda of NTB Province,

Dr. H. IDRIS WANDI, M.S.
NIP. 19651231 199403 1 153



Melakem, 3 January 2024

Number : 001 / 24 / Bappeda
Attachment :
Re : Recommendation for Adaptation Fund Batch II 2023 Proposal

Attention to:
The Adaptation Fund Board
Sacramento 1818 H Street NW
MSN 57-76, Washington, D.C. 20451 USA

Dear Sir/Madam,

I hope my letter finds you in a good health and happiness. First of all, I would like to introduce myself, I am Idris Wandi, I work as the head of the Regional Development Planning Agency (Bappeda) of West Nusa Tenggara (NTB) Province, Indonesia. Our development planning institutes aim to integrate the concept of sustainability by bringing more prosperity for the society in terms of economic, social, and environmental benefits. This will contribute to the greater Sustainable Development Goals, especially Goal Number 13 regarding climate change. In doing our actions for mitigation and adaptation of climate change, we work together and learn proactively with academic, non-governmental organizations, academic, media, and other institutions.

The government of NTB Province has issued the Local Regulation Number 2 Year 2021 regarding the Regional Medium-Term Development Plan (RPJMD) Year 2019-2022 of the West Nusa Tenggara Province. This RPJMD act as a guideline for all government departments and non-government organizations in undertaking development programs and activities to achieve the development goals. However, in undertaking the development programs, especially climate-related programs, bringing in some of the challenges. Therefore, to support climate financing, it is important to have creative and innovative financing that can help all local actors to work together for the benefit of the society.

Further, I have discussed the proposal for climate adaptation fund with Localized Climate Change Committee, with the title "Village-Based Coastal Adaptation and Resilience in Lombok Province of West Nusa Tenggara". This grant idea helps to assist the village development and from resilience to reduce the impacts of climate change in the society. This will contribute to reduce the impacts of climate change and promote a sustainable and inclusive development in West Nusa Tenggara Province. Our climate-related development programs are all aligned with the Cooperative program. Further, it will lead to more productive and resilient to address the SDGs and society welfare. The list of potential programs and activities for alignment with coastal climate adaptation program is attached in the annex.

In conclusion, I fully support this proposal to receive the grant from Adaptation Fund Batch II. If you have any questions regarding this, I am happy to discuss this further with you, by email IdrisWandi@prov NTB or +62 87 796018903. Thank you very much for your attention and I look forward to more productive collaboration for climate change programs in the near future.

Head of Bappeda of NTB Province,

Dr. H. IDRIS WANDI, M.S.
NIP. 19651231 199403 1 153

CC to:
1. Governor of West Nusa Tenggara Province.

Annex 3. Gender assessment in project location

GENDER STUDY REPORT

Results of Rapid Assessment of Disaster Risks Due to Climate Change and Related Matters, as well as the Potential for Gender-Responsive Adaptation in the Southern Part of West Lombok Region

1. INTRODUCTION

1.1. Background

Climate change is a phenomenon whose impacts have begun to be felt worldwide. The alteration in natural conditions, exacerbated by human activities that are detrimental or damaging to the environment, has also been felt. Lombok Island, which exhibits diverse natural characteristics including various climates, has areas that are vulnerable to the impacts of climate change. Coupled with the poverty conditions of the inhabitants in these vulnerable areas, this situation exacerbates their livelihoods.

The diversity of communities and their livelihoods in each region must recognize their differences. They are not homogeneous societies, thus having different capacities to confront the impacts of climate change and other changes that worsen the effects of climate change on communities. This diversity includes gender, disabilities, age, health conditions, welfare, religion, ethnicity, and so forth.

Climate change has severe implications for communities in general. However, these effects will be more pronounced for women and other vulnerable groups due to the limitations caused by patriarchal cultures. Therefore, initiatives are needed to assist communities, especially women and other vulnerable groups, in becoming more resilient to the impacts of climate change and related challenges. Initiatives to enhance the adaptation capacity of these populations are with the hope of a fairer and more equitable community by ensuring equal opportunities for all communities in enhancing adaptation capacity.

To gain a deeper understanding of vulnerability based on a gender perspective and other vulnerable groups, a rapid assessment was conducted on the disaster risks due to climate change and related aspects, as well as the potential for gender-responsive adaptation. Based on the findings of previous studies, the southern region of Lombok Island is one of the most vulnerable areas to the impacts of climate change, including the southern part of West Lombok Regency. Therefore, this study was conducted in this particular region.

1.2. Objective

The objective of this study is to obtain baseline data regarding the conditions of disaster risk due to climate change and related aspects, as well as the potential for gender-responsive adaptation, including:

- Gender characteristics and vulnerable groups
- Income and family income management from a gender perspective
- Disaster risks and responses from a gender perspective
- Survival strategies and disaster adaptation
- Gender roles in existing institutions and development programs

1.3. Urgency of GEDSI study outcomes in this project going forward

The outcomes of this study will be extremely beneficial for community development programs, especially those related to the adaptation of climate change impacts and associated issues. This study helps to ensure interventions are more suitable to the community's needs, as viewed through the lens of gender and marginalized or vulnerable groups. This gender study will assist in identifying project/program-related risks concerning gender equality and women's empowerment, including elaborating on specific gender cultures and norms where the project will operate. The study also provides the potential differences in gender impacts from the intended adaptation activities.

Responsive gender consultations, identifying primary gender goals and target groups, formulating gender-responsive project indicators, and conducting gender assessments in the project development phase are essential. By considering the diversity of communities in terms of gender, disabilities, ethnicity, age, religion, poverty, and others, efforts to enhance community adaptation capacity to climate change are expected to be more equitable and widespread.

2.IMPORTANCE OF GENDER ASPECT IN CLIMATE CHANGE ADAPTATION

This section refers to: Guidance Document for Implementing Entities on Compliance with the Adaptation Fund Gender Policy (Updated 2022).

3.METODOLOGY

- Study Methodology

The methodology used in this study is qualitative descriptive, aimed at providing descriptions related to phenomena examined from the perspective of gender and other vulnerable groups.

- Study Location

This study is conducted in 4 (four) villages: Cendi Manik, Central Sekotong, West Sekotong, and South Lembar.

- Participants

Respondents in the survey and informants in the FGD consist of representatives from diverse community groups, including different genders, people with disabilities, youth, and ethnicities.

- Types of Data

The data collected in this study include both quantitative and qualitative data.

- Data Collection Techniques

Secondary data are obtained from institutions and online sources. Primary data, on the other hand, are acquired through survey techniques (interviews), focus group discussions (FGDs), and observations.

- Data Analysis

The data are qualitatively analyzed to capture general phenomena and elaborate on variations occurring within them.

4.STUDY RESULTS

Based on the study conducted considering gender aspects, vulnerable groups, and marginalized communities, below are a few identified components:

4.1.Characteristics of the community from the perspective of gender, age, ethnicity, and religion

The available secondary data is relatively limited when viewed from the perspective of gender and marginalized groups. In this study, the available secondary data in the studied villages are based solely on gender (sex). However, data on the number of poor populations, ethnicity, and religion are only available in a few surveyed villages and can be accessed at the village office. Cendi Manik village is the only one that has begun to record the number of disabled people, but it is still in the process of data collection at the time of the study, hence not yet accessible.

Table 1. Population Data based on Gender, Household Poverty Status, Religion, and Ethnicity

Village	Gender (number of people)		Population in Poverty (households)	Religion (number of people)				Ethnicity	
	Male	Female		Islam	Protes tant	Hindu	Budha	Sasak	Non- Sasak
Cendi Manik	2831	2868	3126	6699	0	0	0	5648	51
South Lembar	5422	5301	?	10669	16	38	0	?	?
Central Sekotong	4664	4699	?	?	?	?	?	?	?

West Sekotong	1987	2071	?	8302	5	471	3	?	?
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Source: Secondary Data 2020

Based on the secondary data available in the studied villages, there are slight differences in the population by gender. Among the four studied villages, only South Lembar has a smaller population of females compared to males. Only Cendi Manik has data on poor households, totalling 3126 households. Regarding religious affiliation, Islam is the majority religion in all villages, while minority religions include Protestantism, Hinduism, and Buddhism. In terms of ethnicity, the majority are Sasak. Meanwhile, the minority ethnicities include non-Sasak groups, consisting of Javanese, Bima, Padang, and Sumbawa ethnicities.

4.2. Household income and income management from a gender perspective

In this study, it was identified that men are considered as the backbone and main earners of the family. If there is income from household members such as the wife, children, or others, they are seen as additional earners in the household. Table 2 below provides an overview of the dominance of men and women in terms of primary and additional income earners, as well as dominance in several income sources based on gender perspective and other vulnerable groups. Below is the detailed analysis of the survey results regarding household income:

a. Head of household and primary and secondary household income sources.

For income sources, several gender, disability, and social inclusion phenomena were identified in this study. Like in many patriarchal societies, the communities in the studied villages are also patriarchal. Men are considered to be the main breadwinners of the family, except for when the mother is the head of the household. Women consider themselves primarily as housewives, and their income is seen as additional earnings, as working for a living is considered a secondary job outside the duties of a housewife. Women or wives play a role in managing the family's finances from all sources of income. This money is managed for the family's consumption needs and children's school expenses. More details are outlined in Table 2 below.

Table 2. Table of Dominance in Household Income Providers Generally Based on Gender and Types of Vulnerable/Marginal Groups

Dominance Type	Male	Female	Disabled	Youth	Other	Notes
Main household income earner						For female household heads, women are considered the primary earners
Household income manager						
Additional/ side income						Others can include a child or other family members living in the same household.

The data is processed from the survey. The color of the boxes indicates the dominant groups

When managing household domestic affairs, women usually bring their children to work if their job is flexible and allows them to do so, for instance, when selling goods at tourist spots. If their work does not allow them to bring their children, they leave them with grandparents or their husband (the child's father) when the husband is not working. However, if there is no place to leave the child because they are too young, the mothers will not take that job. When the children are older and can stay at home playing with their friends, then the mothers can take part-time work. Additionally, wives usually wake up early to cook for their families before they leave for work.

Similarly, for teenagers or young adults, they are not considered the breadwinners of the family if their father can still work. The role of teenagers or young adults in earning a living is similar to that of wives, as contributors to additional income. For young adults, they prefer to seek alternative jobs outside the family business because if they work in the family business, they do not receive an income (they are not paid). If they work outside the family business, they can earn money. Many young adults work outside agriculture and fisheries. They work in shops, as migrant workers, in mines, and in online sales. However, there are quite a few unemployed young adults because they do not have any skills. When they feel the need to find a source of income, they take odd jobs as farm labourers or fishermen or go fishing for fish or crabs. In the past, many young people worked at sea, but now, they are more interested in working as gold miners. However, working as a miner does not necessarily make them prosperous. They might be able to build a house by working as migrant labourers, but working in the mines is sufficient for daily living expenses.

b. Marine sector

The primary and most commonly pursued livelihood of the community in the study area is as fishermen, considering their residential location in a coastal area. The following Table 3 presents details of the occupations in the marine sector and their dominance based on gender and vulnerability group types.

Table 3. Table of Dominance of Household Income in the Marine Sector based on Gender and Vulnerable/Marginal Group Types.

Dominance type	Male	Female	Disabled	Youth	Others	Notes
Fisherman						Although rare, there are also males with disabilities who become fishermen
Collecting shells, shrimps, crabs						Although not dominant, other types of groups also collect
Selling marine products						

Note: The data is processed from the survey. The color of the boxes indicates the dominant groups

The work of fishing at sea is primarily done by men within the family, while women sell the marine produce in the market, such as acting as collectors, retailers, or selling directly to consumers. Women are most dominant in collecting shells, shrimps, or other pond products. They also catch these products at the shoreline during low tide. These products are sold when they have a considerable amount (at least 1 kg). They also consume the catch when the quantity is small or when they need food for their family.

In this study, there are disabled groups who also earn income from this sector. In the villages under study, there are disabled individuals engaged in fishing and have access to government assistance. In Cendi Manik, there are disabled individuals actively involved in tourism activities and other community engagements. Although the participation of disabled individuals in these activities is relatively limited and scarce, the study identifies that some disabled individuals access several available jobs, albeit limited ones.

c. Agriculture and Livestock Sector

For the agricultural and livestock sector, both men and women play roles in these activities. Further details regarding dominance data can be observed in Table 4 as follows:

Table 4. Table of Dominance of Household Income Sources from Agricultural and Livestock Sector by Gender and Types of Vulnerable/Marginal Groups

Dominance type	Male	Female	Disabled	Youth	Others	Notes
Large livestock farming (cattle and goats)						Women are dominant except for female heads of households
Small livestock farming (chickens, ducks and others)						
Selling large livestock (transactions)						
Determining the price						
Selling small livestock						
Cultivating agricultural products						There is a labour allocation based on the physical work burden

The data is processed from the survey. The color of the boxes indicates the dominant groups

In the livestock sector, there's little variation in the roles of men and women. In some villages, men predominantly take care of and sell cattle. Meanwhile, women assist their husbands in livestock care when their husbands are away fishing or not at home. Although men usually meet middlemen or buyers for the sale of cattle, the pricing decisions are mutually agreed upon between husband and wife within a farming family. In certain villages and cases where women are the heads of households, they play a major role in raising the family's livestock and participate in deciding when to sell the animals.

