ADAPTATION FUND

DATE OF RECEIPT:

ADAPTATION FUND PROJECT/PROGRAMME ID:

PROJECT PROPOSAL

PART I: PROJECT INFORMATION

Project Category:	**Regular**
Country:	**Indonesia**
Title of Project:	**Adapting to Climate Change for Improved Food Security in West Nusa Tenggara Province**
Type of Implementing Entity:	**Multilateral Implementing Agency**
Implementing Entity:	**World Food Programme**
Executing Entity:	**National Food Security Agency (*Badan Ketahanan Pangan*/ BKP)**
Amount of Financing Requested:	**US$ $ 5,995,666 (over 4 years)**

PROJECT BACKGROUND AND CONTEXT:

West Nusa Tenggara (Nusa Tenggara Barat - NTB) is one of the poorest provinces in Indonesia, with 18.63% of households considered very poor (BPS, 2012). NTB's Human Development Index (HDI) (2012) ranks 32 out of 33 provinces in Indonesia. Indonesia's HDI as a whole is that of a middle-income country, while NTB's (at 64.66%) is that of a least developed country. NTB is also a priority on the national development agenda (Master Plan of Acceleration of Indonesian Economic Development, or MP3EI), focused on food security and tourism.

Livelihoods in NTB are overwhelmingly dependent on agriculture. More than 90% of household income in the province is derived from agriculture, the majority of which is rain-fed and low technology. The ratio between rain-fed and irrigated areas is 2.5 to 1 (Crop and Horticultural Division of NTB Agriculture Office, 2012), but approximately 60% of the irrigation facilities are damaged (NTB Public Works Office, 2012). As a result, climate variability and extreme climatic events such as floods and droughts have a significant impact on agricultural production and food security.

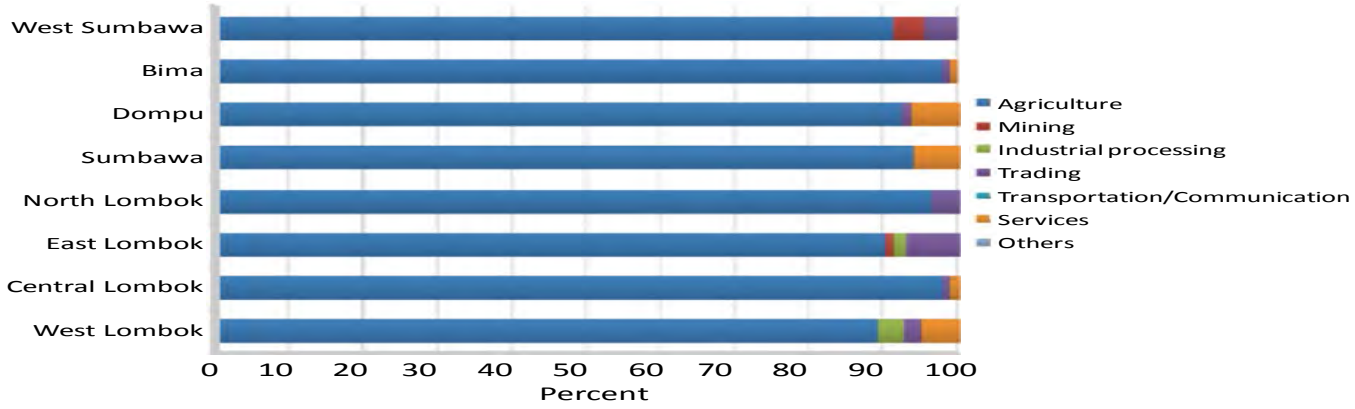


Figure 1. Source of income by sector in West Nusa Tenggara (NTB Provincial Government, 2011)

Climate variability in NTB, like other Indonesian regions with monsoonal rainfall, is influenced to a significant degree by the El Niño and Southern Oscillation (ENSO; Figure 2). El Niño conditions correspondingly result in a delayed onset of the rainy season, longer dry spells and less rainfall, while La Niña conditions correspond to excessive rainfall (Boer and Subbiah, 2005; ADB and Bappenas, 1999 and Quinn et al., 1978).

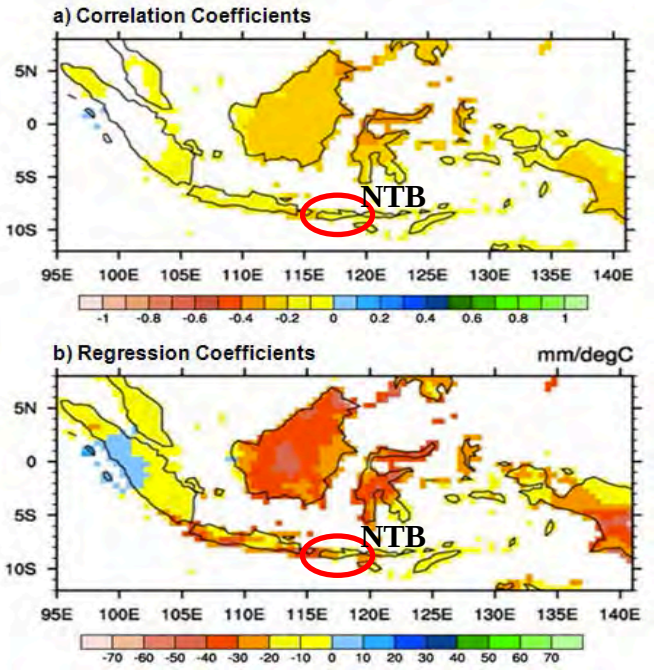


Figure2. ENSO impact on rainfall variability in Indonesia represented by significant a) correlations coefficients, and b) regression coefficients between rainfall and sea surface temperature anomaly in Niño-3.4 region (Source: National Action Plan on Climate Change Adaptation, 2012)

Some scientists (e.g. Timmerman *et al.,* 1999) affirm that an increase in greenhouse gases will result in "more frequent El Niño-like conditions and stronger cold events (la Niña)". Recent analysis from NOAA (2007) shows that the majority of the 10 strongest El Niño events of this century occurred after the 1970s. As a result, the extreme regional weather and climate anomalies associated with El Niño may be exacerbated by increasingly higher temperatures (Hansen *et al.* 2006).

Indonesia's Second National Communication identifies NTB as priority province for climate change adaptation because of the high risks from climate change faced by the province. Crop failure due to extreme climate events may become more frequent. The frequency of massive drought in the country increased over the last 40 years compared to the previous decade - from once in three to

four years to once in two to three years (Boer and Subbiah, 2005). Similar observations have been made for floods. Historical data from 1989-2008 shows that rice crop failures due to drought increase significantly during El Niño years, particularly in Central Lombok district, while floods commonly occur in Sumbawa and Bima districts (Figure 3 and 4).

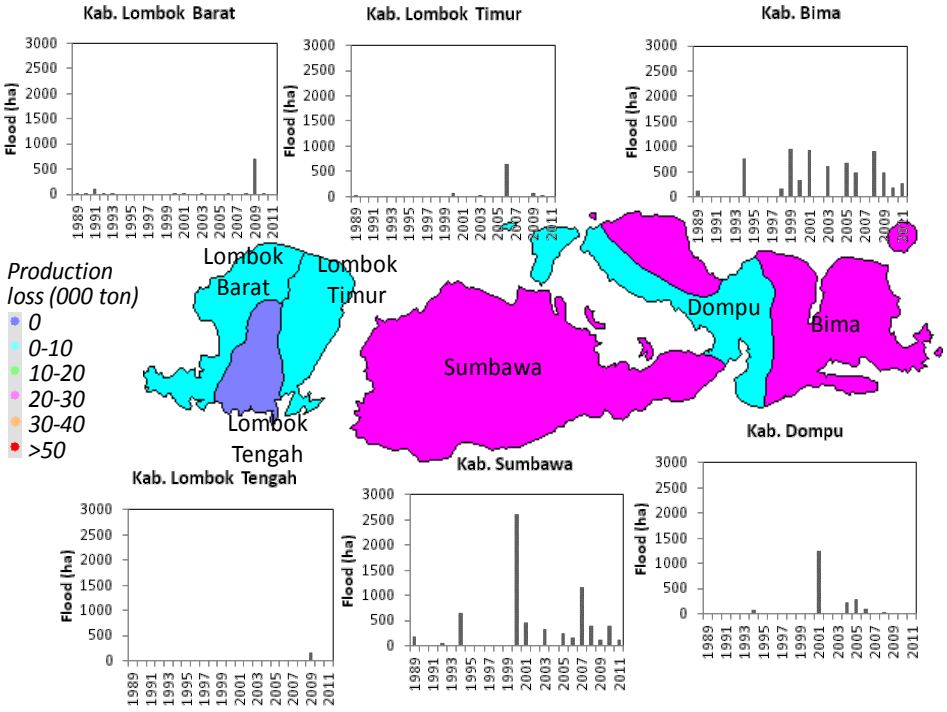


Figure 3. Cumulative affected area and estimated production loss due to floods in NTB from 1989-2008 (based on data from Directorate of Plant Protection, Ministry of Agriculture)

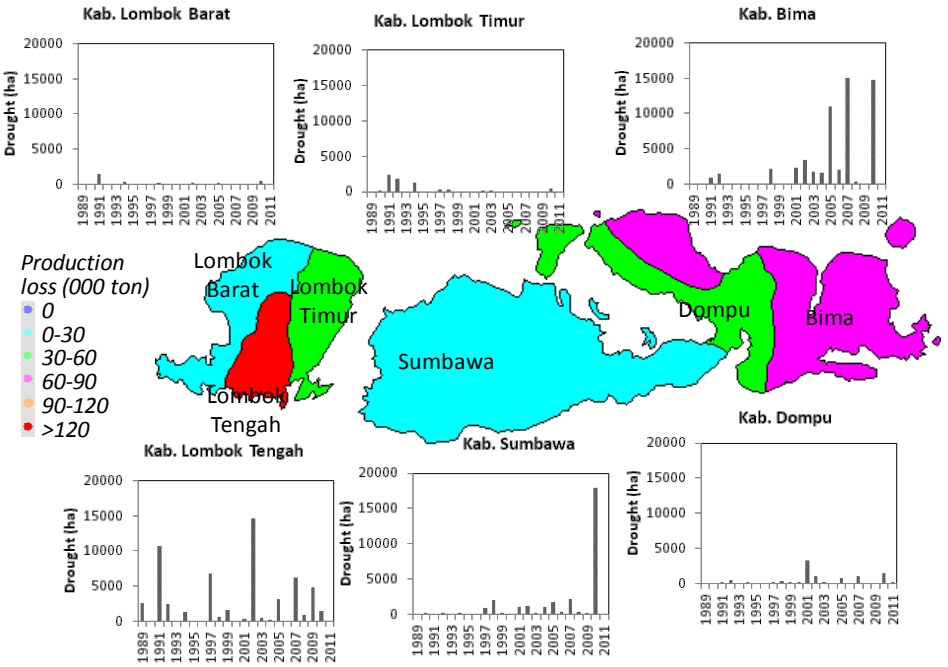


Figure 4. Cumulative affected area and estimated production loss due to drought in NTB from 1989-2008 (based on data from Directorate of Plant Protection, Ministry of Agriculture)

A trend of increasing mean temperature has already been observed in Indonesia. In the period between 1965 and 2009, the rate of mean temperature increase was about 0.016^{0}C per year (Figure 5). In NTB, in the period of between 1972 and 2010, the mean temperature has increased by about 0.5^{0}C (Figure 6). The US Global Change Research Program (USGCRP, 2009) reported that a moderate increase in temperature would decrease the yields of rice, maize, wheat, sorghum, bean, cotton and peanuts.

Furthermore, the Indonesia Climate Change Sectoral Roadmap (2009) released by Bappenas (the National Development Planning Agency) reported that climate change will likely decrease rice paddy yield by 20.3 to 27.1%, maize yield by 13.6%, soybean yield by 12.4%, and sugarcane yield by 7.6%. Pollination and grain-set processes begin to fail if crops are frequently exposed to high temperature thresholds. Higher temperatures also increase crop respiration rates and reduce carbon capture.

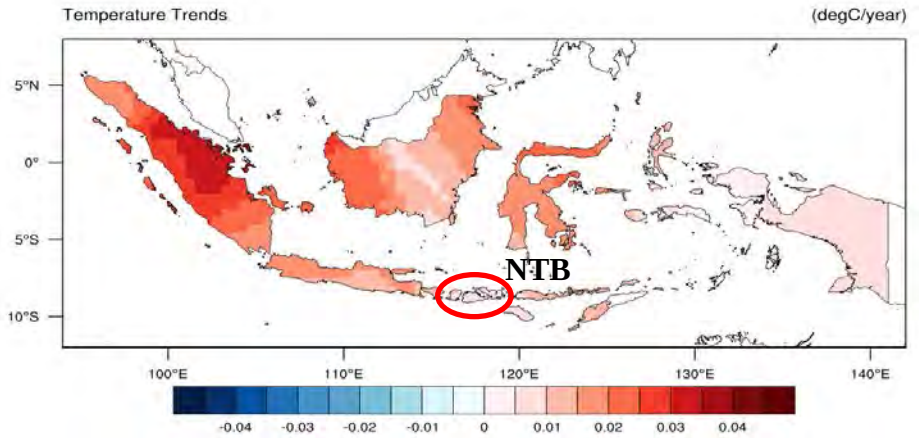


Figure 5. Trend of mean temperature increase in Indonesia during the period of 1965 – 2009 (CRU, 2008)

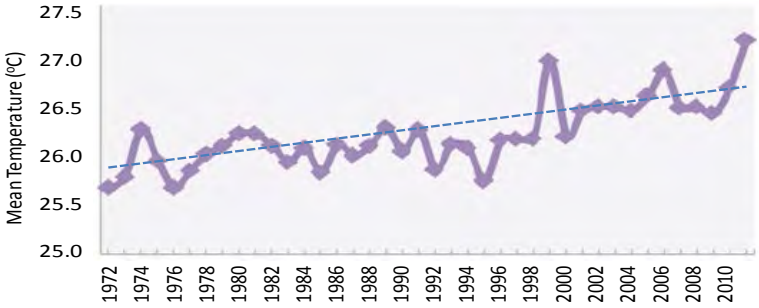


Figure 6. Trend of mean temperature increase during the period of 1972-2010 in NTB (Data from Bureau of Meteorology, Climatology and Geophysics)

Rainfall patterns in NTB have changed. A trend analysis of 355 rainfall stations[1] from all over Indonesia shows that wet season rainfall (December-February) has increased, while rainfall in other seasons, particularly March to May and September to October has decreased in most regions of NTB (Ministry of Environment, 2011). These changes partly explain why NTB is experiencing increasing flood risk, particularly in Bima and Sumbawa (see Figure 3), while simultaneously experiencing increased drought in dry years, particularly in Lombok Tengah (see Figure 4).

[1] The length of these records is between 20 and 50 years, with most of the records started after the 1950s.

A number of studies show that the El-Niño phenomenon has become more intense and its frequency relative to La Niña has increased since the 1970's (Latief and Keenlyside, 2009; Hansen et al., 2006)[2]. Therefore, it is likely that delayed starts to the agricultural season will continue. At the same time, this will increase the potential for greater incidence and intensity of cyclones (high rainfall and strong winds).

Based on an analysis of 28 General Circulation Models (GCMs) under different scenarios of Representative Concentration Pathways (RCP) from the CMIP5 database, rainfall in NTB is projected to increase in the rainy season (December to February) and decrease in the dry season (June to August) by 2025 and 2050. As a result, water supply for agriculture in Lombok Island is projected to decrease by about 28%, according to a study conducted by Ministry of Environment, GIZ, WWF and Provincial Government of West Nusa Tenggara (2010a)[3]. The change will be exacerbated by poor irrigation facilities.

NTB is also vulnerable to sea level rise, as the province consists of several small islands. A rise in sea level will reduce available arable land, increasing flood risks and increasing salinization/salt intrusion (Nicholls and Mimura, 1998). The Ministry of Environment and GIZ study projected that sea levels on the Northern coast of Lombok, the biggest island in NTB, could increase by about 35 to 40 cm by 2100 relative to the 2000 baseline[4]. As rice, the staple crop in the province, ranks among the most sensitive crops to salinity, especially in its reproductive phase, these changes will have a direct impact on agricultural production and livelihoods in the province (Maas and Grattan 1999).

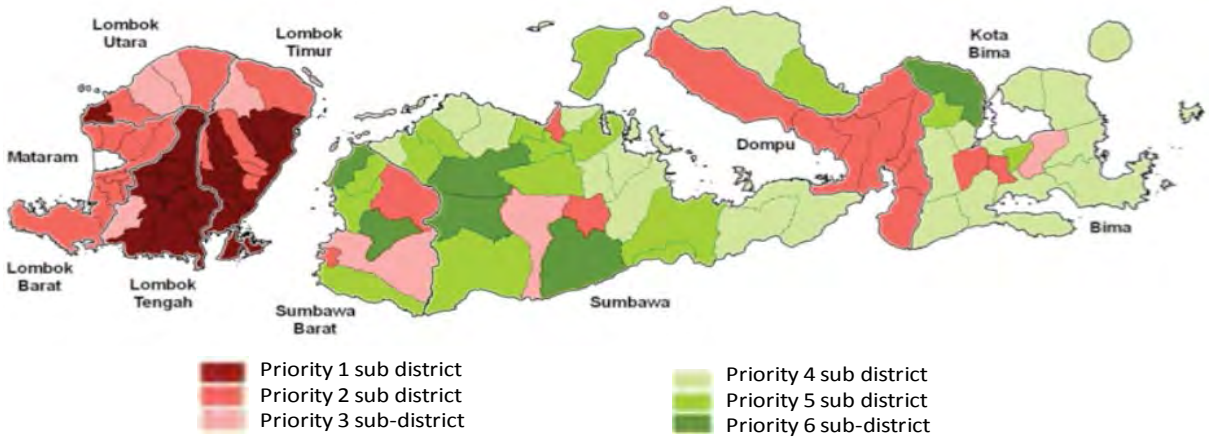


Figure 7. Food Security Vulnerability of sub-districts in 2010. Sub-districts with priority 1 are the most vulnerable (WFP and Food Security Agency NTB, 2010) [5]

[2] Latif M, Keenlyside NS (2009) El Niño/Southern Oscillation response to global warming PNAS December 8, 2009 vol. 106 no. 49 20578-20583

[3] Ministry of Environment, GIZ, WWF, and Provincial Government of NTB, 2011. Study on risk and adaptation to climate change in Lombok Island, West Nusa Tenggara Province: Water Resources. Project Report, Ministry of Environment, Republic of Indonesia, Jakarta

[4] Ministry of Environment, GIZ, WWF, and Provincial Government of NTB, 2011. Study on risk and adaptation to climate change in Lombok Island, West Nusa Tenggara Province: Sea Level Rise projection and Extreme Climate. Project Report, Ministry of Environment, Republic of Indonesia, Jakarta

[5] WFP, Food Security Agency and NTB Provincial Government, 2010. Food Security and Vulnerability Atlas of West Nusa Tenggara. World Food Programme, Jakarta.

As a result of the impact of climate change on agriculture, livelihoods and food security will also be impacted. This poses an urgent problem because food insecurity is already a significant challenge for the province. At present, 64 out of 105 sub-districts in NTB are considered vulnerable to food insecurity. Twenty six sub-districts are classified as Priority 1 level (the most vulnerable) with 14 of these in Lombok Timur and 11 of these in Lombok Tengah (Figure 7).

The main determinants of vulnerability to food insecurity in these areas are high rates of poverty, high rates of malnutrition among children under-five (especially stunting), low life expectancy, high female illiteracy and limited access to clean water, electricity and roads.

Without efforts to increase the adaptive capacity of food insecure communities in NTB to climate variability and climate change, these communities will have little ability to cope with more frequent crop failures and production losses. Repeated crop failure would not only decrease farmer income, but also reduce food supply in the area, resulting in possible food scarcity and increasing food prices. In response to decreased income and food price increases, evidence from many countries shows that food insecure populations tend to cope by reducing dietary diversity, often with very negative health and nutrition implications for vulnerable groups such as pregnant and lactating women and young children.

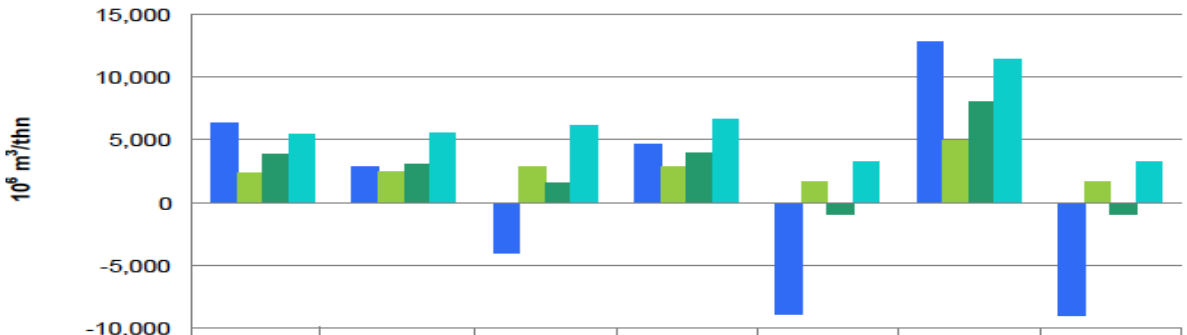
Within NTB, Lombok Island is considered the most vulnerable area (Figure 7). Lombok Island is divided into four main watershed areas. A survey from 2006 by the Central Bureau of Statistics reported that a high number of poor households in Lombok Island are within the Dodokan watershed area, the largest watershed in Lombok Island (Figure 8). Poor households in this area are estimated to account for 50% to 69% of the population (Central Bureau of Statistics, 2006). There are three other watersheds in Lombok Island namely Jelateng, Menanga, and Putih (Figure 8). Despite its important role as the largest watershed supporting agriculture and human needs in Lombok Island, Dodokan is highly vulnerable to flood, drought and food insecurity in both current and future climate conditions.

Figure 8. Lombok Island consists of 4 main watersheds: Dodokan, Jelateng, Menanga and Putih

Due to the increasing population, high poverty rates and the lack of alternative livelihoods, the Dodokan watershed is also exposed to deforestation, mostly in the upper watershed area. In the period between 1995 and 2010, about 17% of forest in Dodokan was converted to plantation agriculture (Suhartanto *et al.*, 2012[6]), resulting in increased soil erosion and sedimentation. The highest rate of deforestation has occurred during the reform era of 1998 to 1999, when economic crises hit Indonesia, causing political instability and resulting in illegal exploitation of natural resources.

After 2000, the rate of deforestation decreased, as political and economic stability returned. However, the damage has not been reversed. It is estimated that in 2009 about 38% of areas in this watershed were in critical to very critical condition[7]. As a result the national government has targeted the Dodokan watershed as a priority for rehabilitation in NTB under the National Midterm Development Plan (2010-2014).

In Lombok Island, at least 20 rivers flood during the wet season. Five are categorized as prone to heavy flooding and another five are categorized as prone to flash flooding (Watershed Management Agency, 2010). During the dry season, however, there is water scarcity with an increasing number of waterless rivers, canals and ponds. According to the Ministry of Environment and GIZ[8], under three different climate change scenarios (SRES B1, A1B and A2), assuming no change in land use from current conditions, these watersheds, and Dodokan in particular, will face serious water deficits. The water deficit in Dodokan is projected to be more than 8,000.10^6 m^3/ year by 2080 (Figure 9). Figure 10 depicts the projection of declining water supply in the Dodokan watershed, largely due to climate change.



	1961-2007	SRB1 2030	SRB1 2080	SRA1B 2030	SRA1B 2080	SRA2 2030	SRA2 2080
Dodokan	6,269.10	2,859.75	-4,022.81	4,619.40	-8,877.14	12,757.38	-8,990.27
Jelateng	2,327.48	2,446.93	2,837.63	2,882.71	1,635.42	4,898.14	1,607.40
Menanga	3,883.46	3,063.60	1,545.72	3,942.99	-880.25	8,009.98	-936.79
Putih	5,409.79	5,539.38	6,133.51	6,578.50	3,266.89	11,384.20	3,200.09

Figure 9. Current water balance of the watersheds in Lombok Island and its projection in 2030 and 2080 based on climate change scenario IPCC SRES B1, A1B and A2 (Ministry of Environment, GIZ, WWF, and Provincial Government of NTB, 2010a).

[6] Suhartanto, E., D. Priyantoro and Itratip. 2012. Studi penilaian kondisi das dan implikasinya terhadap fluktuasi debit sungai: studi kasus pada sub das jangkok pulau Lombok. Jurnal Teknik Pengairan, *3: 1-5*

[7] http://www.dephut.go.id/index.php?q=id/node/4499

[8] Ministry of Environment, GIZ, WWF, and Provincial Government of NTB, 2011. Study on risk and adaptation to climate change in Lombok Island, West Nusa Tenggara Province: Water Resources. Project Report, Ministry of Environment, Republic of Indonesia, Jakarta

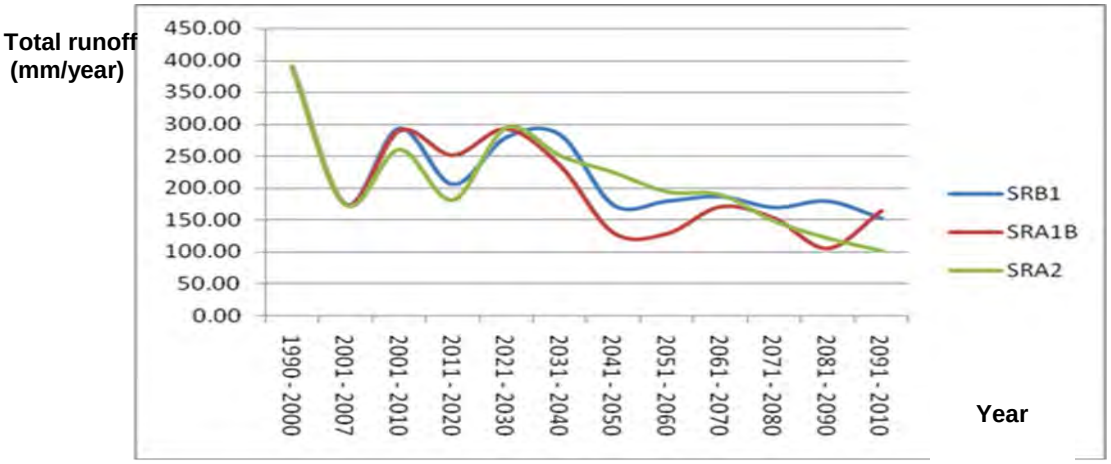


Figure 10. Projection of declining water supply in Dodokan under 3 climate scenarios (Ministry of Environment, GIZ, WWF, and Provincial Government of NTB, 2010a)

A study conducted by WFP-AusAID-CSIRO Alliance, University of Mataram, and Government of NTB Province (2011), projects that climate change will increase the vulnerability of communities in NTB, particularly on Lombok Island, most especially in the Dodokan watershed area of Central Lombok District. This study identifies those people whose livelihoods rely on agriculture and fishing as the most vulnerable in the areas (Figure 11).