Livestock farming is considered a form of savings for families in the study area. Livestock such as cows, goats, chickens, and ducks are raised. These animals are usually sold when the family needs money, especially during disasters or when there's no income from their primary or side jobs. Larger livestock like cows or goats are sold with the agreement of both spouses or the family when there's a need for significant expenses, such as for a child's wedding or higher education (university). Smaller animals are sold when the family lacks income for daily needs.

On the other hand, staple crop farming is usually for the family's consumption. However, in some areas where the production is limited (such as hillside rice farming with minimal yields), the harvest is solely sufficient for the family's consumption. Both men and women are involved in the cultivation (from land preparation to harvesting) and sale of food crops. Men typically negotiate with middlemen for the sale of the produce, while women manage the sales proceeds for the family's needs.

d. Tourism and Micro, Small, and Medium Enterprises (MSMEs) Sector

Most types of livelihoods are predominantly dominated by men. However, in the micro, small, and medium enterprises (MSMEs), women dominate this sector. Working as small-scale traders at home or mobile sellers, retail sellers at markets, culinary businesses, laundry services, and being traders in coastal/ponds/mangrove tourism areas are the jobs undertaken by women and young women. In some of the studied villages, several young women already have online businesses. Detailed research findings are presented in the following Table 5.

Table 5. Table of Dominance of Household Income in MSMEs Activities and Tourism Sector Based on Gender and Types of Vulnerable/Marginal Groups

Dominance type	Male	Female	Disabled	Youth	Others	Notes
Coarse salt pond						
Fine salt pond						
Home-based or mobile small trader						
Online sales						
Culinary business						
Laundry						
Craftsperson						
Trader in tourist areas						People with disabilities and youth also get access to this job type

The data is processed from the survey. The color of the boxes indicates the dominant groups

In some of the studied villages (not all villages), women are also salt farmers and craftswomen. Regarding salt farming, women tend to choose the fine salt farming business as it's physically lighter compared to the coarse salt farming, which is primarily done by men. The income generated from fine salt farming is considerably lower than that from coarse salt farming. For instance, in a day, women can earn between 120,000 to 150,000 by selling 4-5 kilograms of fine salt to a local salt cooperative. On the other hand, in coarse salt farming, men in a group of 12-14 people can produce 3 tons of coarse salt per month, earning a total income of around Rp 12 million. Unfortunately, in other villages, many salt farms have been damaged and permanently closed due to flooding disasters.

In some studied villages, the income of salt farmers, especially women farmers, comes from profit-sharing with the owners of the salt farmland. These salt farms are not actually owned by the farmers themselves. Their status is as cultivators, where their salt production is divided into an 80:20 ratio, with 80% going to the cultivators and 20% to the landowners.

The tourism sector, especially mangrove and coastal tourism, serves as a secondary livelihood source for many fishermen along the coasts of Lembar and Sekotong Districts. This sector provides opportunities for all segments of society to participate in generating income. Men, women, people with disabilities, and youth are identified as accessing and working in this sector in several surveyed areas.

However, in Cendi Manik Village, the mangrove tourism managed by young people collapsed and ceased operation due to a lack of understanding about tourism management, especially in maintaining tourist facilities. As a result, young men who previously had income sources from the mangrove shifted to becoming fishermen or traditional miners. Meanwhile, young women chose to engage in micro, small, and medium enterprises (MSMEs), participate as social activity cadres (posyandu), or remain unemployed at home (not contributing to family income). Meanwhile, in other coastal villages, coastal and mangrove tourism continue to be income sources for various community groups.

e. Other Service Sectors

The job of service labourers in several sectors is a type of work accessed by both men and women in the target areas of the study. The types of labourer jobs vary depending on the potential available

in the surveyed villages. Some work as farm labourers, construction labourers, sanitation workers, and salt packaging labourers. More detailed aspects of this are presented in the following Table 6.

Table 6. Table of Dominance of Household Income Generation in Micro, Small, and Medium Enterprises (MSMEs) and Tourism Sectors Based on Gender and Types of Vulnerable/Marginal Groups

Dominance type	Male	Female	Disabled	Youth	Others	Notes
Coarse salt pond						
Fine salt pond						
Home-based or mobile small trader						
Online sales						
Culinary business						
laundry						
Craftsperson						
Trader in tourist areas						People with disabilities and youth also get access to this job type

The data is processed from the survey. The color of the boxes indicates the dominant groups

Although some fields of work are dominated by male labourers, women can still work in these sectors. Jobs requiring physical strength, such as transporting goods, are typically dominated by men. Women usually engage in tasks considered physically "lighter."

Payment standards vary based on the type of work and the duration of work hours or production targets. Jobs requiring lighter physical exertion usually have lower payment standards compared to physically demanding work, which is predominantly carried out by women. Conversely, physically demanding jobs command higher payments, and these roles are mostly occupied by men.

One common service job performed by men in the study area is working as traditional gold miners. Women do not work in this field due to its remote and physically demanding nature. This occupation is considered to only meet daily needs when the primary job fails to provide sufficient income. Additionally, mining jobs do not provide enough to enable workers and their families to thrive (expressed as "unable to build a house").

A popular choice of work for both men and women in the study area is to become migrant workers or Indonesian Migrant Workers (TKI). Both genders opt for migrant work because it allows them to earn more money, enabling them to buy property or assets like land or houses. When jobs available in the village are deemed insufficient to sustain their livelihoods, residents, including young people, opt to work abroad as migrant labourers.

4.3. The Community's Perception of Climate Change-Induced Disaster Risks and Responses from the Gender and Vulnerable Groups' Perspectives

Tidal flooding is the most frequent natural and hydrological disaster experienced by coastal area residents across all villages in this study. Tidal flooding is intensified by floods resulting from rainfall or river overflow. Its consequences in some villages can lead to flash floods and economic losses for affected communities. Damaged buildings destroyed fish ponds with their yields swept away, unproductive agricultural and plantation lands (with a productivity decrease of up to 75%) due to high salt content in inundated areas are among the impacts caused by tidal flooding and floods.

Aside from tidal floods and floods, they also encounter several hydrological disasters. During the dry season, some villages in this study face drought for several months every year. This drought significantly affects their agricultural, livestock, and fish farming activities.

According to respondents and informants, these disasters are becoming more frequent compared to 20-30 years ago. Moreover, the weather is increasingly unpredictable, making it difficult to foresee the timing and duration of disasters. Although tidal floods occur in almost every village, the frequency varies, happening between 2 times a year to every month. Similarly, the unpredictable bad weather continues to pose challenges. Even though it lasts for 3 (three) months, during this period, there are 2 days of bad weather, 1 day of good weather, and it's often unpredictable when it will occur. Heavy rainfall also contributes to frequent flooding and landslides. The impact of these disasters (rob, floods, drought, bad weather) is exacerbated by human activities. For example, the current increase in "rob" frequency and its disturbance to the residents' livelihoods is attributed to coastal land reclamation carried out by companies near the port areas.

Table 7. The dominance related to vulnerability to hydrological disasters and the role of preparedness from the perspective of gender and vulnerable/marginalized groups

Dominance type	Male	Female	Disabled	Youth	Others	Notes
Vulnerability to hydrological disasters						The elderly and children are dominant
Saving vulnerable residents						Male youth
Saving large livestock						
Unable to carry out livelihood activities						
Household management becomes more difficult due to decreased income						
Household water management during dry seasons						

The data is processed from the survey. The color of the boxes indicates the dominant groups

Based on the study presented in Table 7, the most vulnerable groups to hydrological disasters according to respondents and participants are children and the elderly, followed by sick/pregnant individuals, and then others. The population prioritizes rescuing those who may not be able to save themselves during a disaster. When tidal waves and floods occur, families are on alert to save their parents (the elderly) and children first, as they are considered less likely to rescue themselves quickly. Women are considered vulnerable because this group is deemed more prone to panic than men and young men.

Families with livestock typically relocate their animals to higher ground. They are concerned that their livestock might be submerged in floods or devoured by pythons. Usually, during floods or tidal waves, men in the family are predominantly responsible for relocating their livestock to safer areas, while women are responsible for cleaning their flood-affected homes. This becomes more challenging in families where the head of the household are elderly women. Their livestock also needs to be relocated far away, which, from a gender perspective, burdens female farmers to transport their livestock to safe places far from their flooded homes.

During floods, flash floods, and tidal waves, women also lose their sources of livelihood, such as salt pond and mangrove businesses for collecting clams, shrimp, and crabs that are washed away.

Flooded houses and impassable flooded roads hinder their job search. In agriculture, floods drastically decrease agricultural yields. Many agricultural lands can no longer be cultivated at all due to high salt content. This affects the livelihoods of both men and women who rely on farming and agricultural labour.

The increasingly severe economic impact is also felt by women during droughts for farmers and bad weather for fishing families. Main sources of income for daily sustenance are threatened. Women, as managers of family consumption, also contemplate how to fulfil the family's consumption needs. Especially when disasters like floods and tidal waves cause house flooding, and families have to stay alert at home to prevent water from rising, the family's economic activities are disrupted. This becomes even more challenging when these disasters are difficult to predict in terms of occurrence and duration, posing an increasing burden, especially for women as family financial managers.

Regarding droughts, the community's need to purchase water is as crucial as purchasing food. In this case, women face difficulties in disasters due to domestic needs that require a substantial amount of water. They must manage the family's water consumption while maintaining family sanitation with limited water supply.

For cases involving the impact of disasters in the study area (such as cases of sexual harassment, domestic violence, or child labour), further investigation was not carried out in-depth during the FGDs or surveys. From the questions asked, these issues do not seem to be considered crucial societal issues yet. Moreover, deeper studies are required for cases that are still considered taboo to discuss openly in the community. Secondary data also does not record these cases. However, according to the interviews, cases of child marriage still occur frequently.

4.4. Survival and Adaptation Strategies to Disasters from a Gender and Vulnerable Group Perspective

During floods, several livelihood activities come to a halt, while women take on the role of finding sources to continue providing food for their families. Floods are especially burdensome for those earning daily wages. If the floods last only a short while or a few hours, fishermen can still go out to sea or fish. Women can still gather shellfish. However, when floods or tidal surges last for an extended period, affected individuals reliant on daily income will lose their sources of livelihood. Therefore, to meet the daily consumption needs of the household, women become the backbone, especially since inhabitants express that they don't alter their dietary patterns and nutrition during disasters. Women fulfill these daily consumption needs through various strategies. These strategies are detailed in Table 8 below.

Table 8. Dominance Related to Vulnerability to Hydrological Disasters and the Role of Preparedness from the Perspective of Gender and Vulnerable/Marginalized Groups

Dominance type	Male	Female	Disabled	Youth	Others	Notes
Fish trading business in the market						
Collecting clams, shrimps and mangrove products						
Salt business						
Selling/pawning non-cash savings assets						
Accessing and utilizing SME loans						
Borrowing rice to families/relatives						

The data is processed from the survey. The color of the boxes indicates the dominant groups

First, when the fishermen (men) are unable to go fishing, women or wives engage in fish trading. They buy fish in large quantities from traders coming from outside the village and sell them retail in the market or door-to-door among residents.

Second, they also gather shellfish, catch shrimp, and crabs in the mangrove swamps as a means of livelihood. They feel that the mangroves significantly support their livelihoods because these areas allow them to get more catches compared to when there are no mangroves. However, ownership of these mangrove areas is personal, so they solely rely on the available resources from these mangrove forests. Consequently, it's challenging for them to cultivate commodities that can thrive in the mangrove area.

Third, women who previously owned salt ponds are no longer able to produce salt due to the continuous occurrence of floods, which disrupts the traditional salt processing from coarse to fine salt and selling it in the market.

Fourth, another strategy involves selling their non-cash assets or savings, such as selling plates, small livestock (chickens or ducks), pawning or selling their gold, and household items that they can sell or pawn.

Fifth, women also access SME (Small and Medium Enterprises) credit. Women greatly benefit from credit from SME cooperatives like the "Mekar" Cooperative. This cooperative specifically caters to female borrowers because the goal of SMEs is to empower women's economy through SME development. If these women have previously borrowed, they will compensate the debt. Initially, the SME cooperative provided business management training and bookkeeping administration assistance to female customers. However, the cooperative lacks adequate support. Some women who borrowed from this cooperative used it for developing their SMEs. Nevertheless, frequent disasters result in loans being more directed toward meeting family consumption needs. To repay the cooperative loan, women rely on their husbands' income.

Lastly, if women cannot obtain loans from credit institutions, they borrow from family or close relatives. Usually, they borrow in the form of staple foods like rice. Borrowing from friends or relatives is relatively rare because they and their family or relatives are all victims of the disaster. Regarding disaster-related social assistance, participants in this study stated that they rarely receive external aid when facing disasters. This is because these disasters are routine and occur every month, limiting external assistance.

4.5. The Role of Gender and Vulnerable/Marginal Groups in Institutional and Development Programs

This study identifies several institutions and support programs involving women, young women and men, and vulnerable and marginalized groups in the study area. This is presented in Table 9 below.