A Ministry of Environment and GIZ study also found that agriculture in the Dodokan watershed is likely to be exposed to more severe and frequent floods, drought and strong winds. According to this study, the risks of harvest failure due to the extreme climate events are particularly high in the downstream areas of the Dodokan watershed (Figure 12).

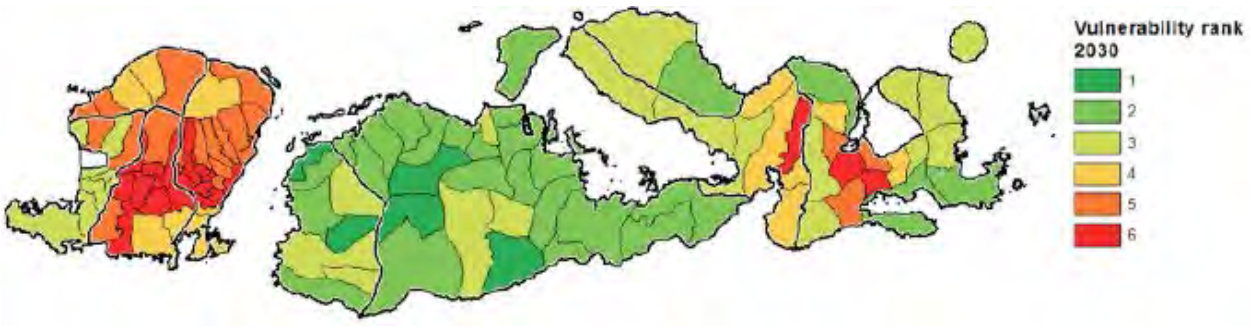


Figure 11. Projection of NTB climate change impact to food security at sub-district level in 2030. Level 6 is the most vulnerable. Source: WFP, AUSAID, CSIRO Alliance, University of Mataram and NTB Provincial Government (2011)

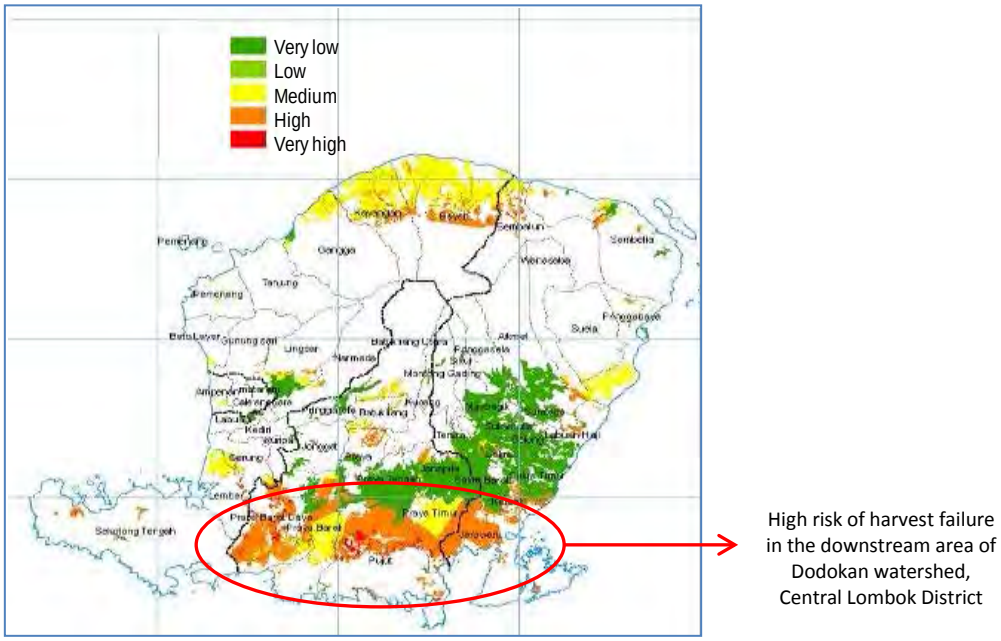


Figure 12. Level of Risk of harvest failure due to extreme climate events in Lombok Island, NTB (Ministry of Environment, GIZ, WWF, and Provincial Government of NTB, 2010c)

A WFP and Government of Indonesia Food Security Analysis show that poverty and food insecurity is highest among rainfall dependent farmers who have no access to irrigation. In the Dodokan watershed, many upland farming areas do not have access to irrigation. These upland areas are highly exposed to natural hazards such as drought, floods and landslides. Farmers in rain-fed agricultural systems in Dodokan are poorer than farmers with access to irrigation. These farmers have low productivity and produce crops that do not have high market value. Livelihood insecurity is high during the lean season from June to August and from November to February. During these periods, poor farmers become laborers and often migrate out of their villages in search of employment. In these areas, climate change is amplifying the impact of climate variability and climate shocks on already vulnerable populations.

To address the food insecurity issue, the Government of Indonesia/ GoI through Food Security Agency (BKP) has implemented Food Resilient Village (*Desa Mandiri Pangan*/ DEMAPAN) National Program with aims to develop productive activities to increase food availability, to improve purchasing power of rural communities and to increase food access of households. The program, which has been implemented since 2006, focuses on the most food vulnerable villages as the target area. Up to 2012, there were 3,414 villages in 410 districts with a total of more than 369,750 poor households selected as the location of DEMAPAN. NTB itself is one of the priority provinces receiving support from DEMAPAN. Within 7 years, the GoI has already spent more than USD 25 million for DEMAPAN program implementation. However, the cost effectiveness of the program funds is limited because the program, which aims to build farmer and community capacity, does not incorporate the risk and reality of climate change yet. Therefore, the desired results are at times not achieved as climate change interferes.

On the other hand, efforts to increase the capacity of communities to use climate forecasts have been implemented in a number of villages through the Climate Field School program (CFS). The program is coordinated by the Agriculture Office of NTB Province and supported by funding from the Directorate of Plant Protection (Ditlin) of the Ministry of Agriculture. However, the effectiveness of the program in increasing farmers' capacity in managing climate risk has been low. The understanding of CFS facilitators on how to apply climate information is limited and CFS modules that are suitable for local conditions have not been developed. Forecast information is not effectively disseminated and often does not correspond in terms of timing and content with what is most needed by communities on the ground. Communities depend entirely on local knowledge in predicting the weather and climate.

Due to the lack of resources, the capacity of the local government to rehabilitate infrastructure damaged by climate hazards, particularly floods, is also very low. The resources normally provided to rehabilitate infrastructure such as irrigation facilities damaged by a flood is far from enough. As a result, a lot of the infrastructure in NTB has been progressively degrading because of increasingly frequent floods. According to the Public Work Offices of NTB (2012), about 60% of the irrigation facilities are damaged and need rehabilitation.

The Provincial Government is already aware of this issue and has established a Task Force including various agencies to address climate change and food security issues. The Climate Change-Food Security Task Force has produced a Strategy and Action Plans for 2011-2015. At the district level, task forces on climate change have yet to be established, but district level food security taskforces do exist. These district food security task forces have partially addressed the issue of climate change adaptation in its action plans; although the capacity of district governments to translate the provincial strategy into local programs and actions has not been adequately developed.

A vicious cycle results where a deteriorated environment triggers negative coping behaviors by increasingly vulnerable and food insecure populations which in turn puts further strains on that same environment. Carefully designed and implemented adaptation interventions can break that vicious cycle and transform it into a virtuous one, where climate change adaptation protects and strengthens livelihoods, thereby increasing rural incomes and enabling rural populations to adopt more sustainable lifestyles. As the most degraded area likely to suffer most from climate change, Dodokan watershed in central Lombok District has been selected as the main focus area for the proposed adaptation interventions.

PROJECT/PROGRAMME OBJECTIVES AND TARGET LOCATIONS:

The overall objective of the project is to secure community livelihoods and food security against climate change-induced rainfall variability leading to more intense and frequent climate events while simultaneously supporting the Government's renewed, deliberate efforts to address the underlying anthropogenic drivers that have caused the degradation of land and increased the vulnerability of communities to food insecurity and climate change.

The project targets the area's most vulnerable to food insecurity and the impact of climate change. The target district has been prioritized by the national and provincial governments. This district, Central Lombok District of Lombok Island's Dodokan watershed encompasses the largest watershed in the province and also the one most vulnerable to increasingly severe and erratic weather. The project will target up to 18,000 households or 15% of the total households living in Dodokan watershed and hundreds of local stakeholders and decision makers. The interventions selected for the project have been selected on the basis of extensive field consultations held in 2013 in ten locations of the Dodokan watershed.

The project will improve institutional capacity at village, district and province level to develop climate-sensitive integrated watershed management plans, involving all concerned stakeholders and placing the community at the centre of the process. The project will result in activities to help build more climate resilient livelihoods for rainfall-dependent farming households and develop alternative livelihoods in the upstream and downstream areas.

Activities within the project are designed to specifically support the DEMAPAN Program under the framework of the National Action Plan on Climate Change Adaptation (RAN API). It will strengthen the DEMAPAN Program by mainstreaming the consideration of climate change risks to ensure their effectiveness and strengthen the links between planning and action at local levels. It is hoped that adding the climate change lens to DEMAPAN can make the programme a lot more cost effective. If successful, it is expected the GoI would scale up the additional activities with DEMAPAN at national scale using GoI funding.

The project is planned to last four years. While it will not be able to reverse the impact of climate change during that time frame, it will give local government, civil society and communities the tools and knowledge to accomplish this ambitious aim over a longer time frame. Within the project time frame of four years, it will deliver tangible outcomes on the grounds that include increased local availability of food, better access to it for the poor, and strategies to overcome lean season food insecurity and income diversification. It will increase and diversify income sources enabling communities to better withstand current and future climate risks. Improved water storage and irrigation will help overcome uncertainty of rainfall, and improved soil quality and fertility will increase yields. The project will also demonstrate good practices that can be replicated in government's larger efforts to tackle the underlying drivers of deforestation and land degradation in the area. Better connectivity to early warning and climate services combined with more efficient agriculture extension services will further increase the resilience of communities. The most important outcome of all that is expected within the four year time frame is the empowerment of stakeholders which will ensure sustainability of the project's activities with a much reduced level of external assistance.

PROJECT / PROGRAM COMPONENTS AND FINANCING:

PROJECT COMPONENTS	EXPECTED CONCRETE OUTPUTS	EXPECTED OUTCOMES	AMOUNT (US$)
1. Improving knowledge and institutional capacity of local governments to reduce climate risks associated with rainfall variability and their impact on community livelihoods and food security, aligned with existing government food security programmes (e.g. DEMAPAN)	1.1. Extension workers, local government officers at village and district levels are trained and mobilized to • assess climate risk under different land use scenarios • improve management of land and water resources	Increased knowledge and capacity of local communities and governments to manage climate risks and full ownership of adaptation measures in targeted communities in Dodokan watershed	81,000
	1.2. Community members and farmer organizations are trained and mobilized to • design and monitor the implementation of local climate change adaptation plans that address gender specific issues and vulnerable groups • ensure anthropogenic causes of land degradation are addressed through self-policing of negative practices that result in land degradation by the community, and through improved law enforcement		79,600
	1.3. Local food security and adaptation plans are integrated with district and provincial development plans, and a climate-sensitive integrated Master Plan for watershed management is developed.		68,750
	1.4. An early warning system for climate-related disasters in target sub-districts is designed, implemented and maintained.		402,482
	1.5. Lessons learned from community and local experience are shared and used for refining and prioritizing provincial climate change adaptation actions		187,625
2. Securing livelihoods and the food security of up to 18,000 rain-dependent farmer households, living in the up and downstream	2.1. A diverse range of suitable crop species and varieties that are tolerant to rainfall variability are selected and cultivated and suitable plants, soil, water and nutrient management practices are applied	Diversified and strengthened livelihoods and sources of income enable vulnerable farmers households to tackle the climatic and anthropogenic	1,406,719

PROJECT COMPONENTS	EXPECTED CONCRETE OUTPUTS	EXPECTED OUTCOMES	AMOUNT (US$)
areas of Dodokan watershed in Central Lombok District, against climate change-induced rainfall variability and extreme weather events such as droughts and floods, aligned with existing government food security programmes (e.g. DEMAPAN).	by the farmers in the up- and downstream areas of Dodokan watershed, resulting in an increase of diversification and yields	drivers of vulnerability and enhance the community's ability to use climate information for managing climate risks.	
	2.2. Proper post-harvest handling, storage, basic food processing and food quality and safety assessment steps and methods are applied by the farmers in the up and downstream areas of Dodokan watershed		628,803
	2.3. Increased income for vulnerable families through the creation and improvement of natural and physical livelihood assets		2,146,833
Component 1			819,456
Component 2			4,182,355
Project/Program Execution cost <9.5%			524,148
Total Project/Program Cost			5,525,959
Project/program Management Fee charged by the Implementing Entity 8.5%			469,707
Amount of Financing Requested			5,995,666

The project activities will be supported by cost sharing arrangements with the Executing Entity and other government partners. Cost sharing experiences from previous cooperation between WFP, BKP and NTB Government will be leveraged to ensure resources are shared in a cost effective manner.

PROJECTED CALENDAR:

MILESTONES	EXPECTED DATES
Start of Project/Program Implementation	May, 2015
Mid-term Review	May 2017
Project/Program Closing	April, 2019
Terminal Evaluation	October, 2019

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.*

Agriculture within the district targeted by the project faces the highest risk of recurrent harvest failure due to climate change in NTB province. Dodokan is the principal source of irrigation water for Central Lombok District. Official data show that the Dodokan water balance deficit during the last 10 years is the highest among all of Lombok's watersheds and that 55% of droughts in the province occur in Dodokan. If current conditions continue and are exacerbated further by climate change, water availability and food security will become insurmountable problems, perhaps forcing migration out of the area. Thus, integrated efforts to restore and sustainably manage the watershed are crucial to supporting adaptation and food security in the area.

Schematically, the problems can be presented in the below problem tree (Figure 13). Two main factors are causing the increased vulnerability of the agricultural system and food security to climate variability and climate change. The first is a combination of inadequate policies and lack of capacity of local government to cope with climate variability and climate change, which results in a limited number of often insufficient or inadequate programs. The second is low capacity of communities to manage climate risk and a lack of knowledge, which often leads them into unsustainable farming practices and causes further damage to the environment.

The first factor is closely associated with the inability of policy makers to translate climate change awareness into risk reduction measures in short, medium and long term development plans. This is often due to a limited understanding of climate change, a lack of availability of tools needed to assess climate change impacts and to inform decision making, and limited adaptation technologies and human resources. The second factor is closely associated with the acceleration of environmental degradation due to poverty and weak capacity to effectively use climate information to manage current and future climate risks.

Addressing the first factor requires better climate change policy and programs and an improved capacity of local government to design and implement these, while the second requires strengthening the resilience of vulnerable groups to empower them to cope better with climate variability and change. This can best be achieved through a combination of poverty alleviation measures, improved use of technology, the development of alternative livelihoods, improved institutional coordination, and the development of an effective climate information system. Outcomes of this project will prepare the stage for sustainable community driven and owned interventions. It will generate the institutional mechanisms and create the knowledge, tools and skills to develop and run the system.

In order to address both factors and achieve optimal outcomes, the project activities will be structured under two main components. Outcomes of component 1 will improve the capacity of

local government and communities to manage climate risk and further address land degradation and deforestation in the area. This component will strive to address the policy and programmatic gaps, and to develop and implement integrated watershed management involving all concerned stakeholders with strong community participation and ownership. Outcomes of component 2 will seek to build resilient livelihoods of the vulnerable groups in the face of more unpredictable and damaging weather patterns, and to develop alternative livelihoods to assist the Government's broader efforts to address underlying drivers of land degradation and vulnerability to food insecurity and climate change. Taken together, both create a virtuous cycle where good policy, improved capacity and concrete adaptation actions empower communities to adapt to the effects of climate change and to reverse the environmental damage which if unchecked would further increase their vulnerability.

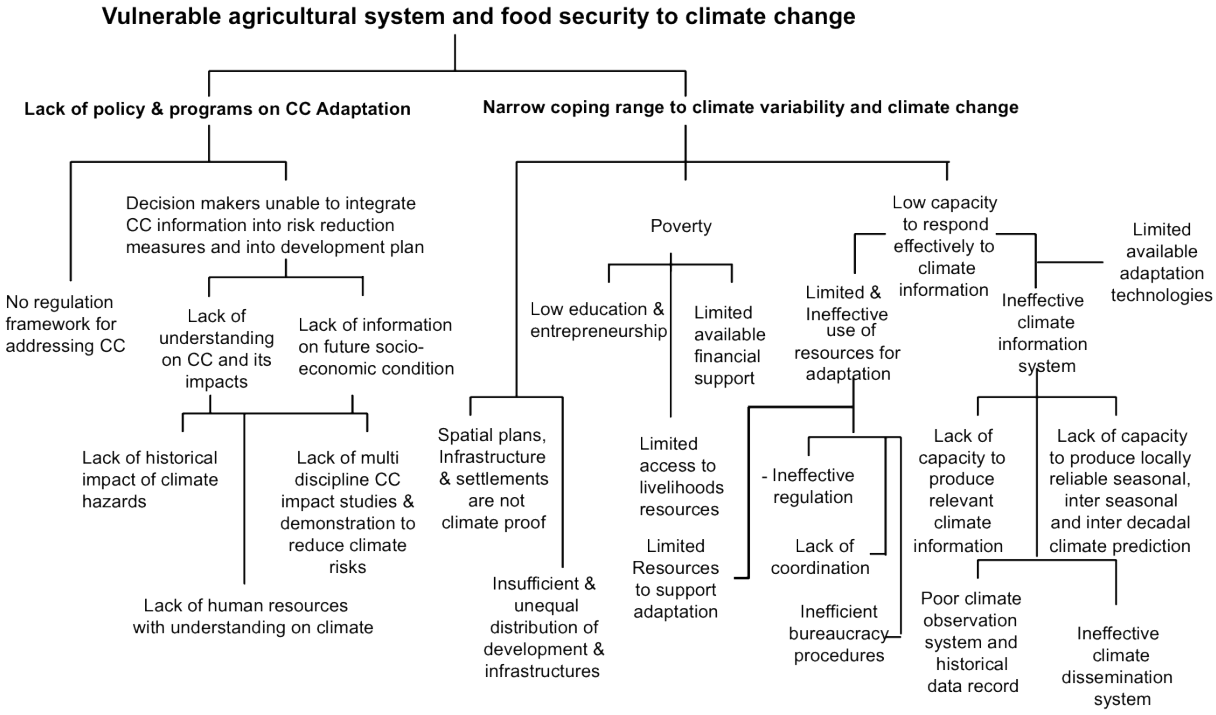


Figure 13. Barriers to Climate Adaptation in NTB (modified from Boer, 2007[9])

The outcomes and outputs are designed to address the following issues:

1. Capacity of the local community to use climate information to manage climate risk and move toward more sustainable land use practices, especially for rainfall dependent farmers;
2. Improvement of agricultural infrastructure to enable more climate-resilient food production systems and income diversification, especially for women;
3. Community forest protection through the establishment of village conservation agreements;

[9] Boer, Rizaldi. 2007. National Programmes on Climate Change Adaptation. UNDP Project Report.

4. Improvement of the quality of agricultural extension services, especially by raising awareness on climate change and strengthening technical capacity to assist with the design and implementation of adaptation measures;
5. Balance of self-policing and improved law enforcement to address the anthropogenic drivers of land degradation and deforestation.

Component 1: Improving knowledge and institutional capacity of local governments and communities to reduce climate risks associated with rainfall variability and their impact on community livelihoods and food security, aligned with existing government food security programmes (e.g. DEMAPAN).

Increasing numbers of people and livestock (particularly in steep, mountainous watersheds), along with unsustainable farming practices, are causing forest and land degradation. The cost of such degradation is manifested in eroded soil, reduced productivity, landslides, diminished water quality and quantity and loss of biodiversity. Provincial and district governments are putting in place programs to address the situation, however their success may be compromised by poor capacity, insufficient funding, as well as more severe and erratic weather brought on by a changing climate. Local governments are promoting more sustainable farming practices, but these will not be sufficient. Measures are needed to ensure that climate change is considered in local, district, provincial and national planning.

Outputs and activities established in component 1 aim to improve the capacity of local governments and related stakeholders to design adaptation plans and set the conditions that would allow improvement in land and water resource management, reduction of post-harvest losses, and reduction of food insecurity and climate vulnerability through improvement of natural and physical livelihood assets. Capacity development in climate risk analysis and development of land use scenarios under different climate scenarios will help to identify climate vulnerabilities and adaptation actions according to the needs of targeted communities. Further information on the linkages between component 1 and 2 can be found in figure 14.

Activities and outputs in component 1 include supporting the government in identifying potential sources of funding and leveraging international cooperation on climate change adaptation, and helping to overcome due limitation of funding at local level. Overall, this component aims to strengthen the DEMAPAN programme of the Food Security Agency by mainstreaming the consideration of climate change risk into their programme design and strategy. Efforts will be made to align the targeting of villages located in the Dodokan watershed in Lombok Tengah with the targeting by DEMAPAN in the same area. By incorporating activities aimed at securing livelihoods and food security against climate-change induced rainfall variability and extreme weather events into DEMAPAN, the costs effectiveness of the programme can be improved significantly.

Five outputs are proposed:

Output 1.1: Extension workers and local government officers at village and district levels are trained and mobilized to (i) assess climate risk under different land use scenarios; and (ii) improve management of land and water resources.

An improved understanding of the current land use dynamics and possible changes to it due to climate change and other factors, as well as the implications of the changes for the capacity of the watershed to provide ecosystem services, is crucial for developing a land use plan that increases watershed resilience. Activities established in output 1.1 will contribute to identify climate vulnerabilities and adaptation actions to design a local adaptation plan to enhance climate adaptation capabilities of food insecure populations.

Landscape-based activities in the watershed will be defined through a participatory process that takes into account the ecological zone and community priorities. The strategy is grounded in Indonesian experience demonstrating that community-level adaptation requires awareness raising, increased knowledge, improved capacities and the stable provision of ecosystem services. By maintaining large-scale resilience, the flow of ecosystem services will be maintained, without irreversible ecosystem regime shifts.

This output will also contribute to the initiative at national level. The Ministry of Environment is developing an Online Vulnerability Assessment (VA) that aims to monitor and evaluate the attainment of the National Action Plan on Adaptation (RAN-API). If the capacity of local government has been improved, they can also contribute to the development and refinement of such an online VA. For example, local government can contribute to the identification of relevant indicators at local level for the vulnerability assessment.

Specific activities under Output 1.1 include:

1. Supporting the provincial government in identifying gaps in available studies on land use dynamics in the watershed system of Dodokan; as well as the development of land use scenarios, under different climate scenarios, in close consultation with relevant stakeholders and communities.
2. Supporting the assessment of current and future climate risks in the Dodokan watershed under different land use scenarios and identifying relevant options for improving land and water management, crop management and assets creation that reduce food insecurity and enhance climate adaptation capabilities of households living in the watershed.
3. Trainings to extension workers and local government officers (including the Climate Change Task Force) to conceptualize and design efficient adaptation projects and make the necessary budget allocations for the prioritized adaptation plans including the identification of resource gaps.

Output 1.2: Community members and farmer organizations are trained and mobilized to (i) design and monitor the implementation of local climate change adaptation plans (that also address gender specific issues and vulnerable groups); and to (ii) ensure anthropogenic causes of land degradation are addressed through community efforts to self-police negative practices resulting in land degradation, backed up by improved law enforcement.

This output will provide the necessary foundation to deliver most of the project results under Component 2. Farmer Organization strengthening is the key to effective project delivery on the

ground. Importantly, every farmer group in the target areas will develop a management plan for small-scale, 'no-regret' adaptation plans. These plans will be guided by the village level implementation committee set up through the project and technically assisted by the district government officials and implemented with community and local government support. Multiple funding sources for the upkeep and maintenance of the adaptation action plans would include membership contributions, development programs implemented by national and provincial governments and technical agency budgets.

Farmer groups will receive training in climate risk identification and adaptation planning, including the methodology of conducting Vulnerability Assessments (VA) so that they can conduct community-level VAs in each target village at the beginning and end of the project cycle. VAs in this project serve as a vehicle to increase household level awareness as well as a tool to plan adaptation actions and measure their effectiveness. Training will include gender sensitivity and food security analysis.

Specific activities under Output 1.2 include:

1. Development of a training module to help communities and farmer organizations to assess climate and non-climate risks; community level vulnerability assessment and adaptation planning and implementation of the training plan.
2. Identification and design of local climate change adaptation plans and establish a participatory monitoring and reporting mechanism (related to Outputs 2.1 and 2.3) for land use change to avoid further illegal logging activities and to strengthen law enforcement.
3. Advocacy for the community to design village conservation agreements (forest protection), using customary law and local wisdom (*awig-awig*).

Output 1.3: Local food security and adaptation plans are integrated with district and provincial development plans, and a climate-sensitive integrated Master Plan for watershed management is developed.

An integrated land and water management plan from the upstream to the downstream of the watershed is necessary to ensure that the development of watershed follows the landscape rather than community preferences.

Based on the activities of Output 1.1, the master plan of landscape-based, integrated watershed management will need to be integrated into local development plans in order to strengthen the resilience to climate change-induced food insecurity. In addition, the project also allows for the inclusion of indigenous knowledge for capturing local conditions, which will be collected through field observations, focus group discussions and interviews.

Specific activities under Output 1.3 include:

1. Conducting discussions with related stakeholders and local authorities in Dodokan watershed to design the master plan.

2. Supporting the Climate Change Task Force in adopting and integrating the Master Plan into the provincial and district government planning processes, including gender and food security dimensions.

Output 1.4: An early warning system for climate-induced disasters in targeted sub-districts is designed, implemented and maintained.

An effective early warning system for coping with extreme climate events and managing future climate risks is needed to support the activities under the Outputs 1.1 – 1.3 and all activities under Component 2. There is also a need to strengthen the institutional mechanism to disseminate and translate climate information into local strategies.

At national level, the Agency for Meteorology and Climatology (*Badan Meterologi Klimatologi dan Geofisika*/ BMKG) has been providing regular climate forecasts and the Ministry of Agriculture has developed a dynamic cropping calendar and assigned BP2TP (Agricultural Research Agency) at the local level to disseminate and utilize the cropping calendar. However, the dissemination system remains weak. Information from BMKG is still rarely applied to field activities. During the consultation process, it became apparent that the weaknesses were mostly caused by a confusing system of coordination and dissemination between the Meteorological Agency, Agriculture Agency, and the communities who are the users of information. Also, there were difficulties in translating climate forecast data into languages local farmers understand because of the limited capacity of agriculture extension workers. Finally, there was little understanding of indigenous wisdom, knowledge and practices.

The National Food Security Agency (BKP) is also undergoing processes to revitalizes the Food and Nutrition Surveillance System (FNSS) at the village level, and to monitor the overall food and nutrition situation for early warning and timely response planning on interventions to address food and nutrition insecurity problems in the community. The FNSS is currently being piloted in 88 villages of 12 sub-districts representing different pre-determined livelihood zones in three selected districts (West Lombok, Central Lombok and East Lombok) of Nusa Tenggara Barat (NTB) Province. FNSS provides essential information on crop cultivation, damaged areas, harvested production, prices of the main commodities, and the growth monitoring and nutrition status of under-five children. Data on crop production are collected and provided by the field agriculture coordinators of the Agriculture Offices, while nutrition related data are received from the Health Offices of the piloted districts and sub-districts. The FNSS also plan to include transient indicators of food vulnerability on climate change, including rainfall deviation and climate related natural disasters as part of the analysis.

To ensure the effectiveness of the above systems, it is necessary to improve the accessibility and application of national data locally and to also identify and leverage local wisdom for managing climate risks and vulnerability in an integrated manner. The project will begin with field observations, focus group discussions and interviews. Individuals who show appreciable knowledge of climate change and adaptation will be selected for in-depth interviews in order for project staff to carry out a comprehensive analysis of the effectiveness and challenges of traditional coping strategies. These individuals will also be supported as champions for dissemination of information.

Overall, the improvement of capacity at local level to understand and use climate information aims to support national efforts to enhance the flow of information down to, and back up from, communities. Currently, the Ministry of Environment is developing an online system for monitoring vulnerability to and risks of climate change with the aim to leverage locally collected information for its analysis.

Specific activities under this Output 1.4 include:

1. Evaluation of existing early warning information for NTB province and development of an effective information and dissemination system.
2. Facilitating the discussion with relevant stakeholders on the use of climate early warning systems and how to strengthen existing institutions' ability to utilize information at all levels.
3. Supporting the establishment of a technical team, consisting of farmer groups and extension workers, that will be responsible for translating and disseminating climate information into technical or operational actions to establish an iterative process of integrating scientific and indigenous weather forecast information through a site-specific Food and Nutrition Surveillance System (FNSS) and Climate Field School (CFS) modules.
4. Inclusion of climate change indicators into the provincial Food Security Monitoring Program (FNSS) in order to forecast climate-related production shortfalls and price shocks.

Output 1.5: Lessons learned from community and local experience are shared and used for refining and prioritizing provincial climate change adaptation actions.

This project is expected to generate a number of lessons learned which can be replicated in other areas or at the national level. It will provide BKP with a platform to field test its own strategies and actions for DEMAPAN Program under the framework of the National Action Plan on Climate Change Adaptation (RAN-API) and the NTB Government for the Action Plan on Food Security under Changing Climate. This output would therefore serve as a necessary feedback mechanism through which successful practices and strategies are endorsed and scaled up in future action plans.

Dissemination of information on project impact and results is an essential means of broadcasting replicable models to other regions, provinces and districts with similar issues. A good communication strategy will not only inform the general public, but also provide a channel to other government agencies. This output will support organized visits to the project areas for National Project Steering Committee (NPSC) members and invited officials of BKP, Bappenas, Ministry of Environment, etc. Targeted exchange visits from communities within the targeted areas and elsewhere in the watershed will support immediate replication of the model or some of its more successful elements in other vulnerable areas.

Under this output a feasibility study on climate insurance will be conducted. The Ministry of Agriculture has proposed to allocate IDR 345 billion (USD 33.6 million) from the national state budget in 2014 to initiate a 'Farmer Insurance' program. The government would allocate the budget to cover insurance for 2.4 million hectares of rice fields. NTB Province has potential to be selected as one of the pilot provinces. This feasibility assessment will support the provincial government to

convince the Ministry of Agriculture to prioritize NTB in general and the sites targeted by this project in particular. In addition, it would improve the likelihood the national programme draws on a solid feasibility study, whose methodology could even be replicated in other areas. This is particularly important given that climate insurance has so far gained limited traction in Indonesia. If the government insurance program can be implemented at the project sites covered under this proposal, then the communities which will be able to improve their livelihoods through the project, may also benefit from the longer term protection from climate risk afforded by insurance. In other words the feasibility study could ultimately enhance the sustainability of what will be achieved with the Climate Change Adaptation Funding.

Specific activities under Output 1.5 include:

1. Documentation of process and outcomes from local experiences including the identification of lessons learned from all relevant project outputs.
2. Jointly conducting a feasibility assessment for the development of a micro-level climate risk insurance scheme in the region, with local government and private sector counterparts as an input to the national program 'Farmer Insurance' by the Ministry of Agriculture.
3. Dissemination of information targeting both print and electronic media in national and local media (using local languages).
4. Workshops and consultations with key stakeholders on climate change adaptation at national and provincial level for replication of best practices and scaling up processes.
5. Exchange visits from adjacent communities to promote replication potential and bring the adaptation focus into local development planning processes, especially village development plans.

Component 2: Securing livelihoods and food security of up to 18,000 rain-dependent farmer households, living in the up- and downstream areas of Dodokan watershed in Central Lombok District, against climate change-induced rainfall variability and extreme weather events such as droughts and floods, aligned with existing government food security programmes (e.g. DEMAPAN).

Outcome and outputs under Component 2 are fully aligned with the "National Action Plan on Climate Change Adaptation" under the coordination of BAPPENAS and they specifically support the Food Resilient Village (DEMAPAN) Program of BKP and the "Provincial Strategy and Action Plan for Food Security under Changing Climate" of NTB Provincial Government, which is coordinated by the Food Security Office (BKP) NTB.

The project would allow BKP to test the corresponding menu of priority actions and indicators that are included both in the National and Provincial Action Plans. These actions include selecting and cultivating high yielding and drought tolerant rice varieties, adopting suitable land- and crop management practices, adjusting rain-fed farming practices to rainfall variability to a seasonal cropping calendar in order to reduce demand for irrigation water, adopting a surveillance and forecasting system to measure impact of climate change, and adjusting agroforestry and community forest protection practices.

Component 2 directly addresses rainfall variability, the key climate change problem identified in the watershed, while at the same time also addressing non-climatic anthropogenic causes for land degradation. This last factor is addressed through the empowerment of community forest protection and village conservation agreements.

The component is designed to reach up to 18,000 vulnerable rural households (equivalent to 53,877 people) living in the targeted up and downstream areas of Dodokan watershed in the Central Lombok District. It consists of three key outputs as listed below. All the activities under the three outputs are designed jointly with the targeted farmer households, based on a context-specific assessment of the specific constraints they face with regard to securing their livelihoods and food security.

The assessment will take into account issues/challenges related to gender relations to ensure that the design of the activities is gender sensitive. Activities should, at the very least, not have a negative effect on gender relations and, if feasible, contribute to improved gender equity. In farmer communities in Indonesia, women often actively participate in agricultural activities, while also seeing to household chores and raising children. This has implications on the availability of women to participate in activities. However, because they play a key role in achieving food security, in terms of food availability, access and utilization and nutrition security, their active participation is crucial. Therefore activities will be designed in such a way that women can and are motivated to participate and that they make full use of the opportunity to provide women with the means, knowledge and skills that allow them to fulfil their potential.

The implementation of the activities will depend on active participation of the rural households. They are supposed to provide input in the form of working days in the field adaptation activities. There are also activities related to capacity development under this component that are crucial for the implementation of the field adaptation activities. However, more than 80 percent of the budget of component 2 will be allocated directly to the field adaptation activities.

The component will have 3 key outputs as below:

Output 2.1: A diverse range of suitable crop species and varieties that are tolerant to rainfall variability are selected and cultivated and suitable plants-, soil-, water- and nutrient management practices are applied by the farmers in the up- and downstream areas of Dodokan watershed, resulting in an increase of diversification and yields.

The main staple food in NTB Province is rice. Within Lombok, Central Lombok District and East Lombok District are the main paddy production areas. In fact, Central Lombok District ranked highest of all districts in NTB in terms of 2009-2011 average annual paddy production (almost 232,000 metric tons[10]). However, climate change-induced rainfall variability poses a severe threat to the paddy harvests of farmers in the Dodokan watershed and productivity can be further improved, both

[10] Source: UN World Food Programme Indonesia and the Government of Indonesia (2014). *Food Security and Vulnerability Atlas of Indonesia 2013*. Note: draft version.

on the rain-fed, as well as on the (semi-)irrigated paddy fields. In order to mitigate this threat and improve productivity, several actions will be undertaken under this output:

- Selection, production and storage of rice varieties that have demonstrated tolerance to rainfall variability, adaptation to climatological-, topographic- and soil conditions, pest- and disease resistance and high yields;
- Using weather forecasting information for decision making on cultivation calendars and
- Cultivation of selected rice varieties and application of plants-, soil-, nutrient- and water management practices that are adapted to the climatological-, topographic- and soil conditions.

In addition, there is a need for more diversified agricultural production to mitigate climate change-induced threats to production, to improve the dietary diversity and to generate additional sources of income of the farmer households in the Dodokan watershed. Alternative sources of carbohydrates are maize and tubers, e.g. cassava, sweet potato. Average annual maize production over the period 2009-2011 was around 12,000 metric ton and average annual production of cassava and sweet potato combined over the period 2009-2011 was a bit over 4,000 metric tons[11] in Central Lombok District. Pulses, e.g. mung beans, azuki beans as well as oils seeds, e.g. soy bean and peanut are valuable and relatively cheap sources of protein and minerals (compared to animal sources of protein) and vegetables, e.g. chili peppers, tomatoes, eggplants, paksoy, green beans and carrots are important sources of vitamins and minerals. The exact crop species to be grown will need to be selected by the farmer households themselves with assistance from technical experts, using the following criteria: adaptation to climatological, topographic and soil conditions, nutritional value and marketability. For the selected crop species, the same actions as described above for paddy, will be undertaken.

The selection of crop varieties will be done through testing of different local and commercial 'new' varieties on trial plots in each of the 17 targeted villages in the up- and downstream areas of Dodokan watershed. These multi-location tests will be conducted over a period of 2-3 years, covering an average of 8-9 cycles and 3 generations of each tested crop variety. The local varieties that have demonstrated tolerance to rainfall variability, adaptation to climatological-, topographic- and soil conditions, pest- and disease resistance and high yields will be propagated in nurseries and stored in seed banks to protect biodiversity.

The management practices will be based on the four main, interacting principles of the System of Rice Intensification (SRI)/System of Crop Intensification (SCI):

1. Establishing plants early and quickly, to favor healthy and vigorous root and vegetative plant growth.
2. Maintaining low plant density to allow optimal development of each individual plant and to minimize competitions between plants for nutrients, water and sunlight.
3. Enriching soils with organic matter to improve nutrient and water holding capacity, increase microbial life in the soil, and to provide a good substrate for roots to grow and develop,

[11] Source: UN World Food Programme Indonesia and the Government of Indonesia (2014). *Food Security and Vulnerability Atlas of Indonesia 2013*. Note: draft version.

4. Reducing and controlling the application of water, providing only as much water as necessary for optimal plant development and to favor aerobic soil conditions.

Detailed SRI management practices were originally developed for irrigated rice fields, but have been adapted for rain-fed rice fields. When adapting SRI/SCI management practices to their own specific conditions, farmers can decide which of the suitable crop varieties to grow, the degree of mechanization and the application of chemical fertilizer and pesticides. Improved plant performance can be observed with both local and commercial 'new' varieties when using SRI management practices. This is because the plants can better express their genetic potential when grown in a more optimal environment. In addition, because plants are stronger and more deeply rooted, they show greater resilience towards drought, strong winds and storms. Use of chemical fertilizer can be reduced significantly as fertilizer use efficiency increases in soils enriched with organic matter. As soils improve in structure and become more fertile through periodic organic matter amendments, less fertilizer is needed to achieve a targeted production level. If the soil is sufficiently fertile, use of chemical fertilizer can be eliminated. Use of pesticides can be decreased because SRI plants are stronger and healthier. Disease pressure is reduced when plants are widely spaced because humidity levels in the plant canopy are lower than in more densely planted conventional fields.

SRI was first introduced in Indonesia back in 1999 and has been adopted by Indonesian smallholder farmers. Demonstrated benefits of SRI in over 50 countries where it has been adopted so far, include increased yields of 20-50% or more, a reduction in seed use of 80-90% and up to 50% irrigation water savings. By increasing yields and reducing the use of inputs, farmers can increase the food consumption in their households, as well as the profitability of sales activities. Additional environmental benefits include: increased water availability through the reduction of irrigation water, improved water and soil quality through the reduction of agrochemical use, increase in soil carbon pools through the additions of organic matter to soils and reduction in methane emissions from rice paddies through non-flooded rice paddy conditions.

Specific activities under Output 2.1 include:

1. Establishment of community-owned trial plots, nurseries and seed banks in each of the 17 targeted villages in the up- and downstream areas of Dodokan watershed, for the selection of different local and commercial 'new' crop varieties that have demonstrated tolerance to rainfall variability, adaptation to climatological-, topographic- and soil conditions, pest- and disease resistance and high yields and the propagation and storage of the selected local crop varieties. This activity will be carried out by farmers in each of the 17 targeted villages under a 'Cash For Work' scheme (one participant per household), with the assistance of technical experts.
2. Training of farmer organizations in each of the 17 targeted villages in the up and downstream areas of Dodokan watershed on the application of seasonal and short-term scientific/indigenous weather forecasting information for decision making on cultivation calendars and on adapted SRI/SCI management practices. Each year 5 trainings will be provided to an average of 50 farmer organizations (10 farmer organizations per training), based on the cultivation implementation schedule. In total 20 trainings will be provided to an average of 200 farmer organizations.

3. Diversified cultivation of 893 hectares of rain fed agricultural land located in 6 of the 17 targeted villages in the downstream areas of Dodokan watershed and another 590 hectares of (semi)irrigated agricultural land located in the other 11 targeted villages in Dodokan watershed, using selected crop varieties and applying adapted SRI/SCI management practices. Each year an average of 370 hectares will be cultivated by an average of 750 farmer households, assuming an average land size of 0.5 hectares per farmer household, which is the typical land size of Indonesian smallholder farmers. This activity will be carried out by farmers in each of the 17 targeted villages under a 'Cash For Work' scheme (one participant per household), with the assistance of technical experts.

Output 2.2: Proper post-harvest handling, storage, basic food processing and food quality and -safety assessment steps and methods are applied by the farmers in the up- and downstream areas of Dodokan watershed.

In order to fully capitalize on the increase of diversification and yields that will result from the activities under output 2.1, the application of proper post-harvest handling, storage, basic food processing and food quality and safety assurance steps and –techniques is crucial, hence this is the focus of output 2.2. In addition, efforts will be made to establish business relationships between farmer organizations and private and/or public sector buyers, based on fair prices. WFP Indonesia has first-hand experience with procuring food commodities from smallholder farmers under its Local Food Based School Meal programme in Nusa Tenggara Timur (NTT) Province and can also tap into the experience of the WFP corporate Purchase For Progress pilot with implementing different types of purchase modalities, e.g. direct forward purchase contracts, 'smallholder friendly tenders', warehouse receipt systems.

Post-harvest handling steps of cereals, pulses and certain oil seeds include drying, threshing/shelling, cleaning and sorting and storing/packaging. For vegetables the first step is cleaning. For each step different methods can be used, depending on the specific harvested crop, access to equipment and facilities and product specifications of buyers – in case the harvested crops will be sold.

Proper drying, immediately after harvesting, is very important to ensure a low moisture level, which is in turn key to ensuring quality and safety and shelf-life. Drying can be done on plastic sheets or woven mats, cement drying floors or in constructed drying cribs and precautions should be taken to not let the harvested crops get wet. In order to determine the length of the drying process, the moisture level needs to be assessed, preferably by using an electronic moisture meter. A high moisture level will enhance the growth of fungi, which destroy the germ and nutrients, induce a bad taste, promote heating within the stores/bags and produce toxins. One very dangerous fungus that can be found in maize and peanuts is *Aspergillus flavus*, since it produces aflatoxins that are seriously damaging to the human (and animal) body.

Threshing/shelling is often a labor intensive process and can be done much faster when using hand- or motor-driven threshers/shellers. Care should be given to not break or damage the grain/kernels/beans. Cleaning and sorting of cereals/pulses involves removing all the foreign matter, broken, damaged and other colored grains/kernels/beans by hand picking, sieving and/or

winnowing. For vegetables the cleaning and sorting process is obviously different, but very important. It is the first post-harvest handling step and needs to be carried out immediately after harvesting to ensure quality and freshness and to prevent growth of fungi. One set of post-harvest handling equipment for threshing/shelling and cleaning and sorting will be provided to each community commodity collection point (see below) in each of the 17 targeted villages in the up- and downstream areas of Dodokan watershed.

The decision on whether to store or package the harvested crops and what type of storing means/packaging materials to use is first of all dependent on the required shelf-life, combined with the prevailing climatological conditions. Secondly, it depends on the access to storing means/packaging materials and the product specifications of buyers – in case the harvested crops will be sold. For cereals and pulses, a maximum shelf-life in a tropical climate like that of Indonesia can be achieved when storing the grains/kernels/beans in hermetic, insect-proof, food-grade metal- or plastic drums or water- and UV-resistant PVC storage units, like the 'GrainPro GrainSafe'. If the grains/kernels/beans need to be packed in bags in order to be sold, the best options are the 'triple bag' (2 layers of food grade Polyethylene + 1 outer layer of woven Polypropylene) and 'GrainPro SuperGrainbag' (multi-layer food grade Polyethylene + 1 outer layer of woven Polypropylene or jute). Vegetables can be packed in food-grade; reusable plastic crates with wholes that allow air circulation and that can be placed on top of each other. The crates need to be cleaned thoroughly with food- grade cleaning products prior to being used for the new harvested crops to prevent contamination with insects, fungi and bacteria from previous harvested crops.

For harvested crops that are going to be sold by farmer organizations collectively, the cleaning and sorting, packaging and storage, can best be carried out at community commodity collection points (CCCP), to ensure consistency in quality. CCCPs will be constructed in each of the 17 targeted villages in the up- and downstream areas of Dodokan watershed to be used by the farmer organizations in each village. As far as possible this activity will be aligned with the implementation of the Community Food Storage programme[12] and the Village Food Self-sufficiency programme[13] of the Food Security Agency[14] in Central Lombok District. CCCPs have an area to take in the harvested crops, an area for cleaning and sorting, an area for packaging and a closed of, well ventilated storage area. For vegetables cold storage is ideal, but the investment is high and there are very limited suppliers of cold storages in Indonesia. Bags and crates should be placed on pallets, never directly on the floor and the stacking should be done in a systematic way to ensure stable stacks. For each stack, a stock-card should be kept, indicating the intake, discharge and balance. For discharge, the 'First In First Out' (FIFO) system should be used.

Quality and -safety assessment should be carried out at the intake of harvested crops at the CCCP and again prior to discharge to buyers. For this it is important that representative samples are taken using proper sampling tools, e.g. sampling spear, weighing scale. The representative samples will be used for the assessment of the quality- and safety parameter that are included in the product specifications of respective buyers. The Indonesian National Standard (SNI) can be used as a

[12] Lumbung Pangan Masyarakat – LPM
[13] Desa Mandiri Pangan – DEMAPAN
[14] Badan Ketahanan Pangan – BKP

reference. For most commodities the SNI includes different quality grades, each with their accompanying quality parameter limits. For cereal and pulses, the quality parameters in the respective SNIs include moisture level, percentages of broken, damaged and other colored grains/kernels/beans, presence of insects and odor. The SNI typically does not include specific safety parameters, e.g. allowed levels of mycotoxins (e.g. aflatoxin), pesticide residues and heavy metals, these are determined by the National Drug and Food Control Agency (BPOM).

Although many professional buyers will request the quality- and safety assessment to be carried out in laboratories of professional food inspection companies, WFP, together with the Food & Agricultural Services division of Intertek Inspection company, has developed a tool kit, the so called "Blue Box", to conduct rapid quality- and safety assessment of cereals and pulses. It contains sampling tools (e.g. sample spear and scoop), quality grading tools (e.g. electronic moisture meter, sieves, electronic weighing scale) and aflatoxin testing tools (e.g. aflatoxin test strips and incubator). One "Blue Box" will be provided to each CCCP in each of the 17 targeted villages in the up- and downstream areas of Dodokan watershed.

In order to increase the value added of the harvested crops, the extent in which farmers are carrying out basic food processing activities will be increased under this output. Rice- and maize milling machines, to produce rice- and maize flour, out of which several processed food products can be made, will be provided to each CCCP in each of the 17 targeted villages in the up- and downstream areas of Dodokan watershed. Other basic food processing equipment to be provided will be decided upon based on the final selection of crop species to be cultivated under output 2.1.

Specific activities under Output 2.2 include:

1. Training of farmer organizations in each of the 17 targeted villages in the up- and downstream areas of Dodokan watershed on proper post-harvest handling, storage, basic food processing and food quality and -safety assessment steps and –methods for the crops harvested as a result of activity 3 of output 2.1and assisting them with applying these knowledge and skills on the farms and at the CCCPs. Each year 5 trainings will be provided to an average of 50 farmer organizations (10 farmer organizations per training), based on the cultivation implementation schedule of activity 3 under output 2.1. In total 20 trainings will be provided to an average of 200 farmer organizations.
2. Construction of CCCPs in each of the 17 targeted villages in the up- and downstream areas of Dodokan watershed for collective post-harvest handling, storage, basic food processing, quality- and safety assessment and marketing. This activity will be carried out by farmers in each of the 17 targeted villages under a 'Cash For Work' scheme (one participant per household), with the assistance of technical experts. Provision of one set of post-harvest handling equipment for threshing/shelling and cleaning and sorting, one set of quality and -safety assessment equipment ("Blue Box") and one set of basic food processing equipment to each CCCP.
3. Assisting farmer households with the development/ strengthening of farmer organizations for the management of CCCPs and collective marketing.

4. Assisting the farmer organizations with the establishment of business relationships with private and/or public sector buyers based on fair prices, using different types of purchase modalities, e.g. direct forward purchase contracts, 'smallholder friendlytenders'[15] etc.).

Output 2.3: Increased income for vulnerable families through the creation and improvement of natural and physical livelihood assets.

Through cash/ voucher for work schemes, this output will create a direct incentive to the community to produce small scale agricultural and rural infrastructure assets that benefit their livelihoods and halt or reverse land degradation. The assets will be designed to strengthen resilience to withstand climatic shocks and sustain livelihoods and food security. The distribution of cash/ voucher for work will be carried out during the lean season when most rain dependent farmers lack employment and income and are, therefore, food insecure.

There is a lot of abandoned or unproductive land in the upstream and downstream area of Dodokan watershed. A lot of land is degraded as communities have resorted to negative coping behaviors such as illegal logging and unsustainable farming practices. Limited knowledge and capacity of the community to cultivate the land is the main barrier to rehabilitation. Therefore, the design of activities under Output 2.3 will consider the specific characteristics of the watershed landscape, socio-economic conditions and sustainability in the face of more erratic and severe weather. The activities will be specifically designed to provide people with assets which allow them to sustain their livelihoods, thereby reducing the need for further deforestation. Creating economic value will be combined with raising awareness about the importance of restoring degraded land and conserving it to ensure the sustainability of the assets itself.

The output will be complemented with the enforcement of village conservation agreements, (which are designed under output 1.2) using customary law and local wisdom (*awig-awig).* This will be done by increasing the commitment from local community to enforce these agreements as well as by improved communication between communities and district authorities. Payment for Environmental Services (PES) schemes will be explored to create a win-win situation where the community in the upper watershed provides the environmental services and the community in the lower watershed receives the ecological and economic benefits from it. The project will work with both communities towards quantifying the value of the services provided in the upper watershed so as to enable such schemes. While such schemes often make sense, they tend not to be implemented because local government may not fully see their benefits or lack the capacity to put in place adequate coordination and communication between the affected communities. Lesson learned from previous WFP experiences in developing PES mechanism between communities in the upper and lower watershed will also be used to improve the mechanism and further scaling up into wider water catchment area of Dodokan in Central Lombok.