Table 9. Dominance Related to the Gender Role and Vulnerable/Marginal Group in Institutions and Development Programs

Dominance type in institutions	Male	Female	Disabled	Youth	Others	Notes
SMEs						
Agriculture, fishery, farming						
Celebrations and religious festivals (Maulid)						
Integrated Health Service Post (Posyandu)						Female teenagers do access although not dominant

Volunteers for disaster emergencies						Male youth is dominant
Mangrove and coastal tourism	Yellow	Green		Brown		People with disabilities do access although not dominant
Annual development program from government funds	Yellow	Green			Blue	Public figures are usually involved in the planning and decision making (control)
Physical development and development that requires human physical labour	Yellow	Green	Red	Brown	Blue	
Social inclusion program						Not available
Social Assistance	Yellow	Green	Red	Brown	Blue	Includes female heads of household

The data is processed from the survey. The color of the boxes indicates the dominant groups

- In this study, the empowerment programs conducted in the research area include the empowerment of micro, small, and medium enterprises (MSMEs) through MSME cooperative programs, prominently mentioned by the target participants across all villages known as the “Mekar” Cooperative. Additionally, there are specific empowerment programs for women available only in select villages, such as the female small-scale salt producers' MSMEs supported by a local salt cooperative. Furthermore, there's the Women Farmers Group (Kelompok Wanita Tani - KWT) that received training and assistance for utilizing home gardens for cultivating vegetables and other backyard crops.
- In agricultural, fisheries, and livestock institutions, men take on dominant roles. Women usually assist at the household level in managing agricultural activities in a broader sense. Women and children are considered 'assistants' in this field.
- Some young women engage in social and community activities such as Posyandu (integrated health services post) and religious festival celebrations (Maulid, etc.). In formal institutions like Posyandu, the involvement of young people as cadres is limited due to many women marrying at a young age and focusing on their families. Cadres in Posyandu are usually dominated by adult women and female figures, for instance, members of women's organizations or social groups. Regarding social and religious festival events, more young people participate, albeit temporarily, mainly during the preparation and execution of the events. Afterward, it's challenging to gather them for volunteer activities as they are busy seeking livelihoods.
- Concerning youth organizations, some villages have disaster preparedness volunteer groups, predominantly comprising young men. However, the status of these organizations varies, with some remaining active and others not. Even in active groups like in Cendi Manik village, their optimal assistance is limited as they are occupied with rescuing and aiding their own affected families. The management of these youth-dominated institutions seems quite minimal. Training and mentoring are only received by a few villages, while in others, these institutions are lacking.
- Men, women, and individuals with disabilities (identified in some villages) have access and participate in institutions involved in tourism and mangrove fields. The government and other stakeholders have intervened in this sector's development, providing training and mentoring in certain villages. Social assistance, social activities, and social media groups have been accessed by everyone—men, women, and marginalized groups with internet literacy. They utilize and benefit from these social aspects.

- f. Regarding the annual development programs funded by the government, community aspirations and participation are inadequately considered based on gender and the vulnerability conditions of various societal groups. Only some selected figures designated as representatives of the community are invited during the planning stages (Musrenbangdes). The explicit involvement of these figures in the planning process advocating for marginalized and vulnerable groups is not mentioned as these parties are still not gender sensitive. They are not fully aware of the emphasis on the importance of involving diverse societal groups with different backgrounds or conditions, which is an essential part. Ultimately, they fail to recognize certain groups such as women who are household heads or disabled groups that need to be encouraged to participate from the outset. From this study, it's evident that the implementation of programs remains predominantly top-down, not fully tapping into the aspirations of the community, particularly the vulnerable and marginalized conditions. Nevertheless, in terms of benefits, the community acknowledges the perceived benefits by both men and women in the target villages, even though they sometimes have limited participation from planning to execution.
- g. Meanwhile, the community typically engages in implementing activities when community self-reliance is required, such as during mangrove planting or embankment construction. In practice, both men and women are involved and feel given the opportunity to participate. Usually, in each household, one or both participate in implementing community development programs. However, specific evaluations and socialization of results are generally not performed. Nonetheless, some physical development programs by the government do not involve the local community but use contractor services. Despite this, the community perceives the embankments as genuinely beneficial.
- h. For minority groups concerning religion, ethnicity, and disabilities, the residents in the study area seem less aware of these different groups in this sector. Even in social activities like the Focused Group Discussions (FGDs) conducted in this study, the importance of identifying and encouraging the participation of these marginalized groups is not a priority for village stakeholders, despite being encouraged by the study's implementing team. Several groups of people with disabilities, elderly women, and women heads of households attended some FGDs. However, based on the responses from participants in the FGDs and respondents in the survey, many stakeholders and residents are not fully aware of the importance of paying attention to these marginalized groups and encouraging their participation in social and community activities.
- i. From observations during this study, it appears that local leaders, both formal government leaders and informal leaders, are open to these involvements. However, they lack initiative because inclusive empowerment programs for women and marginalized groups are still lacking.
- j. Social aid, whether in the form of money, goods, or food, can be accessed by all groups in society. They are only recipients but are not involved in planning, decision-making, or evaluations.

5. DISCUSSION

Based on the findings of the study above, several lessons can be learned:

5.1. It shows nearly equal access and opportunities between men and women to generate income and perform tasks that are nearly identical in their respective jobs.

However, the difference in job types arises because certain occupations, considered hazardous and requiring heavier physical work, are typically dominated by men, such as fishing or labor-intensive jobs. Meanwhile, women are more involved in managing household expenditures and engaging in micro, small, and medium enterprises (UMKM). Women also have access to labor work across various fields such as agriculture, animal husbandry, tourism, small-scale industries, and so forth. People with disabilities and young individuals also have opportunities in family livelihood activities.

Considering the available opportunities and access, with women, disabled individuals, and other marginalized groups entering the workforce in the public sector, it demonstrates that within social norms, everyone has the opportunity to be empowered. However, the conditions of these different groups and their varying needs need to be taken into account. It requires both moral support and facilitation to ensure that the participation of all elements of society can generate optimal impact. It is important to understand in which sectors and within what division of labor are men, women, and adolescents or young people more dominant and why certain groups have access and are more prevalent in those sectors. These sectors can be optimized to empower marginalized groups further. Meanwhile, in the current scenario within the studied area, despite the access and

participation of these groups in identified sectors, there might be certain groups, such as disabled individuals and specific ethnicities, who might not yet fully utilize these opportunities. Furthermore, future implemented programs need to consider specific areas (for example, specific villages). In this study, the potential of natural resources and human resources varies, which consequently affects the potential of existing and developable enterprises.

Therefore, strategies should be contemplated to encourage the participation of marginalized groups in order to improve their livelihoods as an adaptation effort to climate and environmental changes.

5.2. Dominance of Roles and the Importance of Identifying Gender Roles within the Household

In this study, gender roles within the household were relatively less acknowledged as a determining factor in adaptation patterns and the decisions made by the community concerning their livelihoods. Men primarily held the role of primary breadwinners in the household. Public work related to household income remained the primary burden of men. Women took on the role of managing household income and played a supportive role in assisting family expenditures or running micro-businesses by selling goods in the market.

However, women, in fact, held the primary domestic roles and became the backbone of the family's economy during disasters. Women had greater access to credit institutions. They played a significant role in utilizing family savings such as small livestock, pawning belongings, borrowing money or rice from neighbors or relatives, and gathering shellfish. These tasks or roles underscored that women also have crucial responsibilities in ensuring the family's nutritional and daily food security. Meanwhile, the family's consumption patterns remained unchanged even during difficult times caused by disasters or when the head of the family couldn't generate income.

5.3. Gender roles and vulnerable/marginalized groups play pivotal roles in institutional aspects and community empowerment programs

Overall, many people in the community still do not have access to actively participate and have their aspirations heard, even though the local government's development planning programs claim to employ participatory approaches, especially in community empowerment programs related to climate change adaptation or other institutional activities. They do not feel that they benefit much or understand that development efforts are being made for their sake.

This is due to their limited involvement from the planning stage to the evaluation phase. People are not equally and fairly engaged in the empowerment and institutional processes; their participation is usually limited to instances requiring physical support, such as planting mangroves or constructing embankments. There are self-help efforts involving the community to mitigate the impact of disasters, such as limited initiatives by affected communities to build embankments against floods or dig wells. However, these initiatives are often handled or delegated to contractors in implementation.

5.4. Aspects of Community Development in the Context of Adaptation to Disaster Impacts

Specifically concerning the aspect of climate change adaptation, both men, women, and other marginalized groups in nearly all study areas have not been fully aware of the need to adapt to climate change. Related parties such as the government and other organizations have not emphasized initiatives related to guiding the community in adapting to climate change and its associated impacts. Some affected communities in this study even complained that the preparedness and assistance provided for affected communities were still minimal. Due to the frequent occurrence of disasters, affected residents often do not receive assistance, be it for consumption or other needs, while economic activities halt due to flooding or extreme weather conditions.

Similarly, in terms of adaptation efforts, there are hardly any programs provided by any party to the residents, except for mangrove development and its utilization as a tourist destination. However, this is still faced with sustainability issues due to the limited capacity of local residents in management and maintenance. The number of people involved is also limited and exclusive. Therefore, regarding gender and marginalized groups, there are no significant issues because some residents have never received assistance programs or support to enhance their adaptive capacity to climate change.

Considering the crucial role of women and the existence of disabled groups that still actively participate in social and economic activities, the empowerment of these groups needs to be a focus of future endeavours. Moreover, in this study, there is minimal attention given to minority ethnic and religious groups. In most of the villages studied, these groups are marginalized since their

involvement in social community activities at the village level, such as these FGDs, largely involves the majority population of Sasak ethnicity and Muslim religion. In contrast, involvement from other religious and ethnic groups is very limited, and in most villages, participants are primarily Muslims and Sasak, representing the majority community.

5.5. The potential issues related to gender and social inclusion in climate change adaptation programs

For the design of climate change adaptation programs in this study area, there are several potential issues that are important to consider:

- a. Segregated data based on gender, age, disability, poverty status, health condition, ethnicity, religion, and others related to marginalized groups are still very minimal and outdated. The scarcity of detailed data begins at the village level and extends to grassroots levels. Meanwhile, this segmented data is crucial for monitoring the progress of empowerment activities.
- b. Socio-cultural barriers can hinder the process of encouraging participatory and inclusive planning, decision-making, implementation, and evaluation. The gender-based division of domestic, public, and institutional roles potentially hampers the achievement of goals in future adaptation projects. Social and cultural norms have regulated the appropriateness and inappropriateness of behaviour from a gender perspective, often hindering women and adolescent girls from participating in empowerment activities related to the public sector. Furthermore, neglecting the cultural division of domestic and public work has the potential to burden one gender if they respond well and take on roles in future adaptation programs. Early marriage for women poses a potential issue in future inclusive approaches. This issue leads to a lack of involvement and contribution by adolescent girls in the public sector as they focus on household duties and have limited involvement in the public sector. Young household groups can be potential targets in the future provided there is sensitivity, support from their surroundings, and specific programs for them.

6. CONCLUSION AND RECOMMENDATION

Based on this study, there are several conclusions and recommendations that can be provided regarding fair, equitable, and gender-responsive programs.

- a. There are many opportunities for programs to ensure the involvement of men, women, and marginalized groups in empowerment programs aimed at adapting to climate change. To ensure inclusive participation in climate change adaptation, the types of potential activities should be specific to locations that already provide access to marginalized groups but have not been optimized. Men play a significant role in the public sector and are the main earners for the family. However, upon closer examination, women also have dominance not only in managing the domestic sector but also as family breadwinners in the public sector, albeit culturally and normatively referred to as secondary family earners. In this regard, society truly acknowledges the significant role of women and vulnerable/marginalized groups in their livelihoods, especially during difficult times such as disasters. Women also have roles (access, participation, control, and benefits) in public sector fields such as SMEs, agriculture, livestock farming, tourism, and institutions. However, certain social norms create behavioural differences concerning gender and vulnerable/marginalized groups. Therefore, the involvement of these different groups needs to consider social norms to adjust timing, dominant roles, and encourage the engagement of these different groups in sectors that are still absent (those already existing need optimizations, while those absent require gradual enhancement of their roles). This is to prevent double burdens and conflicts of horizontal, vertical, domestic, and public interests.
- b. To optimize the adaptive capacity of disaster-affected families more efficiently and easily mobilized, it is essential to encourage the development of existing potentials that align with cultural norms, making leverage more accessible. The role of the project is to facilitate the functions of these existing potentials to have a more effective economic leverage. In this regard, activities involving active roles for women are crucial to be promoted and optimized. For instance, providing training and mentorship for existing economic activities (various types of SMEs where women dominate) to transform into creative, commercial economic activities with a broader market reach. Similarly, the family financial management system could be considered for improvement through training in financial management, bookkeeping, and strategies for managing family economics. This is expected to aid in improving the economy and making more resilient livelihood choices against future disasters. For example, if families can afford to purchase land outside disaster-prone areas, a more orderly relocation can be encouraged. From the research findings, there are several sectors and public domains where women and other vulnerable groups have gained access and actively participated.