[15] As prototyped by WFP Indonesia under its Local Food Based School Meal programme in Nusa Tenggara Timur (NTT) Province and under the WFP corporate Purchase For Progress pilot: http://www.wfp.org/purchase-progress

Identification of relevant assets will be based on community choices through consultations and the activities identified in the Master Plan (Outputs 1.1-1.3.). Preliminary analysis has been conducted to identify the most vulnerable areas in terms of agriculture harvest risk failure, erosion risk level, and degraded forest areas, combined with the village food insecurity level (Annex 9) in conjunction with the NTB Strategy and Action Plan on Food Security under a Changing Climate. The analysis has been able to identify priority villages for support and the types of intervention needed under the project. Preliminary community consultations also have been conducted within several villages located in this project area. Lessons learned from the previous Food for Asset (FFA) programmes in Lombok Island also become a consideration in selecting the type of assets to ensure high acceptance level by the community and the sustainability. Based on the combination between the preliminary mapping analysis, community consultations, and lessons learned from the previous FFA programme, type of assets and techniques below have been selected as top priority for project intervention under this output. The assets and techniques include:

Small scale pumping irrigation: Small scale pump irrigation can free farmers from dependence on rain-fed irrigation and helps farmers maximize return on their small plots of land, by increasing the number of growing seasons, expanding the types of crops that can be cultivated, and improving on the quality of crops grown. There will be two options on the type of pumping irrigation depending on the access condition to natural surface or subsurface water flows. The first option to be prioritized is the treadle pump, which uses human-power to lift water from a depth of seven meters or less. The pumping is activated by stepping up and down on a treadle, which drives pistons, creating cylinder suction that draws groundwater to the surface. It can lift five to seven cubic meters of water per hour from wells and can also be used to draw water from lakes and rivers. Because it needs no fossil fuel or electricity (it is driven by the operator's body weight and leg muscles), the maintenance cost is much cheaper (50% less) than any other pump options. The second option is solar powered pump, which is a pump running on electricity generated by photovoltaic panels or the thermal energy available from collected sunlight as opposed to grid electricity or diesel run water pumps. The operation of solar powered pumps is more economical mainly due to the lower operation and maintenance costs and has less environmental impact compared to diesel engine operation. Solar panel technology is already commonly used in Lombok Island mostly for street lighting and rural household electricity. Technology providers are available locally due to strong policy support from the national government on energy diversification and renewable energy. Lombok Island has sufficient sunlight along the year which makes this technology become feasible for implementation. This option will be selected based on the volume of water and pressure needed, and only in those locations where treadle pump cannot be operated due to insufficient power to lift the water. The utilization of the pump will be limited to dry season only based on the agreement with the village water user groups.

Tube wells: A tube well is a type of water well in which a long 100–200 mm (5 to 8 inch) wide stainless steel tube or pipe is bored into an underground aquifer. The lower end is fitted with a strainer, and a pump at the top lifts water for irrigation. The required depth of the well depends on the depth of the water. A small reservoir of water can be made at the outlet of the tube well. This reservoir can be used for different usage of water by the local population. The establishment of these tube wells will be interconnected with the pumping irrigation assets.

Irrigation channels: Irrigation is the artificial application of water to the land or soil. It is used to assist in the growing of agricultural crops, maintenance of landscapes, and revegetation of disturbed soils in dry areas and during periods of inadequate rainfall. Additionally, irrigation also has a few other uses in crop production, which include suppressing weed growing in agriculture fields and helping in preventing soil consolidation. The establishment of this asset type will be located and integrated in check dam sites, tube wells, and water harvest and storage ponds to create optimum results.

Biopores: Biopores are one of eco-drainage technology. Biopores use a small pit (diameters of 20 cm) in the surface with hole (3 meters deep) to trap the water so it can be a source of ground water reserves. Biopores utilization have been widely applied in urban and rural areas, this because in addition to its benefits in the drainage system, it also does not require expensive costs and could maximize community participation in the project.

Water harvest and storage ponds: water harvesting, the capture and storage of rainwater for use during dry periods, is a technology proven to increase food security in drought prone areas such as in Lombok Island. Erosion control and groundwater recharge are additional advantages of water harvesting techniques, which contribute to agricultural development and resource conservation. They are relatively small in size and thus fit well within farmers' land holding size. The ponds can be filled with small amounts of rain water (approximately with 5,000m3 capacity). In addition, these ponds can save women and children from walking for miles to find, collect, and carry water for domestic use. Water harvest and storage ponds can also provide an additional source of income for community by supporting activities like fish rearing and growing vegetables.

Check dams: Check dams are oftenly used to divert water for irrigation, control and stabilize water flow, and control floods. Occasionally, they are used to divert water to another drainage or reservoir to increase flow there and improve water use in that particular area. They also reduce erosion and allow sediments and pollutants to settle. A check dam is a small dam which can be either temporary or permanent, built across a minor channel, swale, bioswale, or drainage ditch. Check dams under this output will be installed as permanent dams with concrete materials mainly stone, sand, and cement, with water storage capacity up to 25,000m3 per 1 unit dam in average.

Agroforestry: Agroforestry is an integrated approach of using the interactive benefits from combining trees and shrubs with crops. It combines agricultural and forestry technologies to create more diverse, productive, profitable, healthy, and sustainable land-use systems. The efficiency of photosynthesis drops off with increasing light intensity, and the rate of photosynthesis hardly increases once the light intensity is over about one tenth that of direct overhead sun. This means that plants under trees can still grow well even though they get less light. By having more than one level of vegetation, it is possible to get more photosynthesis than with a single layer. Agroforestry has a lot in common with intercropping. Both have two or more plant species (such as nitrogen-fixing plants) in close interaction, both provide multiple outputs, as a consequence, higher overall yields and, because a single application or input is shared, costs are reduced, and therefore increase the cost effectiveness for this project. Based on the preliminary consultations with the community, several options on trees and crops species have been identified for prioritization, e.g. fruit trees (cashew nuts, jackfruit, durians, mango, guava), legume trees, combined with food crops (chili,

tomato, corn, peanut, and pineapple). These options were selected by considering the suitability of land, soil condition, rainfall intensity, access to market, and the stability level of the commodity prize.

Reforestation and aforestation: Reforestation and aforestation both refer to establishment of trees on non-treed land. Reforestation refers to establishment of forest on land that had recent tree cover, whereas aforestation refers to land that has been without forest for much longer. The reforestation and afforestation activities will be conducted through community-based forest management (CBFM) approach, which is an evolving branch of forestry whereby the local community plays a significant role in forest management and land use decision making by themselves in the facilitating support of government as well as change agents. Community could generate income from small timber and non-timber forest products as forms of goods while in other hand regulating ecosystem, downstream settlements benefits from watershed conservation, carbon sequestration and aesthetic values as in forms of services. Based on the preliminary consultations with community in 6 villages and previous experiences from Food for Asset (FFA) Programme in Lombok Island, several types of trees have been identified as priority e.g. mahogany, gmelina, acacia, legume, and fruit trees (jackfruit, durians, cashew nuts). To ensure proper harvest mechanisms are compliance with environment and social standards, a village conservation agreement will be enforced.

The project will assist the establishment of 'water user groups' to seek possibility of collecting user fees for the operation and maintenance cost of the assets, to ensure longer term sustainability of the assets created. Previous experience from the FFA programme shows that water users (mostly farmers) are willlling to pay for asset maintenance because they generate significant additional income from the rice harvest which has increased from 1 time a year to 2 - 3 times a year as a direct impact of the asset creation.

The asset establishment under this output will use simple technologies, community-friendly structures which use locally available materials and will be implemented by communities according to their needs. This to ensure cost-effectiveness of the adaptation activities and strengthen the ownership from the community to maintain the assets in longer term.

Specific activities under Output 2.3 include:

Field/community adaptation activities:

1. Community-based agroforestry and adoption of soil conservation techniques for enhanced resilience to droughts and floods by farmer communities, including techniques to increase the water holding capacity of drought prone soils, to increase the soil nutrient status (e.g. organic (and chemical) fertilizer usage hedgerows, contour drains, bunds), and to reduce the risk of erosion in flood prone areas. The activities will be conducted in both private and communal lands. Assets will include:
    - 1100 agroforestry plots in 17 villages. Each plot will approximatey cover 0.5 hectare.
2. Construction of new community water reservoirs and related essential infrastructure in cooperation with communities, NGOs, CBOs, and local government partners (Food Security

Office, Agriculture Office, Public Works Office) for enhanced water security in areas with high vulnerability to water insecurity. Assets will include:

- 60 units of small scale pumping irrigation.
- 60 units of tube wells.
- 20,000 units of biopores.
- 21 km of irrigation channels including pipes and feeder roads.
- 11 units of check dams (each dam has capacity to store water of approximately 25,000 m^3).
- 20 units of water harvest and storage ponds (each pond has capacity to store water of approximately 5,000 m3).

3. Reforestation/ aforestation which involves tree planting, terracing and maintenance of these plants to protect catchments for drinking and irrigation water in upper catchment areas/ forest buffer zones to reduce forest encroachment, and to conserve soil and water in lower areas. The activities will be conducted in cooperation with the Forestry and Agriculture Office, communities, including NGOs, and CBOs, using the community-based forest management (CBFM) system. Assets will include:
    - Reforestation and aforestation, including enrichment planting covering 520 hectares of land in the upper catchment areas of Dodokan which also become a buffer zone of Rinjani National Park in Central Lombok.
    - Reforestation and aforestation covering 1,214 hectares of the most degraded land area and along the check dam developed within lower areas of Dodokan.
    - Establishment of 17 nursery centers. These centers will be managed by women's group selected from each community. They will be responsible for site preparation, plant selection, and weeding.

<u>Capacity development activities:</u>

4. Advocacy and training for behavioral change and PES scheme.
5. Supporting the establishment and enforcement of village conservation agreements, which also function as community-driven forest protection, including its monitoring and reporting mechanism.
6. Establishment of 'water user groups' that will develop and implement management plans for the water resources that the communities rely on.

B. *Describe how the project / program provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and groups within communities, including gender considerations*

Dodokan watershed plays an important role for the livelihood of the people in and surrounding the watershed. Due to rapid degradation of the watershed, its buffer capacity against extreme climate events decreased. Increasing drought and flood problems have resulted. Crop failures due to the hazards have been significant and have caused hunger, malnutrition and poor health. Climate change is expected to increase and intensify the occurrence of extreme climate events over the coming years and decades. Although climate change affects everyone regardless of class, race, age or gender, its impacts are heavier on poor people and rain-dependent farming families in the area.

Gender inequality in rural areas of Indonesia means women are disadvantaged. They have less access to information, training, and credit, and women-headed households lack sufficient labor power (UNICEF, 2011). On the other hand, women carry out about 75% of the farm work in rice production and provide 40% of household food supplies from vegetable gardens. The growing number and severity of disasters triggered by climate change will further increase the burden on women and communities that are already vulnerable at present. Frequent crop failure will seriously affect their livelihoods. Women and children may be forced to contribute ever more to household income, without being released from their domestic responsibilities. Education and health outcomes for children will be affected negatively. Assistance is clearly needed to build their resilience to the impact of climate change while attempting to change prevailing gender inequalities at the same time.

This project will ensure to address the development priorities for livelihoods, targeting the disadvantaged and most vulnerable communities. The project strategy has taken into account the physical and economic vulnerability of rain-dependent farm families. In order to prioritize and direct resources to where they are the most needed, a number of data sources have been analyzed:

- the NTB Food Security and Vulnerability Atlas (Figure 7);
- the village level food security atlas of Central Lombok District (Annex 7);
- the risk level of harvest failure due to extreme climate events map from the study of Ministry of Environment/GIZ (Figure 12);
- the erosion risk level and degraded land areas (Annex 8)

As a result, 17 villages have been identified to be the most vulnerable to climate risks and will be prioritized for receiving support. These villages stretch from the up- to the downstream of Dodokan watershed. The level of priority has been staged into three levels based on their risks (See Annex 9 for the matrix analysis). The final decision on target areas will be conducted through Component 1 activities (outputs 1.1, 1.2, and 1.3) during the first year. Details of targeted villages and direct beneficiaries with gender disaggregated data are presented in the following table:

No	Target Location (village)	Number of Households (HH)*	Population*	Male*	Female*
Praya Barat Daya Sub District					
1	Montong Ajan	1,705	4,701	2,319	2,382
2	Montong Sapah	1,247	3,372	1,573	1,799
3	Serage	901	2,091	1,482	609
Pujut Sub District					
4	Prabu	1,266	3,810	1,851	1,959
Batukliang Sub District					
5	Aik Dareq	2,321	9,292	4,383	4,909
Batukliang Utara Sub District					
6	Aik Bukak	2,413	7,421	3,519	3,902
Praya Barat Sub District					
7	Banyu Urip	1,567	4,733	2,312	2,421

8	Kateng	2,129	7,138	3,441	3,697
9	Mangkung	3,679	10,931	5,268	5,663
10	Selong Belanak	1,693	4,418	2,226	2,192
11	Mekar Sari	1,590	4,766	2,374	2,392
12	Penujak	3,441	10,943	5,378	5,565
Praya Sub District					
13	Jago	2,561	8,666	4,185	4,481
Jerowaru Sub District					
14	Batunampar	456	1,824	846	978
15	Sekaroh	922	3,688	1,784	1,904
Kopang Sub District					
16	Dasan Waru	3,555	9,055	4,060	4,995
Janapria Sub District					
17	Pendem	2,153	6,760	3,281	3,479
TOTAL		**33,599**	**103,609**	**50,282**	**53,327**
Targeted Direct Beneficiaries of the Project (54% of the TOTAL)		**18,000**	**53,877**	**27,152**	**28,797**

*Source: NTB Statistical Data 2013

The project aims to address two main factors which cause increased vulnerability of the agricultural system and food security to climate variability and climate change. The first is a combination of inadequate policies and lack of capacity of local government to cope with climate variability and climate change, which results in a limited number of often insufficient or inadequate programs. The second is the low capacity of communities to manage climate risk, and lack of knowledge which often leads them to unsustainable farming practices and causes further damage to the environment.

In order to address both factors and achieve optimal outcomes, the project activities will be structured under two main components. Outcomes of component 1 will improve the capacity of local government and communities to manage climate risk and further address land degradation and deforestation in the area. This component will strive to address the policy and programmatic gaps, and to develop and implement integrated watershed management involving all concerned stakeholders with strong community participation and ownership. Through this approach, activities implemented to produce outputs within Component 1 of the project will then deliver a number of substantive **social benefits** such as:

1. Reduced food insecurity status by at least 1 level in 17 villages, using standard methodology of WFP and Food Security Agency;
2. Active participation of women to contribute in decision making process and community work by at least 50%;
3. Improved livelihood behavior based on climate risk information and local adaptation plans produced by the project by at least 90% of rural households in targeted villages (around 16,200 households);
4. At least 75% of knowledge products on local adaptation plans, climate change assessment in micro level, master plan of Dodokan, and climate early warning information, produced

by the project, utilized by both local and national governments to adjust their development planning strategy;

5. Increased capacities at all levels of the project to protect and manage natural assets;
6. Increased capacity to cope with climate variability;
7. At least 90% of rural households in targeted villages, equivalent to 16,200 households, received early warning information in timely manner;
8. Community empowerment through information, participatory planning and risk mapping;
9. Established knowledge management activities and risk assessment at community level which can give rise to number of adaptation initiative actions in communities and households (water conservation, food storage, seed preservation), by at least 17 local adaptation plans and village conservation agreements.

Outcomes of component 2 will seek to build resilient livelihoods of vulnerable groups in the face of more unpredictable and damaging weather patterns, and to develop alternative livelihoods to assist Government's broader efforts to address underlying drivers of land degradation and vulnerability to food insecurity and climate change. Outputs from this component will create **direct incomes** during lean season to 18,000 rural households (equivalent to 53,877 people) from labour opportunities. Each household representative will receive 5 USD/ day (following the NTB regulation on minimum wage) for their labour contribution in developing climate-resilient agriculture, post-harvest, soil and water conservation, check dams, agroforestry, and reforestation/ afforestation activities. Identification of households will be facilitated through outputs 1.2.

The establishment of assets under Component 2 will become communal assets. This means the total of 103,609 people (33,599 households) from the targeted 17 villages will also directly benefited from those assets. Thus, implementation of activities aimed to produce outputs in Component 2, will result in many other **economic benefits**, namely:

1. Increased cropping intensity and an increase in the percentage of irrigated land, resulting in increased production:
   - 1484 hectares of agriculture land will be cultivated by using tolerant crops species and varieties, utilizing climate early warning information system.
   - 60 tube wells and 60 small scale pumping irrigation will also be created to irrigate rainfed agriculture areas which are not accessible by the normal irrigation channels due to topography problem.
   - The project will also establish 11 check dams, 20 water harvest and storage ponds, with 21 km irrigation channels. It is estimated that these assets could irrigate more than 1,415 hectares of rainfed agriculture. These assets will increase the harvest period from 1 time/ year to 2-3 times/ year, creating double income opportunity for farmers.
2. Increased income from alternative livelihoods through community-based agroforestry, and reforestation/afforestation activities:
   - 520 hectares degraded land in the upper catchment will be reforested/ afforested, together with another 1,214 hectares of the most degraded land within lower areas of Dodokan watershed.
3. Reduced production and post-harvest losses due to extreme climate events:
   - The project will establish 17 commodity collection points (CCP), including post-harvest handling equipment, food processing equipment, food quality & safety assurance

equipment in 17 targeted villages. Based on preliminary estimation, these assets will reduce post-harvest loss at least by 50% and thus increase income opportunity of farmers.

Taken together, both implementation of policies and activities under component 1 and 2 of the project will have a positive impact:

- on all households (through community-based agroforestry development);
- upper catchment (forest protection and conservation and rehabilitation of degraded areas through afforestation and reforestation) and;
- downstream (stream bank protection, water conservation, improved irrigation facilities).

Thus, project interventions will improve the ability of the ecosystem to be more resilient despite increased climatic variation, to better sustain people's livelihoods, and to deliver a number of specific **environmental benefits** that include:

1. Restoration of ecosystem integrity, provision of goods, improved micro-climate, improved soil structure, increased biodiversity and improved quality and availability of ground water through the rehabilitation of degraded areas, forest protection and conservation and agroforestry. More than 1,734 hectares of degraded land will be reforested/afforested, and another 550 hectares of agroforestry will be created.
2. Reduction of erosion, sedimentation and siltation of riverbanks and village reservoirs through the improvement of soil management techniques (hedgerows, contour drains, bunds) at household and settlement levels.
3. Water conservation, stream bank protection, and improved water management and irrigation water efficiency by at least 80% through construction of hill-top ponds, community ponds, irrigation channels and check dams. In combination with the activities under output 2.1, the above environmental benefit can also be expected to increase yields in the longer term.

The project may not be sufficient to fully halt climate change or reverse all the degradation that has resulted from it and from other drivers, but it will give local government, civil society and communities the tools and knowledge to produce those results over a longer time frame. It is expected that local actors will be fully empowered at the end of four year project duration to continue the work without significant additional external funding and with a more limited technical support. Knowledge and experience delivered from the Component 2 will create added value and adopted into the existing government program and policies, thus it will create multiplier effects in a wider areas.

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

Project implementation costs will cover activities required to address climate change-induced risks as well as the underlying drivers that have caused the degradation of land and increased the vulnerability of the community to climate change in the first place. Key characteristics of the project will considerably enhance its cost-effectiveness:

1) The menu of highly replicable, development-oriented solutions to climate variability that ensures value for money;
2) A strategy that makes the most of existing government extension services and administrative platforms by complementing and supporting their activities/objectives;
3) Implementing natural resource management and livelihood asset building activities with community participation to ensure high levels of ownership and sustainability;
4) A strategy that avoids duplication by linking with key agencies;
5) A delivery mechanism that ensures cost-effective implementation;
6) Implementation which promotes mainstreaming in local and national policy (Figure 14);
7) The use of locally available competencies and skills;

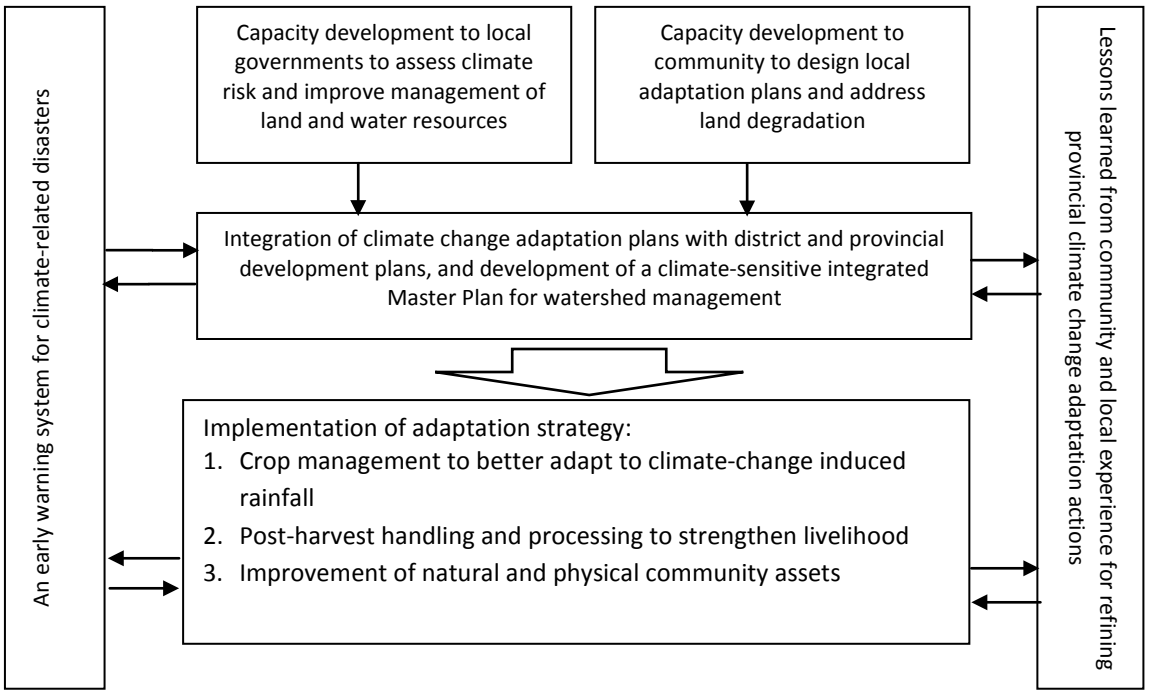


Figure 14. Approach in the implementation of project activities to ensure cost effectiveness

The effectiveness of the concrete adaptation measures put in place by the project will be tested and measured over the life of the project. This will involve cost-benefit analyses to ascertain which activities provide economically viable options for scaling up to neighbouring communities.

While the project aims to influence and support policy and strategy development at the Dodokan watershed level, its planning processes and lessons learnt will provide valuable input to district-level and provincial adaptation strategies and actions.

The project will influence provincial and district efforts on water management, food security and climate change adaptation, land tenure, reduction of land degradation and deforestation. It will create a blueprint of how to bring these together under a more coordinated policy and strategy framework.

The project design is grounded in the need to support the National Action Plan on Climate Change and the NTB Action Plan on Food Security under a Changing Climate. These constitute the overarching framework of all related sectoral programs and policies and provide vehicles for mainstreaming project findings, best practices, and lessons learned. Thus there will be no need for new policy-making under the project, which would require a longer project duration. As the project is built on and benefits from previous findings and lessons learned from activities by various stakeholders in NTB (Details are explained in chapter II.F), there is no need to start from scratch. Four years will give local government, civil society and communities the tools and knowledge to produce those results over a longer time frame. It is hoped local actors will be fully empowered at the end of four years to continue the work without significant additional external funding and with a more limited technical support.
The implementation of component 2 activities will be conducted at the end of the first year after most of the outputs of 1.1, 1.2, and 1.3 have been achieved. The results from the activities under component 1 will ensure component 2 activities are implemented with the right buy-in, technical and political support from the government and the community itself. This will increase the likelihood that investments in component 2 produce the desired return and it will also ensure sustainability as political and community leaders have had time to coalesce around the same vision and make it their own. Knowledge transfer and integration of project results into government programs will be conducted in parallel with the roll-out of community adaptation activities during the second and third years of the project. The overall causal link and synergies between outputs of this project are illustrated in Figure 14.

The adaptation options under the project were selected based on knowledge gained in the planning process that led to the formulation of the NTB Action Plan on Food Security under a Changing Climate, and also taking guidance from the National Action Plan on Climate Change Adaptation. Based on the vulnerability analysis matrix results in Dodokan watershed (Annex 9), the project has identified 1,786 hectares of agriculture areas which face the highest expose to climate change risk (in term of harvest failure) and 1,734 hectares of highly degraded forest which are located within the most food insecure village areas.

The adaptation actions under Component 2 will target these 'hot spot' areas covering 893 hectares of the rain-fed areas, 590 semi-irrigated areas, 520 hectares of the degraded forest in the upper catchment areas, and another 1,214 hectares within lower areas of Dodokan watershed, with 18,000 direct beneficiaries from the most vulnerable rural households. The project focuses on improvement of water management, small scale irrigation development, soil and fertilization management including organic fertilizer, and development of off-season livelihood opportunities through small-scale low-cost technological solutions. The project will establish demonstration pilots and train local technicians from communities who can participate in building, operating and maintaining those systems. Where functioning markets exist, the project will use cash-based support modalities to further increase cost efficiency.

In mid-2012, WFP finalized the cash/voucher transfer feasibility study in NTB for a possible alternative incentive (other than food commodities) to local communities for use in projects building resilience through asset development. The study showed that such non-food based modalities are not only feasible, but also more cost-efficient than providing an equivalent value transfer in the form

of food, given their additional benefit of stimulating the local economy. Based on this study's result, the project will use cash or vouchers as incentives for the community.

Community involvement in asset development will generate durable ownership. Community members will witness very real changes to their livelihoods and will understand how improved assets and practices drive those benefits. A thorough understanding of how communities are themselves able to generate those benefits and sustain them will be fostered throughout the trainings, but also through the participatory process of decision making and buy-in. Furthermore, different branches of district and provincial government will be trained on how they can ensure communities maintain changed behaviours so as to perpetuate the benefits. Embedding the activities in DEMAPAN will also make sure follow-up continues beyond the end of the project through regular government programmes.