- c. The presence of relatively open local leaders presents a crucial opportunity to encourage fair and equal approaches for women and other vulnerable groups. Continuous development of communication with both formal and informal figures is essential since their gender awareness and responsiveness remain low. Every empowerment program within the project needs to engage the community from the planning phase to implementation and evaluation to ensure that no group or party is overlooked in any activity.
- d. Meeting or training methods should be tailored to fit the local culture and norms, enabling women and marginalized groups to speak up, express opinions, aspirations, and actively participate in forums or engage in learning during training sessions. At present, women and youth tend to be reluctant to speak in larger forums, especially when these forums include various influential figures or a wide range of groups. This poses a significant challenge in preparing institutions to anticipate issues related to social interactions involving vulnerable groups. Therefore, it's crucial to employ more homogeneous approaches so that voices from grassroots levels can be collected, for example, by creating separate meeting groups for village leaders and women or persons with disabilities.
- e. There is a need to develop safeguarding mechanisms to ensure that all groups can fulfill their roles safely and comfortably. All parties need to recognize the importance of social protection and preventing violence against specific groups, especially women and other vulnerable groups. Currently, such mechanisms are absent in the study area due to a lack of awareness regarding the significance of protecting the rights and safety of all parties, and culturally, this subject is still considered taboo. A progressive and proactive approach involving stakeholders from diverse backgrounds, including formal leaders (government officials) and informal figures like women leaders, children, religious leaders, among others, is necessary to agree upon these safeguarding mechanisms.
- f. To support a more comprehensive approach and ensure the inclusion of vulnerable groups in future programs, the role of field officers (FO) or field agents is crucial. Intensive monitoring can be conducted with the presence of FOs who understand the local socio-cultural context, serving as communication channels between the project team and the target groups in the field.
- g. The segregated data based on gender and vulnerability conditions in the target areas is still very lacking.
- h. The presence of Field Officers (FOs) would facilitate the refinement of this segregated secondary data. Engaging with community leaders at the village level (such as sub-village heads, neighborhood chiefs, and Posyandu cadres) organized within an institution or forum to update segregated population data based on vulnerability is essential. Over the project duration, refining this segregated data will become a crucial resource in mapping the development of roles for vulnerable groups to achieve more effective, fair, and equitable outcomes.
- i. Furthermore, evaluation-based interventions are important to be conducted regularly to understand the progress that has occurred and the subsequent needs for more equitable and fair outcomes.

Annex 4. REPORT ON SOCIAL-ECONOMIC STUDY AND VULNERABILITY TO CLIMATE CHANGE DISASTERS IN THE COASTAL AREAS OF LOMBOK

I. INTRODUCTION

1.1. Background

The southern part of West Lombok area, located in the Lembar and Sekotong Districts, is a region vulnerable to hydrometeorological disasters. Several common disasters include tidal floods, regular floods, droughts, and tornadoes. In several coastal villages, tidal floods occur almost every month, inundating settlements, agricultural areas, and fishponds. The escalation of tidal floods gradually increases from year to year, triggered by rising sea levels and higher flood intensity due to increased rainfall. The impact of tidal floods becomes more massive when floods occur simultaneously, causing higher inundation of water into mainland areas.

The Lembar and Sekotong Districts are classified as dry climate regions with hilly topography. Hence, these areas are highly susceptible to drought disasters. Entering the months from June to October is when communities start facing difficulties in accessing water, limited agricultural production, scarcity of animal feed, and the spread of diseases due to poor sanitation. The costs of adapting to such situations become significantly high, especially for clean water, animal feed expenses, and the low value of rain-fed agricultural production.

The hilly topography with low to moderate vegetation coverage creates vulnerability to floods. Floods quickly flow into the sea not only through existing rivers but also through many eroded land crevices, creating a swift flow of water through residential roads toward the sea and subsequently causing larger tidal flood areas. The flood situation worsens with high and unpredictable rainfall due to climate change.

The impact of these various disasters in this region significantly affects many aspects. Tidal floods and regular floods have disrupted social, institutional, and economic activities, as well as a decline in environmental quality and public health.

The Lombok Climate Change Consortium (LC3) has taken the initiative to address the disaster conditions in this area with funding support from the Adaptation Fund program. This support aligns with efforts by the government and communities to reduce and mitigate disasters through several programs and activities.

Currently, LC3 is in the final stages of drafting a proposal and requires empirical data support related to various aspects, particularly social, economic, disaster-related, gender, and others. This underlines the importance of conducting a 'Social-Economic, Institutional, and Disaster Study,' specifically in the southern part of West Lombok's coastal areas, in the Lembar and Sekotong Districts.

1.2. Objective

- 1.2.1. Understanding the social, institutional, and economic conditions of communities in the coastal areas of six villages in the Sekotong and Lembar Districts
- 1.2.2. Analyzing climate disaster risks concerning various aspects: social, institutional, economic, and environmental
- 1.2.3. Providing input for data and information support related to the development of the project proposal proposed by LC3

1.3. Output

- 1.3.1. Overview of the community's condition based on their social capital, institutional roles, livelihood sources, and income from various community initiatives
- 1.3.2. Overview of the various disasters and their impacts on different aspects faced by the community
- 1.3.3. Formulation of recommendations to support the needs for drafting proposals for the Adaptation Fund program

II. METHODOLOGY

2.1 Method

The study employs a descriptive method, which is a research approach aimed at describing and analyzing phenomena or events according to their actual conditions or situations. The main objective of the descriptive method is to provide a clear and detailed overview of a problem, occurrence, or population without manipulating variables or inferring cause-and-effect relationships.

2.2 Study Location

The study's location is in the coastal areas of two districts, namely Lembar District and Sekotong District in West Lombok Regency. From these two districts, there are three villages bordering the beach, as follows:

Table 2.1 Location of Study, District, Number of Villages, and Number of Huts

Name of District	Number of Villages	Name of Village
1. Lembar	3 Villages	1. Lembar
		2. South Lembar
		3. Labuhan Tereng
2. Sekotong	3 Villages	a. Cendi Manik
		b. Central Sekotong
		c. West Sekotong

2.3 Data Collection

Data collection utilizes observation techniques, in-depth interviews, and Focus Group Discussions (FGD). Observation involves systematically observing and recording the behavior, events, or phenomena observed in the research object. In-depth interviews are a technique for deeply exploring information with preselected respondents. FGD is a technique for gathering information from a group of people or informant sources in one place, guided by prepared key questions.

2.4 Data Source

The data sources include secondary and primary data. Secondary data is collected from documents such as reports, publications, maps, and other available materials in village government, regional government, and other sources. Primary data is collected from the results of interviews and FGDs.

Determination of Respondents

Respondents are selected based on cluster sampling quotas. Each village is allocated a quota of 12 respondents, and clustering involves the representation of elements present in the village, including: village officials, fishermen, farmers, micro, small and medium enterprises (MSMEs) owners, community leaders, religious figures, youth, and female representation. Therefore, the total number of respondents across the 6 villages is 72 respondents.

2.6 Variables

- a. The social and institutional variables assess several parameters: social capital includes social and institutional parameters that positively contribute to creating harmony in family and community life. The mentioned social value can be related to both formal and informal aspects.
- b. The economic variable assesses parameters related to community economic activities across various sectors, community income, and potential business opportunities that can be developed.
- c. The disaster vulnerability variable examines parameters of various disasters and their potential impacts on various aspects: social, economic, environmental, institutional, health, and infrastructure.

2.7 Data Analysis

- Social data analysis, involving descriptive analysis, includes interpreting data obtained from observations, interviews, and FGDs, to identify patterns, relationships, and meanings from the collected data, providing a deeper understanding of the social phenomena under investigation.
- Economic data analysis includes descriptive analysis to explore community economic sources, diversity of businesses, and community income in various economic activities.
- Climate disaster vulnerability analysis applies the RCRA (Risk Climate Rapid Assessment) approach. Data analysis uses (1) disaster assessment formats, and (2) scoring models to determine the severity level of disasters by combining the likelihood and consequences scales.

Table 2.2 Determination of disaster level based on likelihood and disaster consequence

Hazard Matrix			Consequence		
			Extraordinary Score=3	Medium Score=2	Not Present Score=1
Likelihood	Almost Certain	Score=3	Extremely Hazardous (6)	Hazardous (5)	Somewhat Hazardous (4)
	Possible	Score=2	Hazardous (5)	Somewhat Hazardous (4)	Less Hazardous (3)
	Rare	Score=1	Somewhat Hazardous (4)	Less Hazardous (3)	Not Hazardous (2)

III. RESULTS & DISCUSSION

3.1 General Description of Study Location

a. Population Size

The study focuses on villages located along the coastline. Based on geographical positioning, six villages meeting these criteria have been identified. These six villages are situated across two districts, with varying numbers of hamlets. Below is an overview of the study area, ranging from the district level to the hamlet level.

Table 3.1 Location of study based on district, village, and hamlet level

District	Village Name	Number of Hamlets		Nama of Coastal Hamlet
		Hamlets	Coastal Hamlets	
1. Lembar	1. South Lembar	11	2	Cemara dan Puyahan
2. Sekotong	2. Cendi Manik	17	3	Madak I, Madak II, Madak Beleg
	3. Central Sekotong	24	3	Tanjung Batu, Aik Tangi dan Lendang Re
	4. West Sekotong	11	2	Jerenjeng, Aik Semin

Source: Village Profile, 2020.

Each village has a varying number of hamlets, some even falling into the category of having a substantial number of hamlets. Consequently, several villages are currently in the process of village expansion (Labuhan Central Sekotong Village, Cendi Manik, and West Sekotong). The six villages possess hamlets directly bordering the coastline, as depicted in the table above.

However, the number of hamlets does not necessarily linearly represent the population count in each village. South Lembar Village, with a total of 11 hamlets, is the village with the highest population, while Lembar Village, with 7 hamlets, has the smallest population. The population and number of households (HH) for each village are presented in the following table, along with the population count based on gender (refer to Table 3.2 and Table 3.3).

Table 3.2 Population size and Number of Households in each village

District	Village Name	Population Size	
		Population Size	Number of Households
1. Lembar	1. South Lembar	10.723	3.442
2. Sekotong	2. Cendi Manik	5.699	1.863
	3. Central Sekotong	9.339	2.918
	4. West Sekotong	8.781	4.058

Source: Village Profile , 2020.

Table 3.3 Population Size in each Village based on Gender

District	Village Name	Population Size	
		Male	Female
1. Lembar	1. South Lembar	5.436	5.287
2. Sekotong	2. Cendi Manik	2.831	2.868
	3. Central Sekotong	4.664	4.699
	4. West Sekotong	4.055	4.736

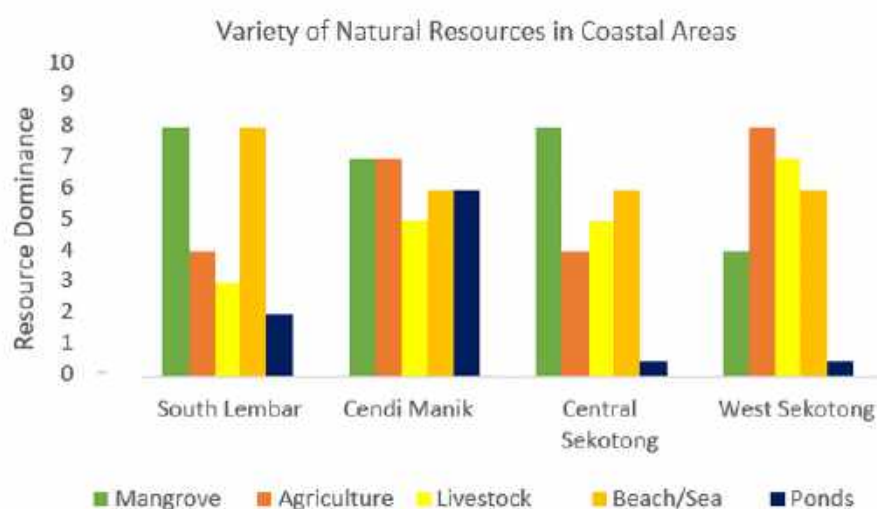
Source: Village Profile, 2020

Observing the distribution of the population based on gender in the table above, there appears to be a proportional number of males and females in each village.

3.2 Characteristics of Natural Resources in Coastal Areas

a. Variety of Natural Resources in Coastal Areas

There are at least five prominent natural resources considered important by the inhabitants residing in coastal areas. The significance of these resources is not only from an economic perspective but is also associated with their roles in social and environmental aspects. These five natural resources include mangroves, agriculture, livestock farming, beaches/sea, and fishponds (Figure 3.1).



Picture 3.1 Variety of resources in study location

Based on the above image, it is evident that the mangrove resources hold significant value, especially in three villages: South Lembar, Cendi Manik, and Central Sekotong. The largest distribution of mangroves exists in Cendi Manik, South Lembar, and Central Sekotong. Beaches and the sea hold importance in all villages, as a majority of the population depends on livelihoods as fishermen.