The decision making process for implementing the adaptation activities at the community level will be conducted through Participatory Rural Appraisal (PRA) including interviews and focus group discussions. These will be based on and validate the vulnerability analysis which has been identified during the project design phase as well as adapt it to each specific community. The participatory approach is to ensure appropriateness, ownership and sustainability of the assets created for the future. A specific menu of the adaptation options will be derived from the result outputs of 1.1, 1.2, and 1.3., in line with the framework of NTB Action Plan on Food Security under Changing Climate document.

During project design, several alternative interventions have been considered and were rejected for a number of reasons. In NTB, several individual basins have surplus water resources even in areas that have reached advanced stages of development, while others face serious shortages, especially during extreme drought years. According to the Ministry of Environment/GIZ study, the watersheds of Putih and Jelateng will have water surpluses under all climate change scenarios until 2080. Improved storage capacity and inter-basin transfers of water from surplus (Putih and Jelateng) to deficit regions (Dodokan) could therefore have been an option for achieving more equitable distribution of water resources and optimal utilization of these resources. However, this option would not only be very expensive, but could also potentially draw down the surpluses of these watersheds quickly, thereby creating potential conflict between water users. Lift irrigation using pumps could also have been an alternative. This option was not considered feasible as many villages covered by the project do not have access to electricity and it would be costly for farmers to purchase fuel. Building larger water storage capacity was also an option, but in many catchments covered by the project water runoff is not sufficient even during the rainy season. And of course, building dams is highly expensive.

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

The Government of Indonesia ratified the United Nations Framework Convention on Climate Change (UNFCCC) on 23 August 1994 and submitted its first and second national communications to the UNFCCC in 1999 and 2011. The country ratified the Kyoto Protocol on 3 December 2004. To address impact of climate change and to further translate the national communications into its annual program of work, the Government recently developed the National Action Plan on Climate Change Mitigation (RAN GRK) and Climate Change Adaptation (RAN-API).

Many land-forest based mitigation actions in RAN/RAD GRK are also adaptation actions, including rehabilitation of degraded land in prioritized watersheds through community involvement, increasing water use efficiency in rice cultivation etc. Many of the activities under this project are in line with actions promoted under RAN GRK.

RAN-API is meant to reflect the preparedness of sectors in responding to climate change and anticipating threats through programs that are based on projection of future developments. RAN-API has become the framework for cross cutting and sectoral development plans. It captures and integrates strategic planning and policies on agriculture, forestry, food security, public works, health and fisheries, including the Master Plan for the Acceleration of Poverty Reduction, or MP3KI, and Master Plan for the Acceleration of Indonesian Economic Development, or MP3EI. Food security in NTB is a top priority in RAN-API. Specifically in this regard, RAN API aims to (i) develop farm enterprise systems that are climate resilient; (ii) develop and apply adaptive technology; and (iii) optimize the utilization of land, water and genetic resources. To ensure the sustainability of water supply and other environmental services for supporting agriculture and rural livelihoods, the RAN API action plan aims to (i) improve spatial planning and land use systems, (ii) manage and utilize productive areas in a sustainable manner, (iii) enhance management of conservation and essential ecosystem areas, (iv) rehabilitate degraded ecosystems, (v) reduce threats to ecosystems, and (vi) develop information systems. In addition, infrastructure required for supporting agriculture activities (irrigation, reservoirs etc.) will be rehabilitated and climate-proofed.

To address food insecurity of rural communities, the Government of Indonesia/ GoI, through its Food Security Agency (*Badan Ketahanan Pangan*/BKP), has implemented the National Food Resilient/Independent Villages (*Desa Mandiri Pangan*/ DEMAPAN) Programme, which aims to develop local-based productive activities, increase food availability, improve purchasing power, and increase food access of rural communities. The programme includes on-farm, off-farm and non-farm activities. The expected outcome of the programme is reduced food and nutrition vulnerability among rural communities, whilst the expected impact is that rural communities achieve resilience/independence in food and nutrition security. The implementation of the programme in each targeted village is gradual, covering a period of four years. There are four phases: preparation, growth, development and resilience/independence. Activities focus on community empowerment, development of a food security system, development of rural infrastructure facilities and strengthening of institutions.

The programme, which has been implemented since 2006, targets those villages which are most vulnerable to food insecurity. Up to the end of 2012, up to 3,414 villages in 410 districts with a total of more than 369,750 poor households were selected as the target area of DEMAPAN, of which a proportion has already reached the 'food resilience phase'. Within 7 years, the GoI already spent more than USD 25 million from the National Revenues and Expenditures Budget (Anggaran

Pendapatan dan Belanja Nasional/APBN) on DEMAPAN programme implementation. Each targeted village receives an IDR100 million cash grant.

NTB Province and, within that, Lombok Tengah District, are amongst the priority areas receiving support from DEMAPAN. DEMAPAN is the biggest cash transfer programme in NTB, currently targeting 89 villages. In line with the Medium-term Regional Development Plan (*Rencana Pembangunan Jangka Menengah Daerah*/RPJMD) 2009-2013 for NTB Province, each village targeted under DEMAPAN received an IDR 100 million cash grant from the APBN OR an IDR50 million cash grant from the Regional Revenues and Expenditures Budget (*Anggaran Pendapatan dan Belanja Daerah*/APBD). The operational implementation of DEMAPAN is managed by the Food Security Office (*Kantor Ketahanan Pangan*/KKP) at District level[16]. Up to the end of 2012, 7 villages had been selected to receive the IDR 100 million cash grant under DEMAPAN in Lombok Tengah. Additional funding provided by APBD was IDR 25 million[17].

However, as expressed by the Food Security Office of Lombok Tengah, active community participation and support from other programmes and sectors is necessary in order for DEMAPAN to be successful. Therefore, efforts will be made to align the targeting of villages located in the Dodokan watershed in Lombok Tengah with the targeting by DEMAPAN in the same area. By incorporating activities aimed at securing livelihoods and food security against climate-change induced rainfall variability and extreme weather events into DEMAPAN, the costs effectiveness of the programme can be improved significantly and obstacles to realizing the expected outcome an impact can be overcome.

In line with national policies, NTB Province under the coordination of Food Security Office (BKP) has also developed a strategy and action plan for reducing food security vulnerability in the face of climate change. Proposed actions focus on the application of adaptive technologies, diversification of farming activities, improvement of land and water resource management, food diversification and improvement of irrigation infrastructure. This provincial strategy and action plan has been developed in accordance with the NTB Five Year Mid-term Development Plan. It is based on the integration of program planning between a number of sectors such as Forestry, Agriculture, Food Security, Meteorology, Small and Medium Enterprise and Public Works. NTB also has established a Special Coordination Climate Change Task Force to implement the action plans from each agency.[18] However, the Task Force is constrained by a lack of knowledge on climate change risk and on translating strategy and action plans into concrete interventions on the ground. There are no climate impact studies at the watershed scale and the Task Force is not well linked with local governments and their stakeholders.

[16] Information provided by BAPPEDA NTB Province during visit in October 2012.
[17] Information provided by KKP Lombok Tengah District during visit in October 2012.
[18] The climate change Task Force of NTB was formed through Governor Decree in early 2012. Chaired directly by the Governor and managed daily by the Head of the Food Security Office NTB with members constituting the heads of each related agency from agriculture, forestry, plantation, fishery and marine, industry and trade, transport, meteorology, logistics, and the provincial secretariat on economic and administration. The Task Force is mandated to prepare and review programs and actions related to food security and climate change, establish targets, timelines, and budgets, and monitor and evaluate progress.

Many of the activities proposed in this project are designed to align with, and support the national and provincial agendas above, especially with DEMAPAN and the national program for food-secure villages, which is managed by the Food Security Agency. They will mainstream the consideration of climate change risks to ensure their effectiveness and sustainability and strengthen the links between planning and action at local levels.

E. *Describe how the project / program meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc.*

Design, implementation and monitoring of project activities will involve technical agencies and/or their local representatives to ensure that project outputs meet relevant national technical standards in terms of design and execution. Project components and outputs will meet the technical standards prescribed in agriculture, land use and forestry, water resources and watershed management. In general, project activities will meet national standards as presented in the following table:

Activities	**Activities category**	**Applicable standards**	**Relevant agencies**
Integrated land and water resource management, including irrigation improvement	Land rehabilitation and Infrastructure development and maintenance Technical standards for building water infrastructure and maintenance	Ministry of Forestry standard on land rehabilitation and Ministry of Environment on environment safeguards	Ministry of Forestry and Ministry of Agriculture Ministry of Public Works Ministry of Environment
Design of climate information systems	Early warning systems	Seasonal forecasts are issued by the agency for climatology and meteorology Norms and standards on design and dissemination of early warning systems	National Agency for Meteorology, climatology and Geophysics Agency for Disaster Management
Monitoring the implementation of local adaptation measures and its impact on food vulnerability	Development of vulnerability index and monitoring system	WFP standards in food vulnerability assessment Ministry of Environment guidance of vulnerability assessment	Ministry of Agriculture Ministry of Environment

The Ministry of Environment has issued guidelines for implementation of the Environmental Impact Assessment/ EIA (known by its Indonesian acronym as "AMDAL – *Analisis Dampak Lingkungan*") process, including public consultations. The guidelines are set in the Minister Regulation No. 17/2012.

While most of the project activities will be focused on dedicatcommunity asset creation, these types of assets are generally small-scale structures that do not require detailed approvals such as EIA. However, as structures such as irrigation channels, check dams, water harvest and storage ponds, and reforestation/afforestation could create some impact on downstream communities and on the local ecology, the projects will produce EIA in line with the guidelines set by the Ministry of Environment above in close cooperation with and supervision by the **Environment Office of NTB Province**. Aspects in the IEA will include physical-chemical, ecology, socio-economic, socio-cultural and public health aspects, as a complement to the feasibility assessment elaborating possible impact and mitigation measures for each type of asset.

The communities that are included in the EIA process are (i) the community which is receiving the immediate benefit from the asset creation; (ii) the community which may be exposed to potential negative side effects from the asset creation; and (iii) other communities which may be affected by any form of decision made in the EIA process. The affected communities are included in the assessment process of the EIA through their appointed representative whos can be a member of the EIA Appraisal Committee. Following the guidelines, the project will conduct further in-depth community consultations at each targeted village to discuss detailed assets design and to ensure below objectives are fulfilled:

- the public gets information on the assets plan and design that may have a significant impact on the environment;
- the public can give suggestions, opinions or comments on the assets plan and design;
- the public can be involved in the process of the decision-making in relation to the worthiness or unworthiness of the assets planned and their design.

The EIA is planned to start by the end of the first year (quarter 4) upon the completion of outputs 1.1. and 1.2; before any substantial construction begins. In line with the environmental and social policy of the AF, an EIA timeline will be provided to the AF secretariat, which will be incorporated in the agreement between the AFB and the MIE following the project approval. In addition, WFP will keep informed the AF secretariat on the EIA developments and will provide a copy of the assessment to the Adaptation Fund Board once it is completed. Finally, the E&S management plan, M&E, public disclosure and consultation, and grievance mechanism will comply the Environmental and Social Policy of the Adaptation Fund.

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

Most climate-related initiatives in NTB were assessments and were not designed to concretely address the effects of climate change on food security. They include the following:

1. GIZ in cooperation with Ministry of Environment, WWF and Provincial Government of NTB Province (2008-2009): Vulnerability and Risk assessment on Climate Change in Lombok I (no pilot).
2. WWF (2007-2009): Policy advocacy to the provincial government in order to mainstream climate change into midterm development plan and coastal community awareness on climate risk in coastal area of North Lombok (simple qualitative method).
3. CSIRO (2010-2013): study on climate futures and rural livelihood adaptation strategies in Lombok and Sumbawa islands (no pilot).

4. KOICA in cooperation with Ministry of Forestry (2009-2013): Land rehabilitation and conservation project as part of REDD+ feasibility study and AR CDM in North Batukliang, Central Lombok District (part of upper zone of Dodokan watershed).
5. USAID (2010-2014): Indonesia Marine and Climate Support (IMACS). The project aims to strengthen the management capacity of the Ministry of Marine Affairs and Fisheries (MMAF) and local government, enhance local communities and private sector engagement through open and transparent governance, and provide technical support for key activities that support marine resources management and community empowerment.

The project is built on, and benefits from, the study on risk and adaptation to climate change conducted by the Ministry of Environment/GIZ/WWF in Lombok. The project also benefits from the analysis study conducted by CSIRO on climate futures and rural livelihood adaptation strategies in Lombok and Sumbawa islands. During the design process, all stakeholders including donor funded projects were consulted, in order to avoid any potential duplication of efforts, resources or geographical coverage, and to create synergy between ongoing initiatives.

The project will coordinate and share lessons learned with the ongoing KOICA-Ministry of Forestry on land rehabilitation and conservation project, to strengthen support to government's effort in reducing deforestation within and surrounding the project area. The project will also take appropriate lessons from the GEF project Adaptation to Climate Change through Effective Water Governance in other provinces such as SPARC in East Nusa Tenggara (NTT) Province.

The project incorporates findings and lessons learned from the WFP Food for Asset (FFA) Programme which was implemented jointly with the NTB and NTT Provincial and Districts Governments and local NGOs between 2009 and 2013 based on a cost sharing scheme. The program activities aimed to provide the most vulnerable households with work opportunities to produce small scale agricultural and rural infrastructure assets to sustain their livelihoods and food security. Within 3 years, more than 10,000 ha of degraded land areas were rehabilitated, and about 4 million trees planted. 42 units of water catchments, accommodating more than 229,000 cubic meters, and 11 km of irrigation channel system were developed, facilitating easier access to water for agricultural use and daily life. More than 14.5 km of agriculture access roads were also developed to connect farms to markets. Through these pilots, more than 240,000 food insecure people in NTT and NTB Provinces received food assistance, but many more are expected to have medium and longer term gains from the community assets created.

As some of the previous FFA Programmes were piloted within and surrounding the project area of Dodokan watershed in Central Lombok District, the results from these previous pilot activities are providing a valuable foundation for the project strategy, and strengthens the likelihood of the project's success. While there is no longer funding beyond 2013 for the FFA pilot activities, the support from the Adaptation Fund will be very crucial to create strong added value in scaling up the previous initiative to the level of the entire watershed, to provide adequate impact and multiplier effects in adapting to climate change, as well as reducing land degradation and deforestation in the area.

Previous WFP experiences in developing PES mechanisms between communities in the upper and lower watershed will also be used as a lesson learnt in improving the mechanism and further scaling up into wider water catchment area of Dodokan in Central Lombok.

Under the framework of RAN API and RAN GRK, the Ministry of Forestry has committed to a massive reforestation program of 1 billion trees per year with focus on Kalimantan, Sumatera, Java, NTB, NTT, and Papua.

As poverty and the lack of sustainable livelihood opportunities have been the main drivers of deforestation in the Dodokan watershed area, the NTB Forestry Agency is prioritizing a welfare approach by increasing the economic and livelihood opportunities through reforestation and community forest programs in conjunction with formal law enforcement for any illegal logging activities. Within the last five years, the NTB Forestry Agency has rehabilitated almost 50% of degraded land in NTB (223,000 ha out of total 507,000 ha), mostly in Dodokan, through these programs. By 2016, the Agency aims to rehabilitate all the remaining degraded land in NTB. In parallel, the ministries of Public Works and Agriculture have also prepared programs to revitalize and improve water management for irrigation across Lombok and Sumbawa Islands.

The proposed project will support these programs by improving government's and community capacity to adapt to climate change risks and by generating lessons on sustainable resource management.

There are also several initiatives from the community for small scale land conservation and spring protection in the upper zone of Dodokan watershed. Most of the initiatives are driven by a strong customary law and local wisdom (*awig-awig*) enforced by the village leader. The project will build on these types of initiatives and will strongly acknowledge them as an important avenue to achieve the project objectives, especially to address the land degradation and deforestation problems, in conjunction with the government's efforts to enforce the law.

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

The project will emphasize the collection, analysis and dissemination of lessons learnt and best practices. It is expected to generate lessons learnt that provide the government with the opportunity to review the approach and scale up successful activities.

The project has dedicated knowledge management outputs, especially targeting the dissemination of and scaling up of best practices, while also generating the opportunity for spontaneous and autonomous adaptation in communities with similar ecological and socio-economic conditions. A coherent knowledge management platform will be developed and a range of knowledge products (case studies, policy papers, and technical briefs and media reports) will be widely (and publicly) disseminated. Information and communication is also integral to technical outputs where the awareness of farmers and officials will be developed. The project will develop case studies on:

1. Micro level climate change risk assessment in the Dodokan watershed under different land use scenarios;

2. Feasibility assessment for the development of a micro-level climate risk insurance scheme as an input to the national program of 'Farmer Insurance' by the Ministry of Agriculture;
3. Training modules for developing local climate change adaptation plans;
4. 17 local climate change adaptation plans and village conservation agreements;
5. Dodokan watershed master plan by accommodating the results of micro level climate change risk assessment;
6. Climate early warning information system;
7. Impacts and results of adaptation activities on food security, livelihoods and income for target households; and
8. Feedback from field implementation to policy; testing out the strategies and actions listed out in the DEMAPAN program and the National Action Plan on Climate Change Adaptation.

These lessons and case studies will be disseminated within and beyond the project intervention through project-supported and existing information sharing networks and forums, including through:

- Public media articles in national both print and electronic media;
- Local media news in local language;
- Policy briefs for national, provincial, and district decision makers;
- Exchange visits from adjacent communities and government decision makers to promote replication potential and bring the adaptation focus into local development planning processes, especially village development plans;
- Training and short courses on climate change and sustainable watershed management for local community, NGOs, CBOs, and local government officers;
- 4 provincial stakeholder workshops;
- 3 national dissemination workshops.

The primary targets for dissemination of project results would be officials from national ministries (BKP, Bappenas, Ministry of Agriculture, Ministry of Environment, BMKG, Coordinating Ministry for people Welfare, and Ministry of Public Works), the Provincial Government of NTB, and Central Lombok District Government. While the implementation of concrete activities under Component 2 will directly benefiting 18,000 households in targeted villages, involvement of local NGOs/ CBOs which also work beyond the project sites and the arrangement of exchange visit from adjacent communities, including local media campaign, could facilitate smooth replication of project best practices to other places with similar vulnerability.

The Ministry of Environment has developed a program called Climate Village which seeks to encourage villages throughout Indonesia to share climate-related best practices with the Ministry of Environment (in return for a reward). This program will make an inventory of initiatives and good practices available to the project, and the proposed project's achievements will in turn be shared nationally.

The Food Security Agency (BKP) as the Executing Agency will, both at national and provincial level, take the lead in all activities related to monitoring, evaluation and knowledge management, with

support from WFP as the Multilateral Implementing Entity (MIE). Knowledge management activities will draw upon national actors and capabilities as well as NGOs and community organizations.

The project will also identify and participate, as relevant and appropriate, in scientific and policy-based networks, which may be of benefit to project implementation though knowledge transfers. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Finally, there will be a two-way flow of information between this and other related projects as described in Section II.F.

H. *Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations.*

The proposed project was conceived through initial consultations with BAPPENAS as the overall national coordinating agency. This was followed by consultations with key government institutions from the Food Security Agency and the Provincial Government of NTB, including BAPPEDA, BMKG, Food Security Office, Agriculture Office, Public Works Office and Forestry Office. In total, there were more than 28 consultation meetings. In addition, 7 Farmer Group meetings were held in 4 villages between 2012 and 2013. A summary of the consultative process is provided in the table below. Detailed community consultations results are presented in Annex 9.

Consultation	**Date / Place**	**Participants**	**Objective**
Initial consultation with the Indonesia Climate Change Trust Fund (ICCTF), National Development Planning Agency (BAPPENAS)	2012, Jakarta	Head of ICCTF Secretariat and staff	Expressed WFP intention of developing a proposal for Adaptation Fund Board and preliminary discussion on the project concept
Meeting with Ministry of Environment (MoE)	2 May 2012, Jakarta	Deputy Assistant for Climate Change Adaptation and staff	Discussion on the project concept
Consultation with the National Designated Authority for the Adaptation Fund	3 May 2012, Jakarta	Indonesia Designated Authority and staff	Discussion on the project concept. The Designated Authority agreed to develop a proposal
Meeting with Head of Provincial development Planning Agency (BAPPEDA) of NTB	2012, Mataram, NTB	Head of BAPPEDA NTB and staff	Discussion on the project concept and brainstorming on local government development priorities.
Meeting with Head of Food Security Office (BKP) of NTB	2012, Mataram, NTB	Head of BKP NTB and staff	Discussion on the project concept and brainstorming on local government development priorities, including food security and climate change threats in NTB and the importance of local community engagement
Meeting with the Research and Development Agency, Ministry of Agriculture	7 May 2012, Jakarta	Director General for Research and Development Agency and staff	Discussion on possible local adaptation approaches by communities.

Consultation	Date / Place	Participants	Objective
National stakeholder workshop with key agencies	8 May 2012, Jakarta	Participants from BAPPENAS, MOE, Ministry of Agriculture, Food Security Agency, Advisor to the President, BAPPEDA NTB, and other governments agencies, NGOs, and universities	Concept was discussed and opinion and inputs from participants were obtained
Consultation with MOE	13 July 2012, Jakarta	Deputy Assistant for Climate Change Adaptation and staff	Further brainstorming on project concept and climate change adaptation measures
Meeting with Chairman of the Advisory Council to the President	13 September 2012, Jakarta	Chairman of the Advisory Council to the President	Discussion on food security and climate change threats and potential adaptation approach.
Site visit with the Head of Food Security Agency (BKP) Ministry of Agriculture	3 October 2012, Central Lombok, NTB	Head of Food Security Agency and Head of Food Availability and Vulnerability Centre	Discussion on lessons learnt, potential activities and locations for climate change adaptation to strengthen food security in NTB Province
Community consultation with farmers in Bangket Parak village, Pujut sub district of Central Lombok District	17 October 2012, Central Lombok, NTB	Farmers Groups from Bangket Parak, Pengengat, Tanah Beak, and Loang Maka Villages	Discussion on food security-related adaptation needs and potential actions at community level.
Provincial stakeholder workshop of key provincial and districts stakeholders	18 October 2012, Mataram, NTB	Participants from BAPPEDA NTB, BKP NTB, BAPPENAS, MOE, Coordinating Ministry for People's Welfare, representatives from districts governments in NTB, NGOs, universities	Discussion on the proposal and integration into local government planning.
Meeting with the Food Security Agency (BKP) Ministry of Agriculture	7 November 2012, Jakarta	Head of Food Security Agency and staff	Discussion on food security and climate change issues, including current and future government programs to be further elaborated into the proposal, including potential to align the AF concept proposal with DEMAPAN (Food Resilience Village) program.
Focus group discussions with farmers in 3 sub districts - Janapria, Terara, Jerowaru (in 4 villages) of Central Lombok District	2012, Central Lombok, NTB	Farmers Groups from Loang Maka, Lando, Leming, and Sekaroh Villages	Understanding of livelihood types in the village, coping strategies, past experiences and observations on climate, access to and understanding of climate information, main drivers of change in the village in terms of livelihood, adaptive capacity, etc.
Meeting with ICCTF BAPPENAS	23 November 2012, Jakarta	ICCTF Program Manager and staff	Discussion on the progress of the adaptation fund concept proposal.

Consultation	Date / Place	Participants	Objective
Meeting with climate change expert from Bogor Agriculture Institute	Mid-December 2012, Jakarta	Director of CCROM	Discussion on climate change vulnerability assessment and the adaptation approach
Presentation of project design to ICCTF BAPPENAS	Mid-December 2012, Jakarta	Head of ICCTF and staff	Full presentation of project concept proposal for inputs and review.
Meeting with the Indonesia Designated Authority for Adaptation Fund	19 April 2013	Chairman of DNPI (Designated Authority) and staff	Full presentation of project concept proposal for inputs, review and endorsement.
Meeting and site visit with the Vice Minister Bappenas in NTB	27 May 2013	Vice Minister Bappenas, Vice Governor NTB, Head of Bappeda NTB, Head of Food Security Office NTB	Discussion on potential activities and locations for climate change adaptation in NTB Province
National stakeholder meeting with key government agencies	2 September 2013	Participants from DNPI, Ministry of Agriculture, Bappenas, Ministry of Marine and Fishery, Ministry of Environment, Coordinating Ministry for People's Welfare	Full presentation of the revised project concept proposal for inputs and review
Meeting with BKP NTB	11 November 2013	Head of Food Availability Unit and staff	In depth consultation on the 2014 workplan
Meeting with Environment Office (BLH) NTB	11 November 2013	Head of Program & reporting and staff	In depth consultation on the 2014 workplan
Meeting with Forestry Office NTB	11 November 2013	Head of Rehabilitation and Forest Conservation Unit	In depth consultation on the 2014 workplan
Meeting with Bappeda NTB	11 November 2013	Head of Spatial Planning and Natural Resources	In depth consultation on the provincial climate change adaptation actions (RAD GRK) and 2014 workplan
Meeting with BP DAS (Watershed Management Agency) NTB	18 November 2013	Head of Program Section	In depth consultation on the 2014 workplan
District and villages stakeholder meeting in NTB	19 December 2013	Representatives from BKP NTB, Agriculture Office, Forestry Office, BPMD, Public Works, Bappeda, LPSDN, farmer groups from Karang Sidemen, Kabul, Batu Jangkih, Montong Ajan, Janapria, Aik Bukak villages.	In depth discussion on the lessons learnt from the previous WFP-NTB Government cooperation on Food for Asset / FFA Programme (what went well and what not went well) and recommendations for the future cooperation to be accommodated into the proposal

Consultation	Date / Place	Participants	Objective
Meeting with Bappeda NTB	20 December 2013	Head of Agriculture and Marines	Follow up consultation on 2014 NTB Government work plan
Meeting with the Food Security Agency (BKP)	24 December 2013	Head of BKP and staff	In depth discussion to update the AF proposal progress, implementation arrangement, project management structure, and further alignment with DEMAPAN (Food Resilience Village) Program

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

Component 1: Improving knowledge and institutional capacity of local governments to reduce climate risks associated with rainfall variability and their impact on community livelihoods and food security

Baseline without Adaptation Fund Support

High poverty rates and the lack of alternative livelihood options have depleted the forest and natural resources of the Dodokan watershed. Under the national decentralized governance system, management of the watershed is also fragmented and actions are uncoordinated. Furthermore, there is no common vision among local governments and other stakeholders in and surrounding the watershed on how to manage it in an integrated manner, and certainly not in ways that can allow the environment and people to withstand more unpredictable and severe weather.