Picture 3.2 Map of studied village and spread of mangrove resources

Figure 3.2 above illustrates the distribution of prominent mangrove resources in three villages. Other resources such as agriculture, livestock farming, and fishponds are the mainstays for the other three villages: Lembar, Labuhan Tereng, and West Sekotong. The beach is considered highly significant for South Lembar village, as the Cemara beach area is a focal point for beach tourism.

b. Various use of natural resources in Coastal Areas

Mangrove Resources

There are 8 species of mangroves found in the study area, with the most abundant being the *Rhizophora apiculata* species, followed by two other species: *Avicennia marina* and *Ceriops tagal* (Japa L and Didik S., 2019). The *Rhizophora* species are highly prominent and distributed across all study locations. The utilization of mangroves varies significantly in each village, and in general, 6 types of mangrove utilization have been identified (Table 3.4).

Table 3.4 Various utilization of coastal and mangrove resources in Coastal Areas

Village Name	Various Utilization					
	Mangrove Tourism	Shellfish / Crab Collection	Silvo-fisheries Mangrove	Mangrove By-Product	Ponds	Beach Tourism
South Lembar	√	√	√			√
Cendi Manik	√	√	√		√	√
Central Sekotong	√	√	√	√		√
West Sekotong	√	√	√			√

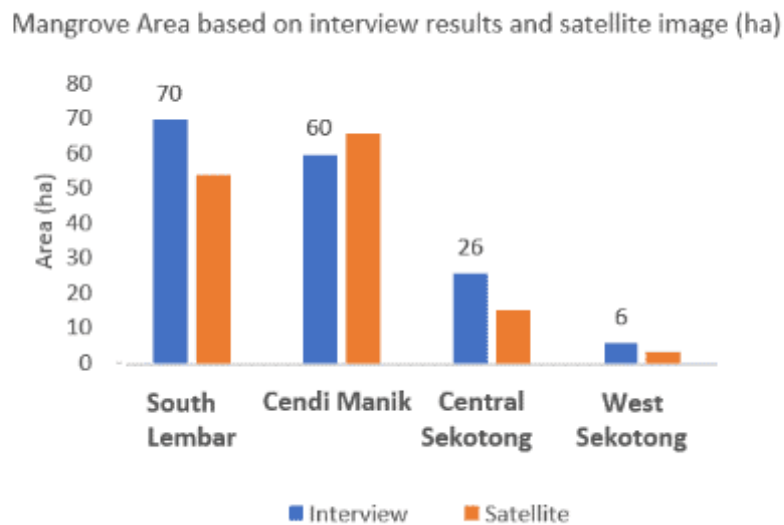
Note: √ Low Utilization √√√√√ Very High Utilization

Mangroves can be assuredly considered as one of the sources of income for the coastal community. Every day, they gather crabs, clams, and fish beneath the mangroves and utilize them to develop fish farming or silvofisheries. Prominent mangrove utilization for tourism is observed in Central Sekotong Village, South Lembar Village, and Cendi Manik Village. The management of tourism is conducted by the Pokdarwis (Tourism Awareness Group) in collaboration with the BUMDes (Village-Owned Enterprises). Lembar Village has the least amount of mangroves or could be said to have nearly depleted them because the mangroves grow sporadically. Most of the mangrove areas have been utilized for milkfish ponds. Cendi Manik Village utilizes mangroves in various ways and still possesses a relatively large mangrove area. Central Sekotong Village is the only village capable of utilizing mangroves for processed products, specifically producing mangrove coffee. However, this venture has

been suspended for some time to ensure the safety of the product for consumption.

The community also relies on income from mangrove seedlings. Communities in three villages is Cendi Manik, South Lembar, and Central Sekotong—have the capability for mangrove seedling cultivation. Their seedling products have been sold to various parties, including the BPDAS NTB (Regional Watershed Management Agency of West Nusa Tenggara), used for the Forest and Land Rehabilitation program.

The precise data on the extent of mangroves in each village is not well-identified. From interviews, respondents provided varied answers, with many not knowing the accurate information. However, it can be estimated that villages with relatively large mangrove areas are Cendi Manik, South Lembar, and Central Sekotong. Regarding the estimated mangrove area, two versions are presented: based on interview results and spatial data (Figure 3.3).



Picture 3.3 Mangrove area based on 2 versions, interview results and satellite images in 6 villages

The total mangrove area based on interview results is 179 hectares, whereas the satellite image data indicates 148 hectares. Actually, these figures can be understood, and the difference is not too significant because the satellite image estimation (Google Earth, August 9, 2023) calculates based on the expanse of mangrove areas, excluding small, scattered spots distributed across several areas. These small areas, for instance, exist between ponds, among paddy fields, or in gardens, with sizes ranging from 1 to 10 square meters. In contrast, the interview-based calculation considers the mangrove area based on these scattered spots.

Agricultural Resources

The agricultural resources in coastal areas are quite diverse, ranging from utilization for paddy fields, dry fields, gardens, home gardens, and livestock. The study did not determine the specific area for each of these uses but only estimated the value of their utilization, as presented in Table 3.5.

Table 3.5 Various utilization of agricultural resources in coastal Areas

Village Name	Various utilization					
	Paddy Field	Dry Fields	Garden	Plotted Yard	Livestock Farming	Tide System
South Lembar	√	√	√	√	√√	
Cendi Manik	√	√	√	√	√√	
Central Sekotong	√	√	√	√	√	
West Sekotong	√	√	√	√	√√	

Note: ✓ Low utilization ✓✓✓✓✓ Very high utilization

The prominent agricultural resources in coastal areas include dry fields, paddy fields, gardens, and livestock farming. No evidence of tidal agriculture systems was found. Paddy fields in coastal areas offer the opportunity for planting 2-3 times a year due to relatively available water compared to farming on higher topography, where planting occurs only 1-2 times a year. Rice yields in paddy fields can reach 3-5 tons/ha, whereas in dry fields or gardens, rice production ranges from 1-2 tons/ha.

The livestock commonly raised by the inhabitants are cows and goats. Typically, goats are individually owned, while cows are managed under the 'ngadas' system. Under this system, cows belong to someone but are raised by the community on a profit-sharing basis. The number of cows raised ranges from 2 to 4, and with the profit-sharing system (owner: caretaker ratio is 1:1), on average, farmers can produce 1-2 calf offspring per year.

Sea Resources

The sea is the mainstay for most of the inhabitants living in coastal areas. The sea is not just an activity for men as fishermen, but women also significantly contribute to activities on the beach and at sea. Sea-related activities include fishing, boat utilization services, MSMEs in beach tourism areas, crab, clam, and fish collection, salt and fishpond activities. These activities are also accompanied by downstream activities involving sea product marketing by women and processing sea products (shrimp paste, salted fish, crackers).

3.3 Social and Institutional Aspects

In terms of social and institutional aspects, the profiles of the six villages bear similarities to each other. The community exhibits a strong social capital in their participation in activities related to public interests. The inhabitants assist each other when a family faces difficulties or when they collectively strive for common goals. Practices of mutual assistance during times of death, illness, marriage, or childbirth are still strongly upheld as social norms to maintain community harmony.

Social capital is also evident in community efforts to mitigate both flood-related disasters and other calamities. For instance, to reduce the impact of floods, residents in South Lembar and Cendi Manik engage in collective efforts to build embankments as a form of protection. In Cemara, South Lembar, an independently constructed embankment spans approximately 2 kilometers and stands at a height of 0.5 meters. Estimated in monetary terms, the construction of this 2-kilometer embankment has cost around 0.7 to 1 billion Indonesian Rupiah.

Regarding institutional aspects, the community has formed social groups based on sectoral and thematic needs. For instance, in the studied village locations, there are groups of fishermen, farmers, tourism awareness groups, and business groups. Concerning disaster mitigation, the community has responded to their village conditions by establishing disaster preparedness instruments, designating these six villages as Disaster-Resilient Villages (Destana), Climate Change Program Villages (Proklim), and Community-Based Disaster Preparedness (SIBAT).

The significance of these various institutional groups depends largely on the context. During emergency situations, groups formed for disaster management play a crucial role. However, generally, the role of village leaders is considered essential as they act as the front liners in responding and taking action during significant events at the village or sub-village levels.

3.4 Livelihoods and Income

The variety of livelihoods among the coastal area inhabitants is diverse, prominently involving fishing, farming, and livestock rearing. Household members engaged in economic activities aren't limited to just fathers; wives also participate in specific tasks. Villages that have fish or salt ponds observe involvement from fishermen and farmers in these activities.

Typically, people do not rely solely on a single occupation. Relying on just one job may not guarantee sufficient income, and it can pose risks to their food security or overall livelihood. Consequently, individuals engage in multiple livelihoods, such as being both a fisherman and a farmer, a fisherman and a livestock farmer, a farmer and a gold miner, among other combinations. The following provides an overview of the variety of livelihoods and estimated earnings for each type of livelihood (Table 3.6).

Table 3.6 Various livelihoods of population in coastal areas

Various Livelihoods	Description	Estimated Income (IDR)
1. Farmer	Farmers in dry land, cultivate twice a year, planting rice once and planting other crops like legumes and vegetables once. Rice yield ranges from 1.5 to 2 tons per hectare for personal consumption. The average land ownership is 0.5 hectares.	2.100.000
	The yields of legumes and other crops are consumed by the farmers themselves and sold. Commonly grown legumes include soybeans, corn, while vegetables include beans.	600.000
2. Cattleman	Most farmers rear livestock using a sharecropping system (ngadas), with an average of 2-4 head of cattle per family. Each year, one cow gives birth, and the price of a 6-12 month old cow is approximately 6 million rupiahs per head.	6.000.000
3. Fisherman	Fishermen engage in capturing fish, exploring areas up to 2 km using small boats, with around 5 horsepower. They employ netting and fishing techniques. The average catch per day ranges from 3-5 kg, with a selling value of IDR 90,000 – 150,000 per day. On average, they spend about 20 days per month at sea.	4.800.000
	Crab and shellfish fishermen are commonly found within the mangrove area. Crab catching is predominantly performed by men, while shellfish catching is carried out by women. The yield varies, ranging from IDR 30,000 – IDR 50,000 per day. The effective time spent catching crabs and shellfish is around 20 days per month.	4.800.000
4. Micro, Small, and Medium Enterprises (MSME)	The predominant business in the coastal area is micro and small businesses, such as selling from small kiosks or stalls at home and around tourist spots. The items sold vary from basic necessities, snacks, processed products, to food and beverages. During Saturdays and Sundays, sales volume at tourist locations can be 3-5 times higher than usual days. Normal daily income ranges from 75,000 to 100,000 IDR, while during peak times it reaches around 300,000 IDR per day.	18.000.000
	The food processing business is conducted at a household scale, usually performed individually or in groups. Various processed foods include making snacks and cakes. Production takes place every day with an effective time of about 25 days per month. Daily income ranges from 50,000 to 100,000 IDR.	12.000.000
5. Ponds	The milkfish and crab ponds are managed by the local community with an area ranging from 10 x 10 meters. The crabs are raised in the same area as the milkfish ponds. The land status varies, with some milkfish ponds being rented by farmers since the pond owners come from outside the village.	3.000.000
	Salt ponds, managed by the community with	6.000.000
6. Services	Tourism Services	12.000.000
	Agricultural laborers, construction workers, and craftsmen, daily wage averages around 80,000 IDR, with a job opportunity of 60 days per year.	4.800.000
7. Village Official	Village officials are waged between 2 – 3 million/month.	
8. Other	Odd jobs or miscellaneous work involve individuals seizing every job opportunity they can take on as long as they are capable of doing it. Typically, these miscellaneous jobs encompass various tasks like agricultural labor, construction work, and small-scale mining. Most people engage in small-scale mining with unpredictable earnings as it is subject to chance or luck.	6.000.000

Source: Primary Data

As previously explained, generally, inhabitants do not rely solely on one type of livelihood. Within a year, they engage in several types of work. Their ability to partake in diverse activities is feasible due to sufficient available time. For instance, fishermen work during the night and engage in farming or livestock activities during the day. Similarly, when they are farmers, they are busy with agricultural activities for only 3-6 months a year, and the rest of the time, they may work as laborers or in other occupations. The following presents an estimation of the income of inhabitants engaged in primary farming and fishing livelihoods, whose earnings stem from a combination of diverse job types (Table 3.7).

Table 3.7 Estimated income of population based on various income sources

Main Profession	Income Source Combinations	Total Income (Rp)
1. Farmer	• Farmer – Cattleman	8.700.000
	• Farmer – Cattleman – Services	13.500.000
	• Farmer – Cattleman – Gold Miner	14.700.000
2. Fisherman	• Fisherman – Farmer	12.300.000
	• Fisherman – Farmer – Cattleman	18.300.000
	• Fisherman – Gold Miner	15.600.000

Source: Processed Primary Data

If linked to the per capita income, considering an average family size of 4 individuals per household, the range of earnings for Farmers and Fishermen falls around Rp 5,958 to Rp 12,534 per capita per year.

3.5 Disaster Aspects

a. Various Disasters

There are four types of disasters experienced by the inhabitants of the six coastal villages, ranging from mild to severe intensity. The most frequent disasters experienced by the population are tidal floods, floods, droughts, and strong winds/cyclones. Here is an overview of these disasters (Table 3.8).

Table 3.8 Overview of various disasters and the intensity of disaster occurrences

Disaster Type	Description	Impacted Village			
		South Lembar	Cendi Manik	Central Sekotong	West Sekotong
1. Tidal Floods	Floods occur every month with a duration of 2-3 days. The duration of each flood lasts approximately 3-5 hours.	5	3	4	3
2. Flood	Major floods occur 2-3 times a year and have an exacerbating impact on worsening the situation during floods.	4	4	4	3
3. Drought	Drought leads to difficulties in obtaining clean water, scarcity of animal feed, crop failures, and deteriorating public health	4	4	4	4
4. Strong Winds	The occurrence of strong winds and tornadoes usually happens during the west wind season, but according to the residents, these occurrences of strong winds can now vary in timing. These strong winds are followed by abrasion, which damages coastal infrastructure, including embankments.	4	3	4	4

Source: Primary Data

Note: 1. Very lightly impacted, 2 Lightly impacted, 3 Impacted, 4 Heavily impacted, 5 Very heavily impacted

The frequency and impact of tidal floods have increased over time. According to interviews conducted in Central Sekotong, about 10 years ago, the distance between settlements and the coastline was around 50 meters. However, presently, settlements are situated at the very edge of the coastline, such that when the waves rise by just 2 meters, water enters the houses. Severe tidal flood incidents occurred in the Cemara hamlet, affecting 450 households. According to residents, tidal floods occur more frequently, not only during full moon periods but also unexpectedly at other times. Here is an overview of tidal floods:

- Occur every month, lasting 2-3 days during full moon, with a duration of 3-5 hours; the impact intensity ranges from low to moderate, with water levels reaching 10-30 cm into residential areas.
- Occur 2-3 times a year triggered by floods, lasting 1 day or more, with moderate to high impact intensity; water levels reach 30-60 cm.
- Tidal floods worsen when floods occur simultaneously. Flood inundation can last 1-3 days with moderate to high impact intensity.

Floods occur due to two main factors: high-intensity rainfall and degradation of land cover due to encroachment and illegal small-scale mining activities in the study area. Although floods are not entirely caused by climate change, their impact triggers larger tidal floods. This happens because the floodwater volume meets the tidal flood, causing water levels to rise further and infiltrate agricultural and residential areas.

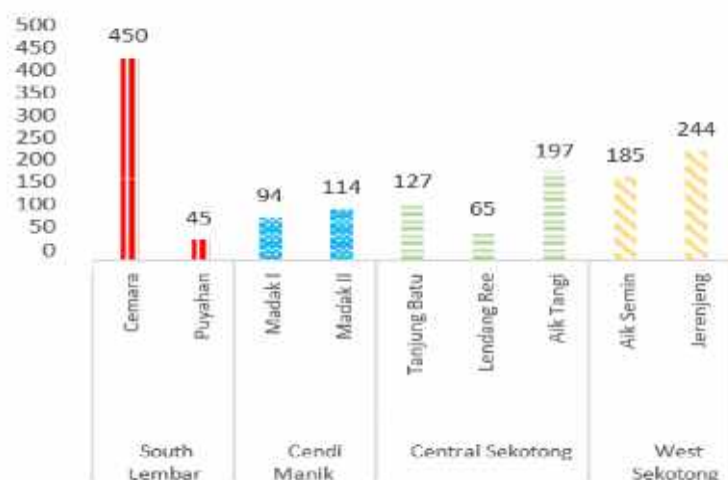
b. Number of Hamlets and Household Affected by Tidal Floods

From the six surveyed villages, there are 19 hamlets located along the coast that are at risk of experiencing significant impacts, particularly from tidal floods. Each hamlet exhibits varying levels of severity in terms of disaster impact. However, generally, the residents living near the coast experience tangible effects from tidal floods, regular floods, and strong winds (cyclones). Overall estimates suggest that tidal floods have the potential to affect approximately 3,658 households across these 19 hamlets. The distribution of the number of tidal flood impacts can be observed in the following figure.

Table 3.9. Population size affected by Tidal Floods

District	Village Name	Number of Hamlets	Number of Households
1. Lembar	1. South Lembar	2	495
2. Sekotong	2. Cendi Manik	2	208
	3. Central Sekotong	6	394
	4. West Sekotong	7	429

Source: Primary Data



Picture 3.4 Number of hamlets and households affected by tidal floods

The potential impact ranges from mild to severe across 17 hamlets, with an estimated 1,848 households affected. Assuming an average household size of 4 individuals, the potential impact of tidal flooding affects around 7,392 people. Tidal floods have been occurring for quite some time, but their intensity has increased over the past five years. Historically, when tidal floods happen, the community tends to resign themselves to the situation and hope for the water to recede quickly. The most concerning events occur during the night, as each household can only endure the situation within their own homes.

Official gathering points or evacuation sites have been designated by the government. However, these locations have never been utilized by the affected residents during tidal flood incidents. This is due to the inadequate conditions at these sites, such as lack of provisions for food, rest, and healthcare. As a result, when tidal floods occur, individuals choose to independently endure the situation within their own residences, waiting for the waters to subside.

3.6 Analysis of Disaster Hazard Level and Vulnerability

a. Danger Level Analysis

The analysis assesses the level of danger by combining two parameters: the likelihood scale and the consequence scale. The likelihood scale evaluates disasters based on three levels: frequent or almost certain, possible, and rare. Meanwhile, the consequence scale evaluates the level of disaster danger across three categories: extreme, moderate, and not evident. The description of these two parameters is presented in the following Table 3.10:

Table 3.10 Hazard risk level assessment based on likelihoods and consequence parameter

Likelihood Scale		
Category	Score	Description
1. Almost Certain	3	<ul style="list-style-type: none"> Can occur several times a year Probability of occurrence is more than 50%
2. Possible	2	<ul style="list-style-type: none"> Occurs once in 5-10 years Probability of occurrence is 25-50%
3. Rare	1	<ul style="list-style-type: none"> Occurs once in a period of more than 10 years Probability of occurrence is less than 25%
Consequence Scale		
1. Extreme	3	<ul style="list-style-type: none"> The impact of damage occurs in most areas of the village/city May hinder the achievement of government development targets Requires additional specialized capacity over the long term Requires a significant additional cost (central government assistance)
2. Moderate	2	<ul style="list-style-type: none"> The impact of damage occurs in a small part of the village/city May disrupt the achievement of government development targets Requires certain additional capacity Requires additional budget from own funds (reallocation) from the Local Government (District/Province)
3. Not evident	1	<ul style="list-style-type: none"> The impact of damage is almost non-existent Does not hinder the achievement of government development targets Does not require any additional capacity Does not require any additional costs
Total Interval Score	2-6	
Hazard Level Categorization based on Total Score		
Total Score	6	<ul style="list-style-type: none"> Extreme Hazard
	5	<ul style="list-style-type: none"> Hazard
	4	<ul style="list-style-type: none"> Light Hazard
	3	<ul style="list-style-type: none"> Less Hazard
	2	<ul style="list-style-type: none"> No Hazard

Source: The Climate Risk Assessment Guideline by Mercy Corps adapted from ICLEI-OCEANIA, 2008

Based on the analysis format above, the disaster hazard level profile at the study location is as follows:

Table 3.11 The results of the analysis of disaster hazard levels at the study location.

Hazard Level	Village			
	South Lembar	Cendi Manik	Central Sekotong	West Sekotong
1. Extreme Hazard	Tidal Floods	Floods	Tidal Floods	Tidal Floods
2. Hazard	High Waves, Abrasion	Tidal Floods	Floods, Droughts	Floods, Droughts
3. Lightly Hazard	Droughts	Strong Winds, High Waves	Strong Winds, Abrasion	Strong Winds, High Waves
4. Less Hazard	Landslide			
5. Not Hazard				

Source: Focus Group Discussion Results, 23-25 August 2023

Based on the table above, it is evident that prominent disasters falling under the extreme category include tidal floods, regular floods, and droughts. These three disasters are considered events that consistently worry the coastal area residents. The occurrences of these types of disasters happen periodically, within days, months, or years. Hence, when considering the likelihood scale, these disasters fall under the nearly certain parameter. In terms of consequences, they fall within the extreme and moderate categories.

b. Disaster Vulnerability Analysis

The vulnerability analysis below will present an exploration of the types of disasters and their impact on various aspects. This information is crucial in predicting the level of risk and losses that may arise due to these disasters. A more detailed analysis of the results is presented in the following Table 3.12.

Table 3.12 Disaster Vulnerability Analysis at Study Location

In-risk Asset	Vulnerability Form	Estimated Impact/Risk Value
1. Humans	• Death	<ul style="list-style-type: none"> As of now, there haven't been any fatalities due to tidal waves (rob). However, a flood disaster occurred in January 2020. It affected 1,820 households or 5,578 individuals in 13 hamlets in Sekotong District. Another tidal wave (rob) occurred in December 2021, affecting 3 hamlets, 431 households, and 1,742 individuals. In February 2023, a tidal wave occurred in South Lembar, impacting 450 households across 2 hamlets. On February 13, 2023, a flood disaster affected 5 hamlets, with 529 households impacted. Unfortunately, one child lost their life after being hit by debris during the flood (source: West Lombok Regional Disaster Management Agency).
	• Illness	<ul style="list-style-type: none"> Tidal wave (rob) occurrences often happen during the night, causing anxiety and disrupting daily activities. Eating patterns are disrupted, work schedules are affected, and schooling is disrupted. Additionally, environmental conditions are disturbed, particularly in terms of household cleanliness, yard maintenance, and access to clean water. These disturbances worsen if there's a power outage. Poor psychological conditions, coupled with irregular eating patterns, make the population more susceptible to illnesses, especially among the elderly and children. Based on interviews with respondents, some common illnesses that frequently appear due to tidal waves (rob) or floods include itchy skin, respiratory tract issues, and coughs/colds.

2. Economy	<ul style="list-style-type: none"> Loss of workdays for fishermen, farmers, service providers, and others 	<ul style="list-style-type: none"> During tidal wave (rob) occurrences, fishermen refrain from going to sea as they prioritize their families' safety. Consequently, they lose approximately 3-5 days per month or around 60 days per year without fishing. If their average net income per fishing trip ranges from Rp 30,000 to Rp 50,000, they lose an annual income of approximately Rp 1.8 to 3 million per person per year
		<ul style="list-style-type: none"> Although tidal waves (rob) frequently occur at night, according to respondents, it often affects their work motivation as farmers or their activities as service providers (construction workers, miners, etc.). If the average daily wage for a farmworker or construction laborer is Rp 70,000, farmers, construction workers, and artisanal miners could lose income of up to Rp 4.2 million per person per year.
	<ul style="list-style-type: none"> Losses in paddy fields and dryland/fallow fields 	<ul style="list-style-type: none"> Losses in paddy fields due to inundation by seawater result in a reduction of up to 50% in production. Each hectare of land is capable of producing an average of 2 tons per hectare, valued at Rp 6 million per hectare. Therefore, the potential loss per hectare is 6 million rupiahs per year for paddy fields and Rp 2.1 million per hectare for upland rice (planted in fallow land and gardens).
	<ul style="list-style-type: none"> Losses in salt ponds and milkfish ponds 	<ul style="list-style-type: none"> Losses in fishponds for milkfish and salt ponds: There are approximately 70 hectares of ponds across three villages, Lembar, Labuhan Tereng, and Cendi Manik. The pond sizes range from approximately 10 x 10 square meters to 20 x 20 square meters. The investment for each pond varies between 10 - 20 million rupiahs. During tidal waves (rob), production failure can reach 50 - 100%. When the ponds are inundated, the farmed fish can escape. Therefore, the loss due to tidal waves for pond farmers can reach Rp 5-10 million per year.
3. Social	<ul style="list-style-type: none"> Hindered participation, disruption of school activities 	<ul style="list-style-type: none"> The impact of tidal waves (rob) can minimize productive social activities, such as communal efforts to build mosques, mutual assistance during wedding or funeral processions, and childbirth. Residents are more preoccupied with cleaning their homes due to the entry of mud, debris, and other waste into houses and settlements. School activities for children can be disrupted because the effects of tidal waves may make it difficult for them to attend school.
4.Environmental	<ul style="list-style-type: none"> Clean water quality 	<ul style="list-style-type: none"> There is a disruption in accessing clean water for drinking, bathing, and washing due to water contamination with mud and debris.
	<ul style="list-style-type: none"> Poor sanitation and waste accumulation 	<ul style="list-style-type: none"> The disruption of access to clean water resources affects poor sanitation. Sanitation facilities (MCK - Mandi, Cuci, Kakus or Bathing, Washing, Toilet facilities) are disturbed due to waterlogging and the accumulation of carried debris.
	<ul style="list-style-type: none"> Disruption in the growth of mangrove seedlings 	<ul style="list-style-type: none"> Newly planted mangrove seedlings, if exposed to seawater inundation for more than 12 hours, may suffer from growth disturbances. The mortality rate of mangrove seedlings due to prolonged seawater inundation could reach 40-60%.