Without the interventions proposed by this project, current unsustainable management of the watershed would continue and be exacerbated by climate events. This in turn would lead to more environmental degradation and greater poverty and food insecurity, thereby creating a self-reinforcing vicious cycle.

National and some local governments are already aware of the importance of improving coordination and reaping synergies from programs for addressing climate change. The National Agency for Development Planning (BAPPENAS) has established a National Coordination Team on Climate Change to coordinate the various sectoral ministries which implement climate change action plans. Some local governments have established similar bodies. For example the Government of NTT Province has established a coordination unit called SPADU overseeing all official development assistance projects and working with development partners to ensure coordination and alignment. In the case of NTB, the government and some district governments such as Central Lombok have established a Climate Task Force with a similar mandate focused on climate change. The Task Force consists of representatives from the offices of agriculture, forestry, food security, public works, fisheries, small and medium enterprise, industry and trade, logistics and meteorology. However the Task Force is constrained by a lack of knowledge in developing a strategy and action plans for climate adaptation, and translating these into concrete actions on the ground.

The Government of Indonesia, through its Food Security Agency, also has implemented the DEMAPAN Programme, which aims to develop local-based productive activities, increase food availability, improve purchasing power, and increase food access of rural communities. Yet, the current programme is not accommodating any climate risk as part of the strategy for targeting and intervention.

Without this project, it is unlikely that provincial and district governments will gain an understanding of the impact of climate variability and climate change locally, and the options available and desired by local stakeholders to mitigate climate threats. The effectiveness of the DEMAPAN programme implementation will remain limited as the program does not incorporate the risk and reality of climate change.

With Adaptation Fund Support (Adaptation Alternative)

Adaptation Fund resources will be used to support local, provincial and district level governments, along with community stakeholders (including user groups), to develop local plans as well as a master plan for the Dodokan watershed which takes land use change and climate change scenarios and current and expected future impacts into account.

The proposed project will enhance the capacity of entities at provincial and district levels to assess the financial implications of projected land use changes and climate change impact, and to carry out cost-benefit analysis of adaptation options. It will also strengthen law enforcement to avoid further illegal activities. These entities include the Food Security Office, BAPPEDA, Agriculture Office, Forestry Office, Public Works, Watershed Management Office, NTB Task Force.

Community adaptation plans will be developed in a participatory way, ensuring that resulting actions are based on the needs and ideas of the communities themselves, so as to provide tangible and lasting results. Communities will largely be self-selected for their commitment as well as their capacity. The plans will be complemented by the establishment of village conservation agreements which function as a community forest protection mechanism. The customary law and local wisdom (*awig-awig*) available in the community will be recognized in the agreements as an important lever which needs to be capitalized on to address the land degradation and deforestation problems and to enforce the implementation of adaptation actions and their monitoring and evaluation. This will increase the buy-in communities take into the planned activities, as communities will see them as combining innovation with a return to good, traditional customs which have fallen in disrepair.

A network of community volunteers will be established, and climate risk information will be made available to communities. This will build on baseline local development programs.

Training for agricultural technical teams on climate risk management for agriculture will improve their ability to provide advice to village level extension officers and farmers to cope with rainfall variability. The project will also provide these teams with IT equipment and tools to interpret and analyze climate information and hazard data and to access other related information in supporting agribusiness activities. Farmer organizations will also be supported to engage in collective planning of irrigation maintenance including catchment conservation.

Capacity at all levels to design and prioritize relevant adaptation plans and to effectively allocate climate-related budgets will also be improved. Communication of relevant information on climate variability and climate change impact and adaptation options will be facilitated. Tools required for decision making to develop the master plan toward watershed resilience in conjunction with land use management will be made available. In summary, climate variability and vulnerability will be properly addressed in the management of the Dodokan watershed, and adapting to climate change will become part of the overall development agenda of NTB.

The project activities will also be supported by cost sharing arrangements with the Executing Entity and other government partners to strengthen results. Activities under this project will be integrated into the DEMAPAN programme, which is managed by the Food Security Agency. Thus it will increase the ownership and ensure the sustainability of the activities over the long term.

Component 2: Securing livelihoods and the food security of up to 18,000 rain-dependent farmer households, living in the up- and downstream areas of Dodokan watershed in Central Lombok District, against climate change-induced rainfall variability and extreme weather events such as droughts and floods

Baseline without Adaptation Fund Support

Without the proposed interventions in Component 2 of the project, the government and development partners will continue to make major investments in community development without properly empowering beneficiaries to take climate change into account. As a result, the longer term sustainability and value for money of baseline interventions will be less effective and efficient. Farming households will continue to engage in unsustainable practices such as cutting wood in high value forest areas, clearing and cultivating stream-banks and reservoir catchments and short-term cash cropping on steep slopes.

Without the interventions proposed here, these farm families will continue to face degraded environments and reduced livelihoods. They will face an even more dire situation once the impact of future climate change is accounted for. Increasing climate variability has increased food insecurity of the communities in the watershed. Shifting rainfall patterns have especially impacted traditional rain-fed farming practices. Longer periods of seasonal drought and an increase in intense rainfall is eroding soil and contributing to more frequent crop failures.

The capacity of communities and field level technical teams to respond to these developments is weak. Currently there is a rather vague interpretation of climate science at local level and climate risk screening is not a part of the normal development process. Agricultural extension services do not provide comprehensive service delivery in the field, much less do they advise farmers on tackling rainfall variability caused by climate change. Farmer organizations also lack knowledge and awareness of climate-related risks, technical knowledge for maintaining small-scale agriculture and irrigation structures and the knowledge and means to develop alternative plans.

Finally, provincial and district authorities have little concrete implementation experience of how to design and implement replicable, and appropriately informed (by science and local experience) and costed adaptation alternatives.

With Adaptation Fund Support (Adaptation Alternative)

Adaptation Fund resources will be invested in communities (involving about 18,000 households) to apply 'no-regret' adaptation actions and adaptive technology based on the specific vulnerabilities and opportunities they have identified. Intensive facilitation at the community level will take place and special attention will be given to the needs of women, ensuring their active participation throughout the process. Carefully guided demonstration actions to increase climate resilience of these communities will showcase the effectiveness that will then provide scope for replication to the rest of NTB.

Non-government entities, including community service organizations and private sector firms, will be invited to play a key role in implementation through a competitive process. Much of the work requires close interaction with communities. Community service organizations are well-positioned to perform this work.

Project interventions will enable farmers to increase cropping intensity and crop productivity through adoption of new technologies (drought-tolerant and short maturing cultivars etc.). Through cash/ voucher for work schemes, farmers will have opportunities to produce small scale agricultural and rural infrastructure assets that benefit their communities. The assets will be designed to strengthen resilience to withstand anticipated shocks, and sustain livelihoods and food security.

The promotion of agroforestry (fruit, timber and other perennials) through afforestation/ reforestation in upstream degraded/ deforested land areas of Dodokan watershed will generate additional income for farm families while simultaneously reducing the pressure on forests, increasing the catchment area capacity and improving water availability and quality.

Through the establishment and implementation of village conservation agreements which also function as a community forest safeguarding mechanism designed under Component 1, the monitoring and evaluation of the adaptation activities and the protection of land and forest areas will be enforced, creating a self-police mechanism by the community for the community.

At the end of the project farming households dependent on rainfall for agricultural production will show demonstrable improvement in food consumption patterns. They will also have access to information, and seeds and extension services to improve current cultivation practices and to cope with extreme climate events. They will be able to engage in diversified agricultural pursuits that have year-round markets. Women, who are currently confined to providing labor in farm fields in addition to their household chores, will have access to technology for post-harvest handling, storage and value-added food processing activities which will allow them to build alternative livelihoods that do not rely on land and forests only.

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

Sustainability is at the core of the design and strategy of the project. The project aims to integrate planning for climate change resilience into provincial and district level policy, programs and budgets. It will empower communities to better understand the causes of their food insecurity and how these are affected by climate change, and will draw them into a participatory process of developing solutions. While this participatory process is somewhat lengthy, it also ensures communities develop a profound understanding of how specific activities benefit them, and of their own role and responsibility for adopting behaviors conducive to generating those benefits. Training local and provincial government officials in supporting these processes will also ensure stakeholders have the tools to continue their work towards the vision of climate resilience beyond the duration of this project.

Sustainability at the community level will be promoted by ensuring that the actions are community-driven to increase ownership and commitment, and that they undergo a thorough socio-economic-environmental assessment prior to approval and implementation. Assets created under the project will be prioritized and decided through a community participatory approach so that the community will be able to maintain, repair and replace them with their own knowledge, skills, and resources after the project closes. NGOs, extension services and others involved in implementation will receive proper training and implementation and will be closely monitored by the project team.

Outcomes from the project will not only be sustainable because of community involvement in project design, implementation and monitoring. Community members will see concrete benefits in a variety of ways, for example through increased productivity, and better access to markets. Local government will have the capacity to better support community-driven and owned processes. Lower watershed residents will see value in services provided by their peers in the upper watershed and will be willing to pay for those services.

Combined, both components of the project will create a virtuous cycle where good policy, improved capacity and concrete adaptation actions empower communities to adapt to the effects of climate change and to reverse the environmental damage which if unchecked would further increase their vulnerability. The knowledge and lesson learnt delivered by the project will be captured through its monitoring system, documented in accessible reports, shared and discussed with all relevant stakeholders, thus promoting the application and replication of valuable lessons in a wider scope beyond the project itself.

This project will influence existing climate change policy, programmes and action plans in each working unit (*Satuan Kerja Perangkat Daerah* – SKPD) of the Central Lombok District and of NTB Province overall under the NTB Strategy and Action Plan on Food Security under a Changing Climate, 2011-2015. Activities under this project will be cost shared with the government budget allocations and integrated into the DEMAPAN National Program, which is managed by the Food Security Agency (the Executing Entity of this project). Embedding the activities into DEMAPAN will first ensure that they are sustainable and last long beyond the duration of the specific project funding. Also, having

them integrated into a national programme will ensure an easy road to scale up beyond NTB province, once deemed successful.

The Executing Agency, the Food Security Agency, will also soon experience an expansion in its mandate which will also enhance its ability to be more effective at incorporating climate change adaptation into its work. According to the new Food Regulation Number 18/2012, the Food Security Agency will have bigger power to intervene in food production, procurement, storage, and distribution. Moreover, it will have authority to provide food policy recommendations. The new regulation instructs the government to create an independent agency by the end of 2015 to oversee national food issues and strategies, which reports directly to the president. The creation of a new Food Security Agency presents an opportunity to strengthen the mainstreaming of project results into wider government policy and thus it will ensure longer term sustainability.

The sustainability of specific outputs is described below:

EXPECTED OUTCOMES	EXPECTED CONCRETE OUTPUTS	SUSTAINABILITY MECHANISM	RESPONSIBLE PARTY/IES
1. Increased knowledge and capacity of local communities and governments to manage climate risks and full ownership of adaptation measures in targeted communities in Dodokan watershed	1.1. Extension workers, local government officers at village and district levels are trained and mobilized to (i) assess climate risk under different land use scenarios and (ii) improve management of land and water resources.	Landscape-based assessment in the watershed will be defined through a participatory process that considers the ecological zone and community priorities to ensure ownership. Assessment results will become significant inputs for the DEMAPAN Program and integrated into the NTB Strategy and Action Plan on Food Security under a Changing Climate to evaluate the matrix program proposed by sectoral agencies, with more specific focus on the programs of the forestry, food security, agriculture and public works agencies, under the coordination of BAPPEDA. Training modules generated from the activities will be integrated into the Agriculture and Food Security Offices' respective training programs for further replication.	Food Security Office, Bappeda I NTB, Bappeda II Central Lombok District, Agriculture Office, Meteorological Office, Forestry Office, Public Work Office.
	1.2. Community members and farmer organizations are trained and mobilized to • design and monitor the implementation of local climate change adaptation plans (that also address gender specific issues and vulnerable groups) • ensure anthropogenic	Continuous focus group discussions, training and mobilization on water resource management and climate change adaptation plans will ensure that climate impact are considered by the community. Enforcement will be conducted through village conservation agreements which include a monitoring and evaluation mechanism to ensure ownership and	Farmer organizations, villages and communities in Dodokan watershed.

EXPECTED OUTCOMES	EXPECTED CONCRETE OUTPUTS	SUSTAINABILITY MECHANISM	RESPONSIBLE PARTY/IES
	causes of land degradation are addressed by the community, complementing community efforts to self-police negative practices resulting in land degradation by improved law enforcement.	sustainability. Understanding of indigenous wisdom, knowledge and practices will be emphasized. Lesson learns from this output will provide significant inputs for the DEMAPAN program to improve the community targeting and intervention selection mechanism	
	1.3. Local food security and adaptation plans are integrated with district and provincial development plans and a climate-sensitive integrated Master Plan for watershed management is developed.	The integration of planning will be self-reinforcing across plans, and the Food Security and Agriculture Offices will have recurrent budgets to continue to support the process once the project is closed in river catchment areas.	Food Security Office NTB and district level, Bappeda I NTB, farmer organizations.
	1.4. An early warning system for climate-induced disasters in targeted sub-districts is designed, implemented and maintained.	Climate information systems would be developed and disseminated in conjunction with the Meteorological Office and Agriculture Office , both of which have good capacity. Findings, lessons learned, guidelines and standard operating procedures will be developed and integrated into the Meteorological Office and Agriculture Office program and budget to ensure synergy and sustainability. The improved training curricula, findings and lesson learned from the Food and Nutrition Surveillance System (FNSS) and climate field school (CFS) implemented under this output will be integrated into the Food Security Agency FNSS program and Meteorological Office CFS program for sustainability and further replication. The improvement of these two programmes would strengthen the monitoring and evaluation system of the DEMAPAN Program.	Food Security Office, Meteorological Office, Agriculture Office, Bappeda NTB, farmer organizations.
	1.5. Lessons learned from community and local experience are shared and used for refining and	Dissemination of lessons from the field will support replication in other regions and increase knowledge among a wide group of stakeholders.	Food Security Agency, Food Security Office NTB.

EXPECTED OUTCOMES	EXPECTED CONCRETE OUTPUTS	SUSTAINABILITY MECHANISM	RESPONSIBLE PARTY/IES
	prioritizing provincial climate change adaptation actions.	They will become inputs for the overall evaluation of the DEMAPAN program and the national action plan on climate change adaptation (RANAPI), and specifically the NTB Strategy and Action Plan on Food Security under a Changing Climate (RADKPPI).	
Outcome 2. Diversified and strengthened livelihoods and sources of income enable vulnerable farmers households to tackle the climatic and anthropogenic drivers of vulnerability and enhance the community's ability to use climate information for managing climate risks	2.1. A diverse range of suitable crop species and varieties that are tolerant to rainfall variability are selected and cultivated and suitable plants, soil, water and nutrient management practices are applied by the farmers in the up- and downstream areas of Dodokan watershed, resulting in an increase of diversification and yields.	Activities are designed to support communities to take measures to make their subsistence farming practices more resilient to extreme climate conditions. Implementation of measures will be done jointly by communities, extension services and CSOs to build trust, understanding and stimulate the exchange and blending of traditional and modern knowledge, approaches and decision making processes. The improvement of crop management practices including home gardens will provide benefits in terms of diversifying livelihoods, food production, generating income and increasing access to protein sources in farm family diets, thereby reducing vulnerability and enable farmers to maintain improved systems after the project closes. The combined trainings to strengthen beneficiary skills to adopt improved crop management will ensure benefits that last beyond project closure. Once the community starts reaping those benefits, it will be keen to continue to use such improved practices after the project ends. Monitoring and evaluation of the activities beyond the project periods will be conducted under the DEMAPAN Program. This output will strengthen DEMAPAN's objectives in increasing food availability by integrating climate risk consideration	Farmer organizations, villages communities in the Dodokan watershed; Food Security Office, Agriculture Office, BPTPH (Food Crops Protection and Horticulture) Office.

EXPECTED OUTCOMES	EXPECTED CONCRETE OUTPUTS	SUSTAINABILITY MECHANISM	RESPONSIBLE PARTY/IES
		into activities	
	2.2. Proper post-harvest handling, storage, basic food processing and food quality and safety assessment steps and methods are applied by the farmers in the up and downstream areas of Dodokan watershed.	This output will promote economic diversification, helping rural communities become less dependent on climate sensitive livelihoods and forest exploitation over the long-term. It will stimulate entrepreneurship among communities with an emphasis on women. It will foster close linkages with the private sector in NTB for technical assistance and market linkages to create self-sustaining trade. Thus, it will support DEMAPAN Program in increasing food access and purchasing power of rural community through improved food availability.	Farmer organizations, villages and communities in Dodokan watershed, Food Security Office, local state University (UNRAM)
	2.3. Increased income for vulnerable families through the creation and improvement of natural and physical livelihood assets.	Cash/ Voucher for Work will significantly strengthen the asset base of communities and allow them to continue to generate income and be food secure in the face of climate shocks. Active participation of the community will be at the core of the approach to ensure ownership of the assets created. Farmers' groups and communities, whose capacity has been strengthened through Output 1.2., and who will be reaping economic benefits from the assets created, will have a strong incentive to maintain them to ensure their sustainability. This output will outline best practices and lessons learn to the DEMAPAN Program on how the conservation of natural resources and improvement of rural infrastructures in an integrated manner would strengthen farming practice and thus can effectively improving food security of rural community.	Farmer organizations, villages and communities in Dodokan watershed, Food Security Office.

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

The project has conducted a screening of the environment and social impact and potential risks and has identified no such adverse impact and risks (detailed measures are described in Chapter III.C). Therefore, the project would be categorized as Category C. The checklist result is presented in the following table:

Checklist of environmental and social principles	**No further assessment required for compliance**	**Potential impact and risks – further assessment and management required for compliance**
Compliance with the Law	√	-
Access and Equity	√	-
Marginalized and Vulnerable Groups	√	-
Human Rights	√	-
Gender Equity and Women's Empowerment	√	-
Core Labour Rights	√	-
Indigenous Peoples	√	-
Involuntary Resettlement	√	-
Protection of Natural Habitats	√	-
Conservation of Biological Diversity	√	-
Climate Change	√	-
Pollution Prevention and Resource Efficiency	√	-
Public Health	√	-
Physical and Cultural Heritage	√	-
Lands and Soil Conservation	√	-

PART III: IMPLEMENTATION ARRANGEMENTS

A. *Describe the arrangements for project / program implementation.*

Project Management Structure

The Food Security Agency (BKP) will become the Executing Entity (EE) of the project. The World Food Programme (WFP) will serve as the AF Multilateral Implementing Entity (MIE) of this project and is responsible for all financial, monitoring and reporting responsibilities to the Adaptation Fund, and will also provide technical guidance, administrative and managerial support to the project.

Policy guidance to the project will be provided by a **National Project Steering Committee (NPSC)** chaired by the Deputy Minister for Natural Resources and Environment, BAPPENAS. The membership of the NPSC will consist of technical directorates concerned from the Coordinating Ministry for People Welfare, the National Food Security Agency (BKP) of the Ministry of Agriculture, the National Council on Climate Change, and the Directorate for Environment Degradation Control and Climate Change of the Ministry of Environment, including the Head of BAPPEDA I NTB Province, and Head of BAPPEDA II district level. It will also include a representative (Deputy Country Director (DCD)) from WFP as an observer and resource person. The NPSC will be the highest decision-making body for the project, and will guide the overall implementation and the endorsement of the Project Annual Work Plan. The NPSC will meet every six months.

To support the project execution, the Food Security Agency (BKP) as the national Executing Entity will establish a **Project Management Unit (PMU)** which will be responsible for day to day project management decisions and will work under the direct supervision of the NPSC. The PMU plays a critical role in day to day project monitoring and evaluation by assuring quality in these processes and products, and using evaluations for performance improvement, accountability and learning. The PMU organizes the process of creating the quarterly reports, which will be verified by WFP. These are then to be used as the basis for the annual report, which is submitted after review by WFP to the AF. The PMU can make suggestions for input to the NPSC deliberations, but cannot ultimately decide on deviations from original plans. The PMU will be supported by **Technical Experts** who will provide technical expertise to the project. In the implementation of specific activities, the PMU will receive assistance from NGOs/CSOs/ Service Providers. Activities are carried out by the PMU with coordination support from WFP. Representatives of other stakeholders can be included in the PMU as appropriate.

The PMU will be managed jointly between a National Project Director and a Project Manager both of which will be appointed by the Executing Entity,; supported by an administrative team; responsible for the day to day project management decisions. The National Project Director will act as the administrative and executive manager of the activities described in the project document. The project manager will be will responsible for the supervision of the execution of the activities, under the rules and procedures of the AF and WFP. Decisions are made jointly to oversee and provide appropriate guidance and daily management to the PMU.

The PMU will be based in Jakarta and it will report to and be accountable periodically to the Project Steering Committee, while it will be reporting to the Head of the Food Security Agency (BKP) on a daily basis.

A **Local Project Support Team (LPST)** will be established to run all the activities in NTB and to coordinate between the different divisional actors in the province, district, and villages, including farmer organizations and community based organizations on a day to day basis. The LPST structure will be formed based on the current existing Climate Change Task Force of NTB, and it will be based in Mataram (the capital of NTB Province).The LPST will be chaired by the Head of BKP NTB supported with full time project support staff and members representing each related agency from agriculture, forestry, plantation, meteorology, logistics, and the provincial secretariat on economic and administration, including Bappeda. The LPST will monitor the progress of activities as well as the development of indicators included in the project results framework, and provide regular progress reports to the national PMU.

At village level it is envisioned that there will be **Village Level Project Committees** to coordinate activities of climate change adaptation in the villages. These Committees will consist of the Head of village, customary leaders, women's group, farmer organizations, and agriculture extension workers. The Committees will also streamline different village development interventions and participate in developing village strategies and awareness raising programs.

WFP Country Office Support Services

WFP as Multilateral Implementing Entity is accountable for facilitating and monitoring overall project implementation - including providing monitoring and evaluation, audit and annual reporting functions to the AF, and ensuring the project delivers against AF operational guidelines and WFP standards, rules and regulations. Based on the approved Annual Work Plan, WFP as administrator of the project funds will make the necessary budgets available to the Executing Entity to carry out its tasks, with the government also planning to provide matched funds for several activities. WFP will assign the necessary staff to provide technical guidance, and administrative and coordination support to oversee the project as per WFP's MIE obligations. WFP as MIE will undertake activities in coordination with EE, which include reviewing of narrative and financial reports before submission to the AF, following up on the project work plan, providing advice to the steering committee and PMU when needed and providing information to the AFB,

A summary of the project management structure is presented in Figure 15 below.

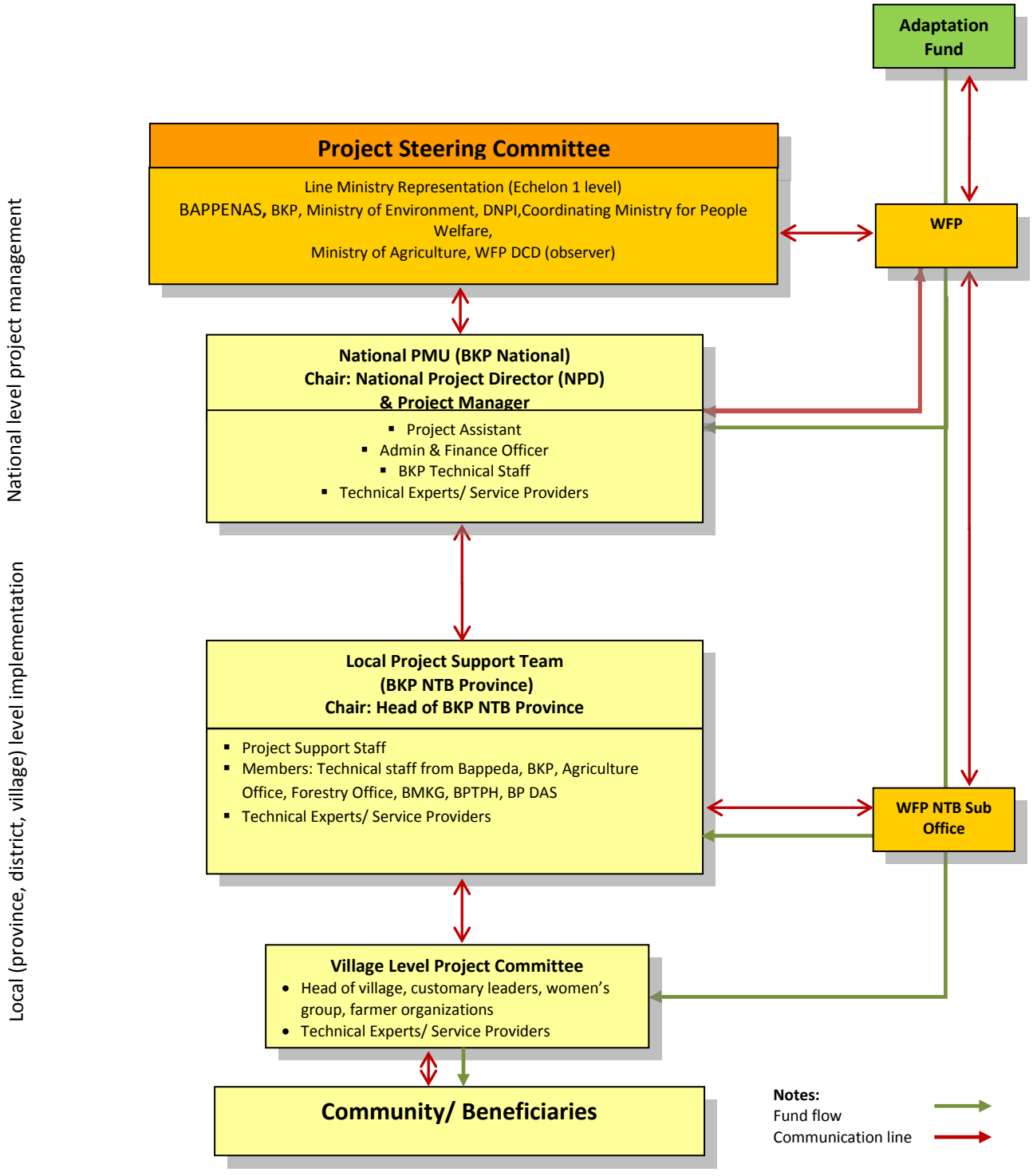


Figure 15. Project organization structure

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

The proposed project is based on strong government support and cost sharing at national and local level and can draw on lessons learned from the past. The greatest risks are 1) inertia against change from the key-stakeholders including parliament, government officials, extension workers, and communities having a preference to conduct business as usual, and 2) inability to effectively coordinate the many agencies to be directly and indirectly involved.

To mitigate these risks, the project will work closely with the highest authorities in NTB to mobilize support from government agencies, and will invest in establishing/ strengthening coordination mechanisms at provincial and district level for addressing climate change. The project will be executed by the Food Security Agency (BKP) in the national and provincial level. The National Development Planning Agency (BAPPENAS) will become the steering committee to evaluate project progress. At the local level, the project will collaborate with local stakeholders (government agencies, NGOs, universities) in supporting participatory approaches that stimulate a shift in thinking at the community level, and assist these communities to bring their needs to the attention of, and share best practices with, extension staff and district level planning authorities.

In terms of environmental risks, unfavorable climatic conditions may occur during the project life cycle and impact on the investments made by the project. An important assumption is that these climatic extremes will be within coping range and that existing institutions and community groups will rapidly absorb and act on the new skills, technical approaches and knowledge acquired through the project. More details on risks and assumptions are provided in the table below

Risk	Rating	Mitigation measures
Coordination among government agencies will be ineffective due to the large number of government institutes involved, capture by sectoral interests, and multiple reporting lines	**Low**	This risk will be mitigated by strong leadership from senior government officials, highlighting the opportunities and benefits of cooperation across agencies and other partners. The project has already started to map out relevant shared interests across agencies. Information will be broadly shared to identify synergies and opportunities for cooperation, and minimize the risks of competition and duplication. Further multi-stakeholder discussions will focus on identifying common issues, and finding pathways towards common goals and actions.
Bureaucratic processes hamper the active involvement of government institutes in project activities	**Low**	The project will put a premium on gaining assurance and firm buy-in from both senior management and their staff, providing training and coaching, and showcasing the value of involvement for day to day work and progress.
Some communities are unwilling to participate and prefer to continue business as usual in a traditional farming practice and cause further	**Medium**	Communities will largely be self-selected for their commitment as well as capacity. Also, the introduction of new ideas and innovation will be carried out in a participatory way, ensuring that resulting actions are based on the needs and ideas of the communities themselves and provide tangible results. A premium will be placed on communication through field based demonstration, training

Risk	Rating	Mitigation measures
deforestation and land degradation		and learning. Village conservation agreement will be put in place to ensure the enforcement and sustainability of the activities, and to create a community forest safeguarding. The project will recognize the customary law and local wisdom (*awig-awig*) available in the community and will strongly acknowledge and use it as an important capital to develop the conservation agreement to address the land degradation and deforestation problems, in conjunction with government's efforts in enforcing the law.
Extreme climate events take place during the project which are beyond the coping range of the targeted communities and measures introduced	**Low**	Detailed vulnerability assessments at district and community level will be carried out in advance of the full project appraisal to understand the resilience of the communities and the type, frequency and severity of extreme climate events that may likely occur in the districts. Technical experts responsible for the detailed design of adaptation measures will ensure that measures to be introduced are robust and appropriate for the capacities and climate risk profile of the communities.

C. *Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund.*

Based on the screening below, the project would be categorized as Category C. The summary of checklist result is presented in Chapter II.K.

- *Compliance with the Law* – all activities (especially under Component 2) will be executed in compliance with relevant laws on forestry management (Law No. 19/2004), prevention of forest destruction (Law No. 18/2013), environment (Law No. 32/2009), agriculture protection for sustainable food security (Law No. 41/2009), water resources (Law No. 7/2004), and the ratification of Kyoto Protocol (Law No. 17/2004). Specifically, the climate early warning system under output 1.4 and the adaptation implementation under outputs 2.1 and 2.3 will support the Presidential Instruction No 5/2011 on Securing Food Production to Anticipate Extreme Climate.

- *Access and Equity* – a thorough community participatory process will be carried out inclusively to gain a common understanding and agreement among the people, and to ensure that the adaptation actions (under Component 2) will not impede access to basic health services, clean water and sanitation, energy, education, housing, safe and decent working conditions, and land rights.

- *Marginalized and Vulnerable Group*s – the project will address the development priorities for livelihoods, targeting the disadvantaged and most vulnerable communities. The project strategy has taken into account the physical and economic vulnerability of rain-dependent farm families. The NTB Food Security and Vulnerability Atlas (Figure 7), the village level food security atlas of Central Lombok District (Annex 7), in combination with the risk level of harvest failure due to extreme climate events map from the study of Ministry of Environment/GIZ (Figure 12), and the erosion risk level and degraded land areas (Annex 8)

have been used to identify the most vulnerable communities (priority villages for support) in the project area. 17 villages have been identified to be the most vulnerable to climate risks and will be prioritized for receiving support. The level of priority has been staged into three levels based on their risks (See Annex 9 for the matrix analysis). The final decision on target areas will be conducted through Component 1 activities (outputs 1.1, 1.2, and 1.3) during the first year.

- *Human Rights* – the project will not only respect but reinforce human rights, especially those related to ensuring access and equity, prioritization of marginalized and vulnerable groups, gender equity and women's empowerment, core labour rights and protection of indigenous people.

- *Gender Equity and Women's Empowerment* – the project will take into account issues / challenges related to gender relations to ensure that the design of the activities is gender sensitive. Activities should, at the very least, not have a negative effect on gender relations and, if feasible, contribute to improved gender equity. In farmer communities in Indonesia, women often actively participate in agricultural activities, while also seeing to household chores and raising children. This has implications on the availability of women to participate in activities. However, because they play a key role in achieving food security, in terms of food availability, access and utilization and nutrition security, their active participation is crucial. Therefore activities will be designed in such a way that women can and are motivated to participate and that they make full use of the opportunity to provide women with the means, knowledge and skills that allow them to fulfil their potential.

- *Core Labour Rights* – through the cash/ voucher for work scheme under Component 2, farmers will have opportunities to produce small scale agricultural and rural infrastructure assets that benefit their communities and halt or reverse land degradation. The work will be carried out during the lean season when most rain dependent farmers lack employment and income. The work scheme will be executed in compliance with the international labour standards including the principles, rights and minimum standards related to work and workplaces, and will also follow the provincial minimum wage regulations.

- *Indigenous Peoples* – most of the targeted rain-dependent farmers are the indigenous people of Lombok Island (*Sasak* tribe). These people are the main target group to be supported by the project due to their high vulnerability to climate change, which increasingly threatens their traditional way of life. They will become the main actor and lead in the decision making on the village adaptation actions. The FPIC (Free, Prior Informed Consent) initiative will be at the core of the process following the UN Declaration on the Rights of Indigenous Peoples.

- *Involuntary Resettlement* – there will be no resettlement of people under the project. The adaptation actions will target the most vulnerable rain-fed agriculture and rehabilitate the most degraded forest beyond the community settlement areas. To the contrary, the project objective is to enable communities to continue to live sustainable lives in harmony with nature in the same place where their ancestors lived.

- *Protection of Natural Habitats & Conservation of Biological Diversity* – through the land/ forest rehabilitation activities, the project will support the protection of natural habitat and could even potentially increase the biological diversity within the rehabilitated area.

- *Climate Change & Pollution Prevention and Resource Efficiency* – activities under the project will result in no significant increase in GHG emissions or pollution. Long distance travel will be minimized by optimizing the utilization of local resources to avoid significant release of GHG emissions. The project offices (national and local level) will apply a green concept for resource efficiency on paper utilization, electricity and waste management. Land/ forest rehabilitation activities under Component 2 will increase GHG sequestration capacity and thus reduce emissions.

- *Public Health* – the execution of the adaptation actions under Component 2 will follow all relevant regulations and standards related to environment, forestry, agriculture, and water resources as explained above (compliance with the law) to avoid any potential significant negative impact on public health.

- *Physical and Cultural Heritage* – the project will target the most vulnerable rain-fed agriculture areas and degraded land/ forest in Dodokan watershed of Central Lombok District. Form the vulnerability assessment, the project has identified 1,786 hectares of rain-fed agriculture areas which are highly exposed to climate change risk (in term of harvest failure) and 1,734 hectares of highly degraded forest which are located within the most food insecure village areas. The adaptation actions under Component 2 will target these 'hot spot' areas covering 893 hectares of the rain-fed areas and 520 hectares of the degraded forest, covering around 18,000 most vulnerable farmer households. The remaining 'hot spot' areas will be covered through cost sharing scheme with NTB government. There are no physical or cultural heritage sites in these 'hot spot' areas.

- *Land and Soil Conservation* – through the land/forest rehabilitation activities under Component 2, the project will promote soil conservation and will avoid further land/ forest degradation. The project will also produce village conservation agreements which will bring commitments from local communities to protect their forest.

WFP as the MIE will provide a short course at the beginning of the project to the Executing Agency, especially for the appointed National Project Director (NPD) and the project team from BKP, followed by monthly regular coordination meetings, to ensure their knowledge and awareness level regarding their responsibilities with regards to the provisions of the Environmental and Social policy of the Adaptation Fund, and the promotion of human rights, including specifically the complaint handling mechanism of the Fund. The Environmental and Social Policy of the Adaptation Fund (document approved in November 2013) will be used as the main guidance to ensure compliance.

To make sure that all direct beneficiaries of the project and other related stakeholders are aware about the grievance mechanism available in the country and the complaint handling mechanism of the Fund, in case of non-compliance, the project, under the supervision of WFP as MIE, will produce

public information materials (leaflets and brochures) which explain the project, complete with detailed contact persons in charge (name, position, address, phone, fax, email), which would be the NPD and the project manager, including access to information regarding the mechanism for handling complaints of the Adaptation Fund (https://www.adaptation-fund.org/page/mechanisms-handling-complaints). These public information materials will be distributed to direct beneficiaries and related stakeholders during community consultations and FGDs, and posted on the village notice boards.

D. *Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan. Include break-down of how Implementing Entity's fees will be utilized in the supervision of the monitoring and evaluation function.*

A project Inception Workshop will be held to launch the project with those in assigned roles in the project organization structure, WFP office, and where appropriate/feasible, regional technical policy and program advisors as well as other stakeholders. The objective of the workshop, following robust and in depth planning and consultations prior to the workshop, will be to ensure all project stakeholders are agreed on project planning, components, operating arrangements, timelines etc. The two outputs from the inception workshop will be the official inception workshop report and a detailed year 1 work plan. The inception report will be submitted to the AFB through WFP as the MIE.

The Inception Workshop will address a number of key issues related to functions, roles, and responsibilities within the project's decision-making structures, reporting and communication lines, and conflict resolution mechanisms, including plan and schedule Project Steering Committee meetings. The Project Steering Committee will meet regularly throughout the project duration with the first meeting to take place no later than three months after the inception workshop.

Monitoring and Reporting:
WFP as the MIE will submit an annual Project Performance Report (PPR) to the Ethics and Finance Committee (EFC) through the AF secretariat. The PPR will be submitted on a rolling basis, one year after the start of project implementation. WFP as the MIE will work closely with the Executing Entity through the Project Management Unit (PMU) to create quarterly progress reports and financial statements, which will be used as the basis for the PPR (reviewed by WFP) and a financial statement (approved by WFP Legal and Finance). The PPR will be submitted no later than two months after the end of the reporting year.

The PPR will follow the project results framework (see below section III.E), and potential additional indicators agreed upon by stakeholders. The PPR data generated will consist of financial, procurement and physical progress reports, information on compliance with environmental and social assessments, management and financial reports. The issues to be reviewed will include the efficiency, sustainability and acceptance by stakeholders of project activities. Information on the achievement of quantitative targets will be supplemented with narrative reports.

Evaluation:
In addition to the above, WFP as the MIE will conduct mid-term and final evaluation for the project. These evaluations will be conducted according to the requirements of the AFB's guidelines, and WFP

will ensure that the project's M&E plans and indicators are aligned with the AF's results-based management framework. Further details of these evaluations are below.

Mid-term of project cycle:

The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation. The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by WFP with support of the PMU.

End of Project:

An independent Final Evaluation, coordinated by WFP and with cooperation of the Executing Entity, will take place three months prior to the final Project Steering Committee meeting and will be undertaken in accordance with WFP guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals, and national government policies and programmes (e.g. RAN API, DEMAPAN). The Terms of Reference for this evaluation will be prepared by WFP. The Terminal Evaluation will also provide recommendations for follow-up activities and requires a management response.

During the final three months, WFP in coordination with the PMU and the EE will prepare the Project Final Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

Audit:

A final certified financial statement would be sent to the AFB once the project is completed in line with the financial regulations, rules and directives of WFP.

M&E work plan and budget:

Monitoring and Evaluation (M&E) will take place in line with WFP guidelines. The following table gives a tentative distribution of the budget over the main items.

Description	Responsible Parties	Budget US$ *Excluding project team staff time*	Time frame
Project Inception Workshop	Project manager and team	5,000	Project start-up
Inception Report	Project manager and team	3,000	Two weeks after the

Description	Responsible Parties	Budget US$ *Excluding project team staff time*	Time frame
			inception workshop
Periodic status/ progress reports	Project manager and team	8,000	Quarterly
Meetings of Project Steering Committee	Project manager and team	8,000	Bi annual
Annual Progress Report	Project manager and team	7,500	End of each year
Mid-term Evaluation	External WFP managed evaluation	8,000	At the mid-point of project implementation.
Final Evaluation	External WFP managed evaluation	10,000	At least three months before the end of project implementation
Project Final Report	Project manager and team local consultant	2,500	At least three months before the end of the project
TOTAL cost		**52,000**	

E. *Include a results framework for the project proposal, including milestones, targets and indicators*

Goal: The overall objective of the project is to secure community livelihoods and food security against climate change-induced rainfall variability and more intense and frequent extreme climate events

The project has two components. The first component is designed to improve climate-related knowledge and institutional capacity at village, district, and provincial level in developing and implementing integrated watershed management involving multi stakeholders and community participation. The second component seeks to build resilient livelihoods of vulnerable groups and to develop alternative livelihood options in the face of more unpredictable and damaging weather.

Program strategy:	**Objectively verifiable indicators**				
	Indicator	**Baseline**	**Target**	**Sources of verification**	**Assumptions and Risks**
Component 1: Improving knowledge and institutional capacity of local governments to reduce climate risks associated with rainfall variability and their impact on community livelihoods and food security, aligned with existing government food security programmes (e.g. DEMAPAN).					
Outcome 1. Increased knowledge and capacity of local communities and governments to manage climate risks and full ownership of adaptation measures in communities in targeted district and watershed	% of rural households using local adaptation plans to adjust their livelihood behavior % of knowledge products produced by the project utilized by the local government to adjust their planning strategy	Local governments and communities have limited knowledge and lack of understanding on climate change, its risks and impact; limited capacity in identifying and developing relevant adaptation strategies and actions	At least 90% of rural households in targeted villages, report that they have changed their livelihood behaviour based on climate risk information and local adaptation plans produced by the project At least 75% of knowledge products, produced by the project are utilized by the local government to adjust their planning strategy	▪ Knowledge products, ▪ Policy support tools ▪ Capacity building activities ▪ Climate-sensitive, landscape based-integrated watershed management Master Plan. ▪ Local climate adaptation plans	Assumption: local governments and stakeholders in and surrounding the watershed are willing to work together in developing integrated, climate sensitive, watershed management plans. Risk: climate change measures are long term and the project may not capture all change in ecosystem vulnerabilities
Output 1.1: Extension workers, local government officers at	Availability of assessment of climate risks in Dodokan watershed system	Not available	▪ Assessment of climate risks under existing land use, and different land use scenarios (current spatial	▪ Knowledge products on climate risk assessment	Assumption: Good long historical projection of climate data is available

Program strategy:	Objectively verifiable indicators				
	Indicator	**Baseline**	**Target**	**Sources of verification**	**Assumptions and Risks**
village and district levels are trained and mobilized to • assess climate risk under different land use scenarios • improve management of land and water resources	under different land use scenarios Number of extension workers and local government officers trained and mobilized		plan and land use projection) is available ▪ At least 400 local policy makers and planners are able to use the climate risk assessment in informing local adaption plans and designing the forthcoming Master Plan	▪ Report on refinement of spatial plan of the watershed and landscape-based activities programs	Historical land use and socio-economic data driving land use change are available Risk: Climate uncertainty cannot be managed due to unavailability of assemble climate models Trained people will be transferred to other positions which are not related to climate resilience
Output 1.2: Community members and farmer organizations are trained and mobilized to • design and monitor the implementation of local climate change adaptation plans (that also address gender specific issues and vulnerable groups) • ensure anthropogenic causes of land degradation are addressed by the community to	Number of local adaptation plans developed Number of village conservation agreements developed % of rural households with better understanding and knowledge regarding climate change risk and how to prepare adaptation strategy % of women	Local adaptation plans are not available Village conservation agreements are not available Rural households have very limited or no knowledge regarding climate change risk and how to prepare adaptation strategy Women have limited	▪ 17 local adaptation plans are developed ▪ 17 village conservation agreements are developed ▪ At least 90% of rural households in target villages, report that they have better understanding and knowledge regarding climate change risk and how to prepare adaptation strategy ▪ At least 50% participation from women for village decision making process	▪ Climate sensitive local plans ▪ Village conservation agreements ▪ Project reports	Assumption: All related stakeholders engage in the process of design and are willing to absorb and apply new knowledge and systems Risks: Conflicting interests among parties and and/or poor understanding of climate change issues

Program strategy:	Objectively verifiable indicators				
	Indicator	**Baseline**	**Target**	**Sources of verification**	**Assumptions and Risks**
complement community efforts to self-police negative practices resulting in land degradation by improved law enforcement	participation	opportunity to actively participate in decision making process			
Output 1.3: Local food security and adaptation plans are integrated with district and provincial development plans, and a climate-sensitive integrated Master Plan for watershed management is developed.	Number of adaptation plans accommodated in district and provincial plans and in the Master Plan. Availability of a Master Plan for the Dodokan watershed	Existing plans do not adequately address climate risks. No climate-sensitive, integrated Master Plan exists	▪ 17 local food security and climate adaptation plans are incorporated into district and provincial development ▪ A Master Plan for the Dodokan watershed is developed	▪ Project reports ▪ Government reports	Assumptions: Senior government officials and politicians give priority to addressing climate change Risks: Provincial and/or district governments fail to agree on a Master Plan which incorporate local risks and proposed risk reduction measures
Output 1.4: An early warning system for climate induced disasters in target sub-districts is designed, implemented, and maintained.	• Adoption of climate early warning systems that are available at national level reflecting local conditions • Availability of an early warning system that is relevant to local risks • % of rural	A number of initiatives on-going at national level, to be adopted at local level. However, due to lack of capacity and unclear dissemination mechanism, the technologies are not adopted by farmers and local governments.	A climate information system is designed and institutional mechanism for dissemination is established A technical team is operationalized and able to translate climate information into operational action An institutional mechanism for disseminating climate information is established	▪ Project reports ▪ Government reports	Assumption: Climate information is accessible and reliable Risks: Institutional mechanism and resource for supporting managing climate risk is not sufficient

Program strategy:	Objectively verifiable indicators				
	Indicator	**Baseline**	**Target**	**Sources of verification**	**Assumptions and Risks**
	households with access to early warning information on climate change risk		At least 90% of of rural households in targeted villages , receive early warning information in timely manner		
Output 1.5: Lessons learned from community and local experience are shared and used for refining and prioritizing provincial climate change adaptation actions	Availability of knowledge products for supporting decision making policy and capacity building activities on land and water resource management and effective climate risk management	Limited knowledge of key stakeholders at local level to effectively prioritize adaptation programme and distribute funding	At least 75% of knowledge products on local adaptation plans, climate change assessment in micro level, master plan of Dodokan, and climate early warning information, produced by the project are utilized by both local and national governments to adjust their development planning strategy	• Project reports • Micro level climate change assessment • Feasibility assessment on micro-level climate risk insurance • Local climate adaptation plans and conservation agreements • Government reports	Assumption: Incentives to share locally and receptivity for up-take nationally remains high; media interest in climate adaptation remains high Commitment of developing partners to provide financial support for climate change actions continues Risk: Overt political motivations in prioritizing programme or funding
Component 2: Securing livelihoods and food security of up to 18,000 rain-dependent farmer households, living in the up- and downstream areas of Dodokan watershed in Central Lombok District, against climate change-induced rainfall variability and extreme weather events such as droughts and floods, aligned with existing government food security programmes (e.g. DEMAPAN).					
Outcome 2. Diversified and strengthened livelihoods and sources of income enable vulnerable farmers households to tackle the climatic and anthropogenic	Level of community resilience to climate change risks especially due to rainfall deviation	Community have very limited and no knowledge on climate change risk with very low resilience level	Level of resilience of 18,000 rain dependent households to climate change risks are increased Up to 18,000 rain-dependent	• Project reports	Assumptions: Sufficient technical capacity and human resources can be mobilized at the local level to implement project activities; communities are

Program strategy:	Objectively verifiable indicators				
	Indicator	**Baseline**	**Target**	**Sources of verification**	**Assumptions and Risks**
drivers of vulnerability and enhance the community's ability to use climate information for managing climate risks			households are involved in building assets and developing/diversifying livelihoods		committed and able to invest time and effort and willing to manage forests more; project adaptation measures are effective enough to reduce the effects of extreme climate events on lives and livelihoods. Risks: Project may face delays with community action plans because of disagreements within communities about priorities and beneficiaries; communities may be unwilling to participate and prefer to continue business as usual
	Reduction of land degradation and deforestation	Deforestation rate in Lombok Island 5,107 ha/year (2000-2011)	Deforestation rate in pilot areas reduced		
	% of households additional income	Households income in average in Lombok Island IDR 1,350,000/month (equivalent to 135USD/month)	At least 50% increase of households income		
	% of women participation	Women have limited opportunity to actively participate in community work	At least 50% participation from women for cash/voucher for work		
	Level of food security	Targeted villages are within level 1 (the worst) and 2 of food insecurity	At least one stage reduction of food insecurity level		
Output 2.1: A diverse range of suitable crop species and varieties that are tolerant to rainfall variability are selected and cultivated and suitable plants, soil, water and nutrient management	# sites with trial plots, nurseries and seed banks established in the 17 targeted villages # tolerant varieties selected for the cultivation of each selected crop species	No/limited existing trial plots, nurseries and banks No/limited # of tolerant varieties used for cultivation No/limited knowledge	17 sites (1 site/village) with trial plots, nurseries and banks established At least 2 tolerant varieties selected for the cultivation of each selected crop species	• Project reports including field monitoring	Farmer households in the 17 targeted villages are motivated to invest time and efforts in the activities

Program strategy:	Objectively verifiable indicators				
	Indicator	**Baseline**	**Target**	**Sources of verification**	**Assumptions and Risks**
practices are applied by the farmers in the up- and downstream areas of Dodokan watershed, resulting in an increase of diversification and yields.	# trainings on application of weather forecasting for cultivation and SRI/SCI management practices provided in the 17 targeted villages and # participating FOs[1] Ha of rain fed and (semi-)irrigated agricultural land in the 17 targeted villages cultivated with a diversity of crop species using selected tolerant varieties and applying SCI/SRI[2] management practices # farmer households in the 17 targeted villages receiving 'Cash For Work' transfers % of female participants in activities in the 17 targeted villages	and skills on the application of weather forecasting for cultivation and SRI/SCI management practices No/limited diversity of crop species and usage of tolerant varieties in cultivation of agricultural land and no/limited application of SCI/SRI management practices	20 trainings on application of weather forecasting for cultivation and SRI/SCI management practices provided to +/- 200 FOs 893 ha of rain fed and 590 ha of (semi-)irrigated agricultural land cultivated with a diversity of crop species using selected tolerant varieties and applying SCI/SRI management practices +/- 3,000 farmer households receiving 'Cash For Work' transfers At least 50% of female participants in activities		

Program strategy:	Objectively verifiable indicators				
	Indicator	**Baseline**	**Target**	**Sources of verification**	**Assumptions and Risks**
Output 2.2. Proper post-harvest handling, storage, basic food processing and food quality and safety assessment steps and methods are applied by the farmers in the up and downstream areas of Dodokan watershed	# trainings on proper post-harvest handling, storage, basic food processing and food quality and -safety assessment steps and methods provided and # participating FOs in the 17 targeted villages # CCCPs[3] constructed in the 17 targeted villages and supplied with post-harvest handling-, food quality and -safety assessment- and basic food processing equipment # farmer households in the 17 targeted villages receiving 'Cash For Work' transfers % of female participants in activities in the 17 targeted villages	No/limited knowledge and skills on proper post-harvest handling, storage, basic food processing and food quality and -safety assessment steps and methods No/limited existing CCCPs and availability of post-harvest handling-, food quality and -safety assessment- and basic food processing equipment	20 trainings on proper post-harvest handling, storage, basic food processing and food quality and -safety assessment steps and methods provided to +/- 200 FOs 17 CCCPs (1 CCCP/village) constructed and supplied with post-harvest handling-, food quality and -safety assessment- and basic food processing equipment +/- 3,000 farmer households receiving 'Cash For Work' transfers At least 50% of female participants in activities	• Project reports including field monitoring	Farmer households in the 17 targeted villages are motivated to invest time and efforts in the activities

Program strategy:	Objectively verifiable indicators				
	Indicator	**Baseline**	**Target**	**Sources of verification**	**Assumptions and Risks**
Output 2.3: Increased income for vulnerable families through the creation and improvement of natural and physical livelihood assets	Number of unit and coverage area of physical constructions and natural assets created # rural households in the 17 targeted villages receiving 'Cash For Work' transfers % of women participation	Physical and natural assets are very insufficient to provide adequate protection to climate change risks Women have limited opportunity to participate in community assets creation	• 1100 agroforestry plots established • 60 units of small scale pumping irrigation established • 60 units of tube wells established • 20,000 units of bio pores established • 21 km of irrigation channels including pipes and feeder roads established • 11 units of check dams established • 20 units of water harvest and storage ponds established • 520 ha land in the upper catchment reforested/ afforested • 1,214 ha degraded land within lower areas of Dodokan reforested/afforested • 17 nursery centers established • +/- 15,000 rural households receiving 'Cash For Work' transfers • At least 50% participation from women for community assets creation	• Project reports including field monitoring	Community support the initiative and willing to participate.