5. Infrastructure	<ul style="list-style-type: none"> • Damages to embankments and business premises 	<ul style="list-style-type: none"> • The dykes that were independently built by the community are now starting to deteriorate, especially those in Cendi Manik village. The damage to the dykes is caused by high waves, which have the potential to lead to coastal erosion.
	<ul style="list-style-type: none"> • Road and drainage damage 	<ul style="list-style-type: none"> • The damage to the facilities of businesses owned by the coastal residents, such as stalls for selling daily necessities and food, could be due to both tidal flooding and high waves. There are approximately 80 business stalls located in the coastal areas of South Lembar, Cendi Manik, and Lembar. • Due to tidal flooding and floods, both asphalt and paved roads have been damaged. Water has eroded certain road sections, leading to potholes and overall road degradation. An estimated length of 12 kilometers of roads has been affected by flooding and tidal damage. • The culverts, drainage ditches, and irrigation channels have also been affected by tidal flooding and floods. These events cause siltation, reducing their effectiveness in channeling water.

Source; Primary data from interview and FGD results, 2023.

3.7 Community Perception and Capacity in Facing Disasters

a. Community Perception on Disasters

The community's perspective on facing the disasters they have been experiencing varies significantly. This can be traced through several assessment aspects related to psychological, economic, social, and environmental factors.

From a psychological perspective, generally, they experience anxiety and discomfort when they become aware of signs or when facing disasters. Despite experiencing these events for a long time, their concern always revolves around the magnitude of the disaster they might encounter at that moment and the risks they will face. The anomalies in recent disasters make it increasingly difficult for them to predict. A small fraction, however, seems resigned to disasters, considering such events as predestined by a higher power.

From a social aspect, despite frequently experiencing disasters, the desire to stay in their original place is high. The existing social system among them acts as a strong cohesive force, keeping them attached to their environment. There are strong social values of mutual assistance within families, neighbors, and community groups, providing the affected population with good resilience to cope with their environment.

Economically, it appears that they have strategies to cope with financial shortages due to reduced income from disaster impact. The readiness of the population to engage in various jobs during economic difficulties is one factor enabling them to survive tough times. Additionally, there's a practice among community members of lending assistance to those facing financial difficulties.

Regarding the environment, they recognize changes that have occurred in their surroundings. More frequent occurrences of high tides, unpredictable large waves, and increased instances of flooding are observed. The known causes are attributed to climate change and the degradation of forest and land resources. Deforestation due to farming and illegal gold mining is perceived as the cause of flooding. Meanwhile, high tides and big waves are associated with climate change and the development of infrastructure (port facilities).

b. Community Capacity to Face Disasters

In dealing with disasters, especially tidal flooding (rob), the community has taken actions for both mitigation and adaptation. These community activities related to mitigation and adaptation are primarily conducted independently. Thus, the community inherently possesses sufficient capacity to respond to the disasters they face. The following is an overview of the mitigation and adaptation

measures and the social capital they employ in addressing these disasters.

Table 3.13. Mitigation, adaptation, and social capital

Construction of self-made flood embankments	In Cemara, the community has independently built a 2 km long embankment with a height of 0.5 meters.
Development of mangrove seedlings for source seedlings in mangrove rehabilitation and enrichment to reduce the rate of tidal flooding and high waves	In Cemara, Cendi Manik, and Central Sekotong, the community has the capability of seedling cultivation and has undertaken mangrove rehabilitation. The community's initiative to reduce disaster risk includes raising house foundations or constructing stilt houses
Construction of houses with higher foundations	The community's initiative to reduce disaster risk includes raising house foundations or building raised houses on stilts.
Community collaboration in building public infrastructure and social care.	Building embankments, places of worship, and mutual assistance when neighbors face difficulties.
The establishment of institutions supporting social resilience across economic, social, and disaster-related aspects.	Small business groups, groups for Fishermen, Farmers, and fishpond breeders, SIBAT (Community-Based Disaster Preparedness), Destana, and ecotourism-aware groups.
Support from policy regulations at the village level regarding disaster readiness formed by BPBD (Regional Disaster Management Agency) and village initiatives.	Village regulations regarding disasters, village support in providing infrastructure for mangrove tourism.
The community's self-preparedness in facing emergency situations during disasters	Responsive actions to immediately secure oneself during disasters.

Source: Primary data from interview and FGD results, 2023

IV. CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

- a. The socio-economic conditions of the coastal area's community can be described as follows: The community holds a strong social capital in terms of mutual assistance in resolving individual, household, kinship, group, and community issues. This positive social value is also crucial in the context of disasters for mitigation and adaptation measures to climate change. The livelihood sources of the coastal area's population are quite diverse. Prominent activities include fishing, farming, animal husbandry, aquaculture, small and medium enterprises, agricultural services, carpentry, and artisanal mining. Generally, the people engage in multiple occupations, such as fishermen also being farmers, farmers also rearing livestock, livestock keepers and miners, among others. Income from these varied sources ranges from Rp 8,700,000 to 15,600,000 per year. If associated with the per capita income, with an average family size of 4 members per household, the income range for farmers and fishermen is around Rp 5,958 to Rp 12,534 per capita per year.
- b. The various disasters frequently faced by the coastal communities in the six villages include tidal flooding (rob), floods, droughts, high waves, and coastal erosion. Tidal flooding occurs every month, lasting 3-5 days, with sea water entering residential areas at heights of 20-30 cm. However, the impact of tidal flooding becomes more severe if floods occur simultaneously 2-3 times a year. Tidal flooding affects approximately 1,729 households in the four villages.
- c. Based on the analysis of the disaster hazard level, tidal flooding falls into the category of extremely high or very hazardous, while floods and droughts are classified as hazardous. Additionally, strong winds/high waves and coastal erosion are categorized as somewhat hazardous. The community's perceptions in dealing with disasters are quite varied. From a psychological aspect, there is always anxiety regarding the dangers of tidal flooding or floods due to the unpredictability of their cycle and scale of impact.

4.2 Recommendations

- a. The Four study villages have diverse natural resources and distinct characteristics in terms of their social, economic, and community institutional aspects. Mangrove resources are present in South Lembar, Cendi Manik, Central Sekotong, and West Sekotong. However, prominent utilization of

mangroves is observed in South Lembar, Cendi Manik, Central Sekotong, and West Sekotong. Considering four aspects: the condition and value of mangroves, the level of tidal flooding impact, social capital, and the level of vulnerability to climate change-related disasters, the villages suitable for the project site are South Lembar, Cendi Manik, Central Sekotong, and West Sekotong.

- b. The discussions mentioned above still rely on quantitative values using estimated interview results, such as the area of fishponds, agricultural land, infrastructure size, and the number of affected people for mild, moderate, and severe scales. These aspects need further exploration and should be approached using specific methods, including the utilization of spatial data.
- c. The extent of the disaster's impact from various aspects-economic, social, environmental-in relation to the magnitude of the project's investment benefits needs a deeper analysis using the cost-benefit analysis tool.

Annex 5. Documentation of Stakeholder Consultation



The activity was carried out on Tuesday 27 December 2022 at the West Lombok Regency BAPPEDA Office. The activity involved 19 people (14 men and 5 women) from elements including West Lombok BAPPEDA, BPBD NTB, Provincial PU PR, DLHK, BMKG, NGOs, Lembar Sub-District Head, Village Government, Fishermen's Groups and Environmental Youth Leaders. This FGD activity aims to deepen information related to various events, periods of occurrence, social and environmental impacts, as well as adaptation and mitigation programs from existing *rob* disasters. Some of the points from the discussion results include:

- Head of Emergency and Logistics BPBD Lobar said several villages were affected by the tidal flood, including the villages of Lembar Selatan, Pelangan, Sekotong Tengah, Sekotong Barat, Buwun Mas, Lembar, Cendi Manik, Taman Ayu and Labuhan Tereng. It is estimated that there are 1,450 more people affected
- Rob floods in the West Lommбок district are frequent occurrences. The last time it happened was Friday 17 June 2022 in Lembar Village. Monitoring results from BPBD at least ± 207 households were affected by the Rob flood. in Buncit hamlet at least ± 70 families, Kebon Bongor hamlet as many as ± 97 families and Petak hamlet as many as ± 40 families.
- The impact of the Rob flood resulted in losses for residents in the form of inundating residents' homes, agricultural land and ponds owned by residents. West Lombok Regency BPBD has coordinated with the Provisional BPBD and other stakeholders for emergency management at the incident location.
- According to the BMKG Climatology Station Class I West Lombok, the Rob incident in West Lombok Regency was due to the La Nina phenomenon (extreme weather) in the form of strong winds and heavy rainfall. Rainfall in the NTB region on the third of September 2022 is dominated by the low category (<50 mm). The highest recorded rainfall occurred at Gunung Sari Rain Post, Kab. West Lombok of 154 mm/dasarian. The nature of rain on the third of September 2022 in the West Lombok Regency tends to vary from Below Normal (BN) to Above Normal (AN).
- Cemara Hamlet, Lembar Village is one of the areas that is prone to Rob disasters. Lastly, the water level can reach the knees of adults and lasts up to ± 2 hours. Residents who know that sea water is entering the settlement panic. However, residents remained in their homes.
- Tidal floods also occurred in several villages in Sekotong. Tagana Lobar said that there were three villages affected by the tidal flood. Among them, Madak Belek Hamlet 1, Empol Preparation Village, Kemanuk Hamlet, Buwun Mas Village, Pewaringan Hamlet, Pelangan Village.
- The South Lembar Village Government has not budgeted a special allocation of funds for handling Rob because the 2022 budget is still not optimal. Refocusing is still on handling Covid-19. We are still waiting for changes in budget allocations from the central government, so that in the future the budget for handling Rob can be implemented with the existence of a legal budget umbrella.
- However, in 2022 the government together with self-help communities, especially Cemara Hamlet, have made a talud/trap to prevent the rob from entering the settlement. However, the talud that was built is felt to be lacking because it has not covered several Robust entry points into residents' settlements. Through this forum we hope that there will be notes that can serve as recommendations to the relevant agencies to jointly develop the Village, especially in handling the

Rob disaster which often occurs in Lembar Selatan Village.

- When a Rob flood occurs, the sub-district and village governments immediately coordinate with BPBD Agency, Social Affairs and the Head of Maritime Office to evacuate residents affected by the disaster so that they can be dealt with immediately. So that the process of evacuating residents can be carried out.
- The government has also mediated with private parties close to the port area to jointly contribute to adaptation and handling of Rob floods. The mediation process is still ongoing, hopefully in the future there will be a green light.
- Adaptation activities have been carried out by several groups including: DLH West Lombok Regency, together with the South Lembar Village Government, BRI Bank and youth such as by planting 2,000 mangroves in the Cemara Beach tourist area and planting activities with the Indonesian Air Force in commemoration world mangroves day
- Careful planning is needed for the roadmap for the coastal area of the Cedar Hamlet so that tourism development and management plans can be integrated with disaster response development. Because this location is very vulnerable to the tidal water disaster. So that all stakeholders such as NGOs, Government, Entrepreneurs, Community Leaders, Youth Leaders and other elements to sit together to build Cedar Hamlet and West Lombok
- Whereas the 2023 Village Fund Budget (ADD) has not yet been determined, but there has been a commitment from village officials to oversee the disaster budget, both for improving the community's economy and the environment to be discussed in hamlet and village meetings as a priority program

Annex 6. Operational Definitions

Component	Outputs	Activities	Operational Definitions
Component 1. Village governance and institutional capacity	Output 1.1. Institutions, policy and planning at the village level that are responsive to climate change disaster impacts	1.1.1. Recruitment of village facilitators for climate-related disaster preparedness.	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: project management (Partnership, Transform, Konsepsti) - Objectives: announcement of recruitment of village facilitators for project implementation at village level
		1.1.1.a. Interview/Selection for Village Facilitators	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi manik and West Sekotong - Parties: project management (Partnership, Transform, Konsepsti) - Objectives: selecting suitable candidates to perform the role of village facilitators for village-level project implementation
		1.1.1.b. Mentoring and training on project framework for village facilitators	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Village facilitators, project management (Partnership, Transform, Konsepsti) - Objectives: increase knowledge through training and guidance related to project scope for village facilitators
		1.1.1.c. Contracting and assignment of village facilitators	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Village facilitators, project management - Objectives: existence of an employment contract for village facilitators
		1.1.2. Participatory climate risk analysis (PCRA) by community to identify and assess aspects related to hazard characteristics, existing capacities, vulnerabilities, risk mapping, as well as risk level assessment	<ul style="list-style-type: none"> - Scope: West Lombok Regency Level, Village Level (Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong) - Parties: Village facilitators, PCRA experts, risk mapping experts, project management - Objectives: Preparation of assessment report related to hazard characteristics, existing capacities, vulnerabilities, risk mapping, as well as risk level assessment
		1.1.3. Establishment of a village climate disaster preparedness work team from village volunteer members and added with other community components.	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi manik and West Sekotong - Parties: Farmer groups, fishermen, village governments, village facilitators, project management - Objectives: Establishment of village-level climate disaster preparedness work
		1.1.4. Training packages for village government and village climate disaster preparedness work team;	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi manik and West Sekotong - Parties: Members of the village disaster preparedness work team (SK village disaster preparedness team), village facilitators, project management - Objectives: Increased knowledge of village government and village disaster preparedness work team.

Component	Outputs	Activities	Operational Definitions
		1.1.5. Formulation of local policies on climate resilience (both at village and district levels)	<ul style="list-style-type: none"> - Scope: West Lombok Regency Level, Village Level (Central Sekotong Village, South Lembar, Cendi manik and West Sekotong) - Parties: West Lombok District Government, Village Government, Village Facilitator, Project Management - Objectives: formulate policies on climate resilience at the village and district levels
		1.1.6. Facilitation for formulating climate disaster-related guidelines/plans/standards (contingency plan, early warning system);	<ul style="list-style-type: none"> - Scope: Village Level (Central Sekotong Village, South Lembar, Cendi manik and West Sekotong) - Parties: Village Government, Village Facilitator, Project Management - Objectives: Preparation of guidelines/plans/standards related to climate disasters including contingency plans and early warning systems.
		1.1.7. Formulation of policy brief/policy paper to strengthen climate resilience actions or policies at sub-national level	<ul style="list-style-type: none"> - Scope: West Lombok Regency - Parties: West Lombok District Government, Experts, Project Management - Objectives: Prepare a policy brief/policy paper to strengthen climate resilience actions or policies at the local level
		1.1.8. Technical assistance on policy making and governance process at subnational level to support climate adaptation measures at village level (including strengthening knowledge management systems)	<ul style="list-style-type: none"> - Scope: West Lombok Regency - Parties: West Lombok District Government, Experts, Project Management - Objectives: Prepare a policy brief/policy paper to strengthen climate resilience actions or policies at the local level
	Output 1.2. Village community action plan on climate-related disaster risk reduction in coastal areas	1.2.1. Dissemination of PCRA's results to the wider community through presentation of work team representative in workshop for each village	<ul style="list-style-type: none"> - Scope: West Lombok Regency Level, Village Level (Central Sekotong Village, South Lembar, Cendi manik and West Sekotong) - Parties: Village disaster preparedness work team, Village facilitators, PCRA experts, risk mapping experts, project management - Objectives: Dissemination of project assessment related to hazard characteristics, existing capacities, vulnerabilities, risk mapping, as well as risk level assessment.
		1.2.2. Community Action Planning (CAP) on climate resilience through community discussion series and field workshop. Formulation of CAP also consider input and comments in previous workshop regarding PCRA' results	<ul style="list-style-type: none"> - Scope: Village Level (Central Sekotong Village, South Lembar, Cendi manik and West Sekotong) - Parties: Village disaster preparedness work team, Village facilitators, PCRA experts, risk mapping experts, project management - Objectives: Develop community-based climate resilience action plans at the village level

Component	Outputs	Activities	Operational Definitions
		1.2.3. Facilitation on integration Community Action Plan (CAP) with the village government's annual plan and budget through discussion series with village government;	<ul style="list-style-type: none"> - Scope: Village Level (Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong) - Parties: Village disaster preparedness work team, village facilitators, PCRA experts, risk mapping experts, project management - Objectives: Integrate community-based climate resilience action plans with village government annual plans and budgets (RKP)
		1.2.4. Facilitation of annual village development planning forum to decide on village development priority programs in the current year including CAP on climate-induced disaster resilience	<ul style="list-style-type: none"> - Scope: Village Level (Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong) - Parties: Village disaster preparedness work team, Village facilitators, PCRA experts, risk mapping experts, project management - Objectives: Develop priority village development programs included in climate resilience action plans in village development planning.
		1.2.5. Advocacy of CAP to sub-national government policies both at district and provincial levels through lobbying and discussion series by inviting sub-national government representatives both district and provincial levels.	<ul style="list-style-type: none"> - Scope: West Lombok Regency, West Nusa Tenggara provincial level - Parties: West Lombok District Government, NTB Provincial Government, Experts, Project Management - Objectives: Advocating local government policies both Caupatent and Province related to climate resilience action plans.
Component 2. Capacity Building on Climate Adaptation	Output 2.1. Increased knowledge and skill of the targeted communities, including women and vulnerable groups on climate adaptation actions	2.1.1. Trainings for targeted community on climate adaptation and resilience.	<ul style="list-style-type: none"> - Scope: Village Level (Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong) - Parties: Village disaster preparedness work team, village apparatus, sub-district government representatives, community groups, village facilitators, project management - Objectives: Increase community knowledge through training and skills in climate adaptation and resilience
		2.1.2. Conducting climate field school on adaptation actions on coastal areas conditions (mangrove, land-based farming in coastal, salt farming); in-class for 6 times in each targeted community, and and preparing demonstration plots for climate adaptation (field practices).	<ul style="list-style-type: none"> - Scope: Village Level (Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong) - Parties: Village disaster preparedness work team, village apparatus, sub-district government representatives, community groups, village facilitators, project management. - Objectives: Increase knowledge of community groups through field schools for mitigation actions accompanied by preparing demonstration pilot activities (field practices)
		2.1.3. Conducting simulation/exercise to respond to climate induced disaster by testing the contingency plans and early warning system	<ul style="list-style-type: none"> - Scope: Village Level (Central Sekotong Village, South Lembar, Cendi manik and West Sekotong) - Parties: Village disaster preparedness work team, village apparatus, sub-district government representatives, community groups, village facilitators, project management - Objectives: Community groups have the ability to respond to climate-induced disasters using contingency planning

Component	Outputs	Activities	Operational Definitions
			instruments and early warning systems.
		2.1.4. Developing and implementing a learning platform and process for communities related to climate adaptation actions through regular learning forums in each village and cross visits to other areas;	<ul style="list-style-type: none"> - Scope: Village Level (Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong) - Parties: Village disaster preparedness work team, village apparatus, sub-district government representatives, community groups, village facilitators, project management - Objectives: The existence of regular learning forums and mutual learning between villages for the learning process of climate adaptation actions
		2.1.5. Procurement of climate-induced disaster information and documentation systems:	<ul style="list-style-type: none"> - Scope: 1 information system covering the villages of Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Village disaster preparedness work team, village apparatus, sub-district government representatives, community groups, village facilitators, project management - Objectives: Creation of information systems and documentation of climate-related disasters
		2.1.6. Documenting knowledge and best practices of community actions in climate change by producing Stories of Change (SoC) from targeted groups, videos, and book.	<ul style="list-style-type: none"> - Scope: 1 information system covering the villages of Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Village disaster preparedness work team, village apparatus, sub-district government representatives, community groups, village facilitators, project management - Objectives: The existence of videos and books documenting knowledge and best practices of community action
	Output 2.2. Models of coastal climate adaptation are developed and demonstrated at the targeted community	2.2.1. Conducting analyses and model development on climate adaptation in coastal areas to identify, analyze, and design of model by hiring the expert team with taking into account PCRA's results and CAP.	<ul style="list-style-type: none"> - Scope: 1 information system covering the villages of Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Village disaster preparedness work team, community groups, village facilitators, project management - Objectives: Availability of climate adaptation model design based on PCRA dan Climate action plan
		2.2.2. Procurement of climate-induced adaptation facilities/equipment: construction of fishpond, fish seed, stationaries (silvofishery in mangrove);	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Village facilitators, project management - Objectives: Construction of climate adaptation facilities
		2.2.3. Demonstration of climate adaptation models of coastal climate adaptation at least 3 models i.e. silvofishery in the mangrove, climate-smart land-based farming in the coastal, and ecotourism services.	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Community groups, village facilitators, project management - Objectives: The existence of climate adaptation models in coastal areas in the form of demonstration plots

Component	Outputs	Activities	Operational Definitions
		2.2.4. Documentation best practices and lesson learned from climate adaptation models in coastal area by producing practical guidebook and videos.	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Expert tim, project management - Objectives: Practical guidebooks/videos for best practice documentation and learning of climate adaptation models in coastal areas
	Output 3.1. Rehabilitation and enhancement of coastal ecosystems to adapt to climate impacts at selected sites are demonstrated	3.1.1. Participatory coastal area spatial plan integrated with climate-induced disaster resilience.	<ul style="list-style-type: none"> - Scope: West Lombok Regency, West Nusa Tenggara provincial level - Parties: West Lombok District Government, NTB Provincial Government, Experts, Project Management - Objectives: Advocating local government policy plans (districts and provinces) for climate resilience action plans
		3.1.2. Facilitation on development of community-based nurseries for mangrove rehabilitation	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Community groups, village facilitators, project management - Objectives: availability of community-based nurseries for mangrove rehabilitation activities
		3.1.3. Mangrove planting in 20-hectare areas at selected sites;	<ul style="list-style-type: none"> - Scope: South Lembar, Cendi Manik - Parties: Community groups, village facilitators, project management - Objectives: mangrove rehabilitation on an area of 20 ha.
		3.1.4. Facilitation in providing infrastructure packages for climate-disaster risk reduction in mangrove areas; infrastructures: rob-resistant embankments and rob-resistant houses;	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Community groups, village facilitators, project management - Objectives: Availability of climate risk reduction infrastructure in mangrove areas, dikes and tidal-resistant houses.
		3.1.5. Monitoring and evaluation for mangrove rehabilitation	<ul style="list-style-type: none"> - Scope: South Lembar, Cendi Manik - Parties: Community groups, village facilitators, project management - Objectives: Mangrove rehabilitation on an area of 20 ha.
			3.2.1. Value chain analyses to develop the potential supply chain for smallholder fisheries and coastal community livelihood
Component 3. Coastal ecosystem resilience and Sustainable Livelihood	Output 3.2. Community income-generating and productive economic activities are increased	3.2.2. Identification of business opportunities and product development through study use mixed method (both participatory/qualitative and survey/quantitative technique);	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Community groups, village facilitators, project management - Objectives: Availability of business opportunity identification and product development documents
		3.2.3. Facilitation of training packages	<ul style="list-style-type: none"> - Scope: Central Sekotong Village, South Lembar, Cendi

Component	Outputs	Activities	Operational Definitions
		for sustainable smallholder fisheries and livelihood: good practices on fisheries cultivation; diversification of products/processing; marketing.	Manik and West Sekotong - Parties: Community groups, village facilitators, project management - Objectives: Implementation of training for community livelihood development (aquaculture, product diversification, marketing)
		3.2.4. Facilitation small-scale business licensing and product certification	- Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Community groups, village facilitators, project management - Objectives: The group has small-scale business licensing and product certification
		3.2.5. Procurement of equipment for productive economies and businesses i.e production machines, packaging machines, etc;	- Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Community groups, village facilitators, project management - Objectives: Equipment assistance for a productive economy for groups that already have business licenses
		3.2.6. Technical assistance for developing market-demand commodities and products	- Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Community groups, village facilitators, project management - Objectives: The project assists target groups for commodity development and product marketing both on a local and regional scale
		3.2.7. Facilitation on access to finance (including venture capital) to support communities' businesses by developing network or collaboration with banks or private sectors.	- Scope: Central Sekotong Village, South Lembar, Cendi Manik and West Sekotong - Parties: Community groups, village facilitators, project management - Objectives: Facilitate and promote access to financing and cooperation with private sectors/banks/financial institutions to support communities group enterprises

Annex 7. Core outcome indicator from the Fund's results framework

Expected Result	Indicators
Outcome 3. Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses
	3.2. Percentage of targeted population applying appropriate adaptation responses
Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1. No. and type of risk reduction actions or strategies introduced at local level

3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses		
	Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	Percentage of targeted population applying appropriate adaptation responses
Baseline	5 %	-
Target (by Mid term)	50%	50 %
Target (by end of project)	90%	90 %

Definition :

- Total population based on age group over 17 years in four villages : **8.689** person (Total population in Four Villages are **34.756** person)

3.1.1. No. and type of risk reduction actions or strategies introduced at local level		
	Number of actions strategies	Type
Baseline	-	
Target (by end of project)	100%	
Expected Result	Indicators	
Outcome 4 Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	

Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)
	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)

4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)			
	Number of Assets	Type of Assets	Project Intervention
Baseline	1	Talud (Sea Wall/Embankment)	Already constructed
Target (by end of project)	1		Strengthened; Repair damaged sea wall points (\pm 2.350 meters)
Expected Result		Indicators	
Outcome 5 Increased ecosystem resilience in response to climate change and variability induced stress		6. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	
Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability		5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	

5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)			
	Number (Ha)	Type of Natural Asset	Intervention
Baseline	-	Mangrove Ecosystems	Rehabilitation of \pm 20 hectares of mangrove ecosystems, Monitoring, Maintenance and preservation of mangrove areas)
Target (by mid of project)	10		
Target (by end of project)	20		

Note : types of beneficiary in 4 villages (South Lembar, Central Sekotong, Cendi Manik, West Sekotong)

Adaptation Fund Core Impact Indicator "Number of Beneficiaries"					
Beneficiaries	Baseline	Target at Project Approval (absolute number)	Adjusted target first year of Implementation	Target by Mid –end of Project	Actual at completion
Direct beneficiaries supported by the project					
Farmer*	4.635	518	233	284	518
Fisherman/women*	1.661	605	272	333	605
Cattlemen*	1.066	172	78	95	172
Trader*	1.816	434	196	238	434
Indirect beneficiaries supported by the project					
Farmer	4.121	-	-	-	-
Fisherman/women	1.056	-	-	-	-
Cattlemen	894	-	-	-	-
Trader	1.385	-	-	-	-