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**
To secure community livelihoods and food security against climate change-induced rainfall variability leading to more intense and frequent climate events while simultaneously supporting the Government's renewed, deliberate efforts to address the underlying anthropogenic drivers that have caused the degradation of land and increased the vulnerability of communities to food insecurity and climate change	Number of knowledge products for supporting policy making and capacity building activities on land and water resource management and effective climate risk management	**Outcome 2:** Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. No. and type of targeted institutions with increased capacity to minimize exposure to climate variability risks	789,456
	Number of physical constructions, natural assets, and alternative livelihoods provided to vulnerable households	**Outcome 5**: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural assets maintained or improved under climate change and variability-induced stress	4,212,355
		Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure (increased) access to livelihood assets 6.2. Percentage of targeted population with sustained climate-resilient livelihoods	
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant amount USD**
Improving knowledge and institutional capacity of local communities and governments to reduce climate risks associated with rainfall variability and their impact on community livelihoods and food security, aligned with existing government food security programmes (e.g. DEMAPAN)	Number of capacity building activities for local government and local stakeholders in developing and implementing local adaptation plans and measures, and a climate-sensitive integrated watershed management plan and adaptation measures	***Output 2.1***: Strengthened capacity of national and regional centers and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impact of, climate-related events	789,456
Securing livelihoods and food security of up to 18,000 rain-	Number of households benefiting from improved	***Output 5:*** Vulnerable physical, natural, and social assets strengthened in	5.1. No. and type of natural resource assets created, maintained or improved to	4,212,355

dependent farmer households, living in the up and downstream areas of Dodokan watershed in Central Lombok District, against climate change-induced rainfall variability and extreme weather events such as droughts and floods, aligned with exisiting government food security programmes (e.g. DEMAPAN).	assets and diversifying income sources to cope with climate risks	response to climate change impact, including variability	withstand conditions resulting from climate variability and change (by type of assets)	
		Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impact, including variability	6.1 Percentage of households and communities having more secure (increased) access to livelihood assets 6.2. Percentage of targeted population with sustained climate-resilient livelihoods	

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.*

(See Annexes 2 and 3)

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

(See Annex 4)

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

A. Record of endorsement on behalf of the government[15] *Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

Prof. Ir. Rachmat Witoelar Executive Chair of the National Council on Climate Change/ Indonesia Designated Authority for the Adaptation fund	Date:

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

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
Implementing Entity Coordinator Nils GREDE Deputy Country Director World Food Programme - Indonesia	
Date: January, 13, 2014	Tel. and email:+62 21 570 9001 nils.grede@wfp.org
Project Contact Person: Chandra Panjiwibowo, Sarah Sijses	
Tel. And Email: +62 21 570 9001 chandra.panjiwibowo@wfp.org; sarah.sijses@wfp.org	

[15] 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.

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

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

Prof. Ir. Rachmat Witoelar Designated Authority Chair of the Steering Committee National Team for Climate Change Management	Date: 2 March 2015

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

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
Implementing Entity Coordinator  Anthea WEBB Representative and Country Director World Food Programme Indonesia	
Date: 6 March 2014	Tel. and email: +62-21-570-9001 Anthea.webb@wfp.org
Project Contact Person: James Hutchins Tel: +62 (812) 9482 6732; Email: hutchins.jc@gmail.com	

LIST OF ANNEXES

Annex 1. Endorsement Letter from the Designated Authority

EXECUTIVE CHAIR
NATIONAL COUNCIL ON CLIMATE CHANGE

Jakarta, 9 January 2014

Our Ref. : E-02/EC-NCCC/01/2014
Attachment : -
Subject : Endorsement for Adapting to Climate Change for Improved Food Security in West Nusa Tenggara Province (third submission)

To:
The Adaptation Fund Board
Adaptation Fund Board Secretariat
c/o Global Environment Facility

In my capacity as Designated Authority for the Adaptation Fund in Indonesia, I confirm that the above national project proposal is in accordance with the priorities of the Government of Indonesia in implementing adaptation activities to reduce adverse impacts of, and risks posed, by climate change in Indonesia.

Accordingly, I am pleased to endorse the above full project proposal for support from the Adaptation Fund. The full project proposal has been formulated taking into account the observations from the review sheet annexed to the notification of the Adaptation Fund Board's decision B.22/8.

If approved, the project will be implemented by World Food Programme (WFP) and executed by the Provincial Government of West Nusa Tenggara and Food Security Agency (BKP). The National Development Planning Agency (BAPPENAS), together with DNPI, Ministry of Environment, Ministry of Agriculture, and Coordinating Ministry for People Welfare would form the project steering committee.

Sincerely,

Rachmat Witoelar
Executive Chair
Indonesian National Council on Climate Change
Indonesia Designated Authority for the Adaptation Fund Board

Jakarta, 2 March 2015

To:
Mr. Mamadou Honadia
Chair
Adaptation Fund Board

Subject : Reconfirmation and endorsement for the WFP proposal

Excellency Mr. Honadia,

Please accept this letter as reconfirmation and endorsement from Indonesia Designated Authority in support of the Adaptation Fund Board (AFB) approval for funding the World Food Programme's proposal entitled "Adaptation to Climate Change for Improved Food Security in West Nusa Tenggara Province", in line with the AFB Decision B.21/26.

We thank you for your continued support to our efforts in implementing important adaptation programs in Indonesia.

Sincerely,

Rachmat Witoelar
Designated Authority
Chair of the Steering Committee
National Team for Climate Change Management

CC:

1. Minister of Environment and Forestry, Republic of Indonesia
2. Anthea Webb, WFP Representative and Country Director (anthea.webb@wfp.org)
3. Secretariat of the Adaptation Fund Board.

Annex 2. Detailed Budget and Budget Notes

PROJECT COMPONENTS/ EXPECTED OUTPUTS	RESPONSIBLE PARTY / IMPLEMENTING AGENT*	FUNDING SOURCE	BUDGET ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL	BUDGET NOTES
Component 1. Improving knowledge and institutional capacity of local governments to reduce climate risks associated with rainfall variability and their impact on community livelihoods and food security, aligned with existing government food security programmes (e.g. DEMAPAN).									
1.1. Extension workers, local government officers at village and district levels are trained and mobilized to	BKP	AF	Technical experts	55,000	-	-	-	55,000	1
			Meetings	5,000	-	-	-	5,000	2
• assess climate risk under different land use scenarios			Trainings	13,000	-	-	-	13,000	3
• improve management of land and water resources			Travels	8,000	-	-	-	8,000	4
Total Output 1.1								81,000	
1.2. Community members and farmer organizations are trained and mobilized to	BKP	AF	Technical experts	50,000	-	-	-	50,000	5
			Meetings	5,000	-	-	-	5,000	6
• design and monitor the implementation of local climate change adaptation plans that address gender specific issues and vulnerable groups			Trainings	15,000	-	-	-	15,000	7
• ensure anthropogenic causes of land degradation are addressed by the community to complement community efforts to self-police negative practices resulting in land degradation by improved law enforcement			Travels	9,600	-	-	-	9,600	8
Total output 1.2								79,600	
1.3. Local food security and adaptation plans are integrated with district and provincial development plans, and a climate-sensitive	BKP	AF	Project staff	24,000	6,300	-	-	30,300	9
			Meetings	9,000	1,050	-	-	10,050	10

PROJECT COMPONENTS/ EXPECTED OUTPUTS	RESPONSIBLE PARTY / IMPLEMENTING AGENT*	FUNDING SOURCE	BUDGET ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL	BUDGET NOTES
integrated Master Plan for watershed management is developed			Workshops	18,000	6,300	-	-	24,300	11
			Travels	2,000	2,100	-	-	4,100	12
Total output 1.3								68,750	
1.4. An early warning system for climate-related disasters in target sub-districts is designed, implemented and maintained	BKP	AF	Technical experts	36,300	38,115	40,021	42,022	156,458	13
			Meetings	5,000	5,250	5,513	5,788	21,551	14
			IT/ early warning equipment	45,000	5,250	5,513	5,788	61,551	15
			Trainings	33,000	34,650	36,383	38,202	142,234	16
			Travels	4,800	5,040	5,292	5,557	20,689	17
Total output 1.4								402,482	
1.5. Lessons learned from community and local experience are shared and used for refining and prioritizing provincial climate change adaptation actions	BKP	AF	Project staff	-	14,000	14,700	15,435	44,135	18
			Technical Experts	30,000	-	-	-	30,000	19
			Meetings	-	5,000	5,250	5,513	15,763	20
			Workshops	-	15,000	15,750	16,538	47,288	21
			Public Information materials	-	12,000	12,600	13,230	37,830	22
			Travels	-	4,000	4,200	4,410	12,610	23
Total output 1.5								187,625	

PROJECT COMPONENTS/ EXPECTED OUTPUTS	RESPONSIBLE PARTY / IMPLEMENTING AGENT*	FUNDING SOURCE	BUDGET ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL	BUDGET NOTES
Component 2. Securing livelihoods and food security of up to 18,000 rain-dependent farmer households, living in the up- and downstream areas of Dodokan watershed in Central Lombok District, against climate change-induced rainfall variability and extreme weather events such as droughts and floods, aligned with existing government food security programmes (e.g. DEMAPAN).									
2.1. A diverse range of suitable crop species and varieties that are tolerant to rainfall variability are selected and cultivated and suitable plants, soil, water and nutrient management practices are applied by the farmers in the up- and downstream areas of Dodokan watershed, resulting in an increase of diversification and yields.	BKP	AF	Project staff	18,000	18,900	19,845	20,837	77,582	24
			Technical experts	13,200	45,360	47,628	50,009	157,386	25
			Construction materials	142,750	139,388	146,357	153,675	582,240	26
			Community work incentive (cash/voucher)	122,790	128,930	135, 376	142,145	529,240	27
			Trainings	10,000	10,500	11,025	11,576	43,101	28
			Travels	4,000	4,200	4,410	4,631	17,241	29
Total Output 2.1								1,406,719	
2.2. Proper post-harvest handling, storage, basic food processing and food quality and safety assessment steps and methods are applied by the farmers in the up and downstream areas of Dodokan watershed.	BKP	AF	Project staff	16,000	16,800	17,640	18,522	68,962	30
			Technical experts	6,000	6,300	6,615	6,946	25,861	31
			Construction materials	-	90,000	94,500	82,688	267,188	32
			Community work incentive (cash/voucher)	-	66,035	69,337	72,804	208,175	33
			Trainings	10,400	10,920	11,466	12,039	44,825	34
			Travels	3,200	3,360	3,528	3,704	13,792	35
Total output 2.2								628,803	
2.3. Increased income for vulnerable families	BKP	AF	Project staff	36,000	37,800	39,690	41,675	155,165	36

PROJECT COMPONENTS/ EXPECTED OUTPUTS	RESPONSIBLE PARTY / IMPLEMENTING AGENT*	FUNDING SOURCE	BUDGET ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL	BUDGET NOTES
through the creation and improvement of natural and physical livelihood assets			Technical experts	11,440	12,012	12,613	13,243	49,308	37
			Construction materials	326,980	258,008	270,866	289,506	1,145,320	38
			Community work incentive (cash/voucher)	170,040	178,542	187,469	196,843	732,894	39
			Trainings	10,400	10,920	11,466	12,039	44,825	40
			Travels	4,800	5,040	4,851	4,631	19,322	41
Total output 2.3								2,146,833	
Component 1								819,456	
Component 2								4,182,355	
Project Execution cost <9.5%								524,148	
Total Project Cost								5,525,959	
Project Management Fee charged by the Implementing Entity 8.5%								469,707	
Total Amount of Financing Requested								5,995,666	

* Specific disbursement arrangements for activities will be agreed between the Government and WFP to achieve maximum programme and cost-efficiency and based on WFP's rules and regulations

Annex 2 (continuation)
Budget Notes

1. Total of 183 person days of national experts (300 USD/day) to conduct the climate risk assessment under different land use scenarios and strategy preparation for improved management of land and water resources.
2. 25 stakeholders meetings involving key people from local government agencies in the provincial and district level, including university, NGOs and INGOs (average 200USD/meeting for materials preparation and logistics).
3. 10 trainings for technical level officials from local government agencies in the provincial and district level (average 1,300 USD/ 4 days of training for materials preparation and logistics).
4. Travels for project consultants, surveys, and training participants.
5. Total of 227 person days with the involvement of local experts (220 USD/day) for the preparation of community adaptation plans that address gender specific issues and vulnerable groups.
6. 33 village meetings involving community leaders, farmer groups, and women's group representatives, including local extension workers from agriculture, forestry, and BMKG (average of 150 USD/ meeting for materials preparation and logistics).
7. 12 trainings including focus group discussions for participants from farmers groups and women's group representatives (average of 1,300 USD/ 4 days of training for materials preparation and logistics).
8. Travels for project consultants, surveys and training participants.
9. The cost of local project staff and NGO to advocate the integration of local food security and adaptation plans into provincial and district development plans (average 2,000 USD/ person month x 15 months).
10. 50 stakeholders meetings involving key people from local government agencies in the provincial and district level, including university, NGOs, INGOs, and community representatives (average of 200 USD/ meeting for materials preparation and logistics).
11. 4 workshops for the integration of local food security and adaptation plans into district and provincial development plan (average of 6,000 USD/ workshop).
12. Travels for local staff, surveys, and workshop participants.
13. 220 person days with the involvement of national experts (300 USD/ day) and 360 person days for local experts (220 USD/ day) on early warning system for climate-related disasters.
14. 80 meetings involving national BMKG, Ministry of Agriculture, Food Security Agency, and local government agencies from provincial and district level (average of 250 USD/ meeting).
15. IT/early warning system equipment including computers, internet, GIS, telecommunication, and rain gauge (average 5,000 USD/ package).
16. 24 trainings on analysis and interpretation of climate data (historical and forecast) and the mechanism for information distribution and utilization for community representatives from farmer groups and women's groups, including agriculture extension workers and technical officials from sub districts government agencies (average of 5,500 USD/ 14 days of training).
17. Travels for project consultants, surveys, and training participants.
18. The cost of local project staff and NGO to support the lessons learned and knowledge management process from community and local experiences and advocacy for refining and prioritizing climate change adaptation actions, including preparation for the publication materials (average 2,000 USD/ person month x 21 months).
19. Fees of technical experts (300USD/ day x 100 days) to support the joint feasibility assessment on insurance as an input to the national government program 'Farmer Insurance'.
20. 60 meetings involving Food Security Agency, BAPPENAS, Ministry of Environment, DNPI, Ministry of Agriculture, key stakeholders from provincial and districts government agencies including university, NGOs, INGOs, and community representatives (average of 250 USD/ meeting).

21. 3 socialization and dissemination workshops including site visits involving Food Security Agency, BAPPENAS, Ministry of Environment, DNPI, Ministry of Agriculture, key stakeholders from provincial and districts government agencies, including university, NGOs, INGOs, and community representatives (average of 15,000 USD/ workshop).
22. Publication materials including leaflets, flyers, books, video, website, and radio program (average 12,000 USD/ year).
23. Travels for local staff, surveys, and workshop (including site visit) participants.
24. Salaries of local project staff to support the implementation of the activities under output 2.1 (average 2,000 USD/ person/ month x 36 months).
25. Fees of technical experts (220 USD/ person/ day x 240 days) and (300 USD/ day x 300 person days) to support the implementation of the activities under output 2.1.
26. Costs of hardware and inputs used for the establishment of 17 sites (1 site/village) for seed selection, production and storage, including seed trial plots, nurseries and banks (10,000 USD/site) and for the cultivation of 1483 ha of rain fed and irrigated agricultural land (average 250 USD/ha with community contribution).
27. Cash incentives (5 USD/working day) for farmer households participating in the establishment of 17 sites (1 site/village) for seed selection, production and storage and the cultivation of 1483 ha of rain fed and irrigated agricultural land. Total 326,260 working days required, of which 50% paid and 50% voluntary.
28. Costs for conducting 20 trainings of 8 days each on seed selection, production and storage and adapted cultivation techniques, including training materials, rent of training facility, consumptions etc. (average 2,000 USD/ training).
29. Travel costs for local project staff, technical experts, field surveys, and training participants.
30. Salaries of local project staff to support the implementation of the activities under output 2.2 (average 2,000 USD/ person/ month x 32 months).
31. Fees of technical experts (300 USD/ person/ day x 80 days) to support the implementation of the activities under output 2.2.
32. Costs of materials for the construction of 17 commodity collection points (CCPs) (1 CCP/village), post-harvest handling equipment (1 set/CCP), basic food processing equipment (1 set/CCP) and food quality & safety assurance equipment (1 set/CCP) (average 15,000 USD/ CCP x 17 CCPs).
33. Cash incentives (5 USD/working day) for farmer households participating in the establishment of 17 CCPs (1 CCP/village). Total 48,110 working days required, of which 80% paid and 20% voluntary.
34. Costs for conducting 32 trainings of 8 days each on post-harvest handling, storage, basic food processing and food quality & safety assurance, including training materials, rent of training facility, consumptions etc. (average 2,000 USD/ training).
35. Travel costs for local project staff, technical experts, field surveys, and training participants.
36. The cost of local project staff and NGO to support the community in implementing activities related to asset (physical and natural) development (average 4,000 USD/ person month x 36 months).
37. 208 person days with the involvement of local experts (220 USD/ day) to provide technical assistance on the community (physical and natural) assets management including the design and constructions.
38. Construction materials – inputs for development of 11 units of dams (42,000 USD/ unit, with 50:50 cost sharing scheme with local government), 60 units of pumping irrigation (average 160 USD/unit), 60 units of tube wells (40 USD/unit), 21 km of irrigation channel (15,000 USD/ km, with 50:50 cost sharing scheme with local government), 20,000 units of bio pores (20 USD/drill unit for establishing the bio pore, the project will equip each village with 2 drill units), 20 units of water catchment (6,100 USD/ unit, with 50:50 cost sharing scheme with local government), 520 hectares of reforestation (500 USD/ hectare). Another 1,214 hectares of the most critical land to be reforested using government cost sharing scheme. 17 nursery centers (10,000 USD/ unit, with

70:30 cost sharing scheme with local government), and 1,100 agroforestry plots (0.5 ha/plot) (200 USD/plot).

39. Cash incentives (5 USD/ working day) for community participating in the establishment of dams, agroforestry plots, tube wells, pumping, irrigation channels, bio pores, water catchments, and reforestation/afforestation for an estimated 272,064 total workdays, of which 50% voluntary and 50% paid.
40. 32 trainings on community assets management including focus group discussions for participants from farmers groups and women's group representatives (average of 1,300 USD/ 4 days of training for materials preparation and logistics).
41. Travels for local project staff, consultants, field surveys, and training participants.

Annex 3. Project Execution Budget

Description	Budget (US$)
Project Manager	155,165
Support Staff	175,853
Operational cost of Project Office	58,807
Office equipment	15,085
Monitoring and Evaluation	52,000
Travel	67,238
TOTAL	**524,148**

Project Management Fee charged by the Implementing Entity

The Project Management Fee component of the budget covers the costs of management services provided by WFP Headquarters, Asia Regional Bureau, and the Country Office in support of the implementation of the proposed project over its duration. A breakdown of the specific functional areas follows:

Summary of WFP Internal Disbursal Plan	Budget (US$)
Finance, Budget and Treasury Advice	80,790
Programme Support	53,547
Performance Management Support	75,153
Procurement Support	28,182
Information & Telecoms Support	58,713
Evaluation and knowledge management Advice	48,849
Audit and Inspection Support	43,213
Legal Support	40,864
Other	40,395
Total Project Management Fee	469,707

Annex 4. Disbursement Matrix

	Upon Agreement signature	One Year after Project Start	Year 2	Year 3	TOTAL
Scheduled Date	**20 May 2015**	**20 May 2016**	**20 May 2017**	**20 May 2018**	
Project Funds	**1,433,419**	**1,357,728**	**1,400,340**	**1,334,473**	**5,525,959**
Implementing Entity Fee	**234,853**	**93,941**	**70,456**	**70,456**	**469,707**
TOTAL	**1,668,272**	**1,451,669**	**1,470,796**	**1,404,929**	**5,995,666**

Annex 5. Project Implementation Schedule

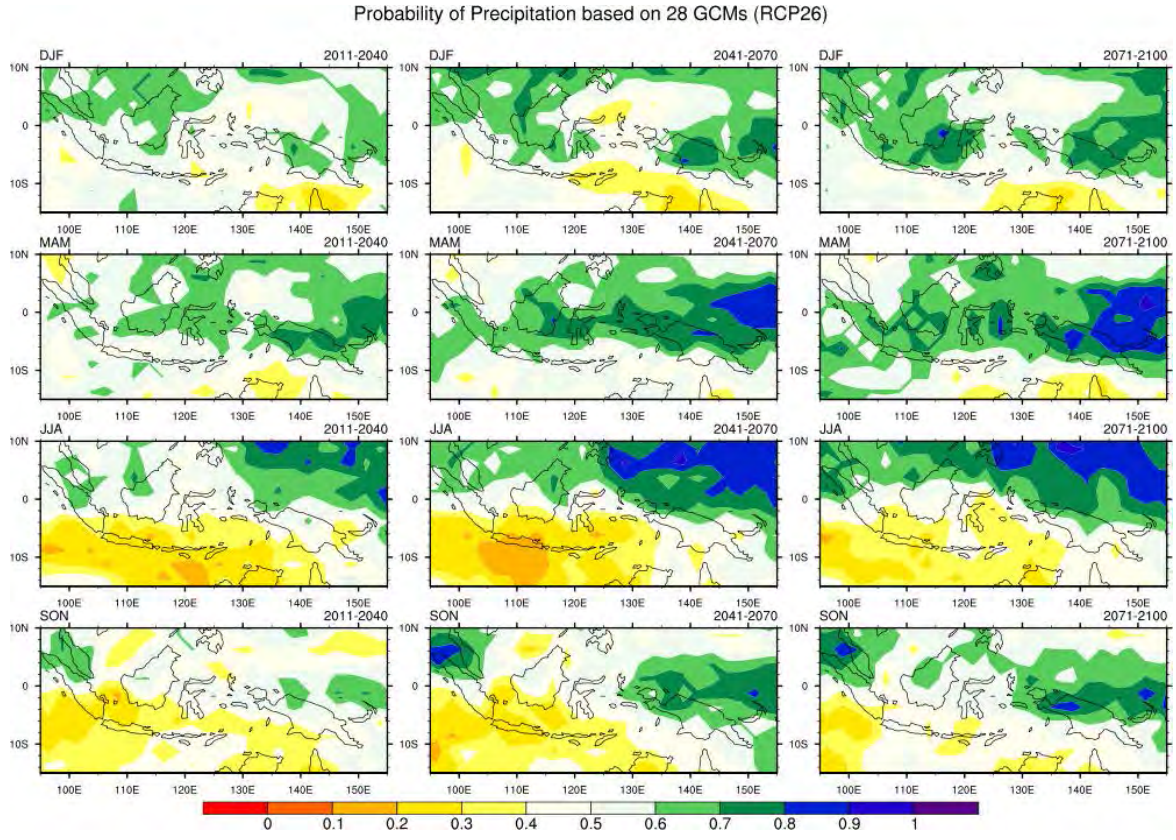
Components and Outputs	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1																
1.1. Extension workers, local government officers at village and district levels are trained and mobilized to (i) assess climate risk under different land use scenarios, (ii) improve management of land and water resources	→															
1.2. Community members and farmer organizations are trained and mobilized to (i) design and monitor the implementation of local climate change adaptation plans that address gender specific issues and vulnerable groups, (ii) ensure anthropogenic causes of land degradation are addressed by the community to complement community efforts to self-police negative practices resulting in land degradation by improved law enforcement	→															
1.3. Local food security and adaptation plans are integrated with district and provincial development plans, and a climate-sensitive integrated Master Plan for watershed management is developed.	→															
1.4. An early warning system for climate-related disasters in target sub-districts is designed, implemented and maintained.		→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
1.5. Lessons learned from community and local experience are shared and used for refining and prioritizing provincial climate change adaptation actions.						→	→	→	→	→	→	→	→	→	→	→
Component 2																
2.1. A diverse range of suitable crop species and varieties that are tolerant to rainfall variability are selected and cultivated and suitable plants, soil, water and nutrient management practices are applied by the farmers in the up- and downstream areas of Dodokan watershed, resulting in an increase of diversification and yields.				→	→	→	→	→	→	→	→	→	→	→	→	→
2.2. Proper post-harvest handling, storage, basic food processing and food quality and safety assessment steps and methods are applied by the farmers in the up and downstream areas of Dodokan watershed						→	→	→	→	→	→	→	→	→	→	→
2.3. Increased income for vulnerable families through the creation and improvement of natural and physical livelihood assets.				→	→	→	→	→	→	→	→	→	→	→	→	→

Annex 6. Projection of seasonal rainfall in Indonesia based on the analysis of 28 General Circulation models (GCMs) under different scenarios of Representative Concentration Pathways (RCP)

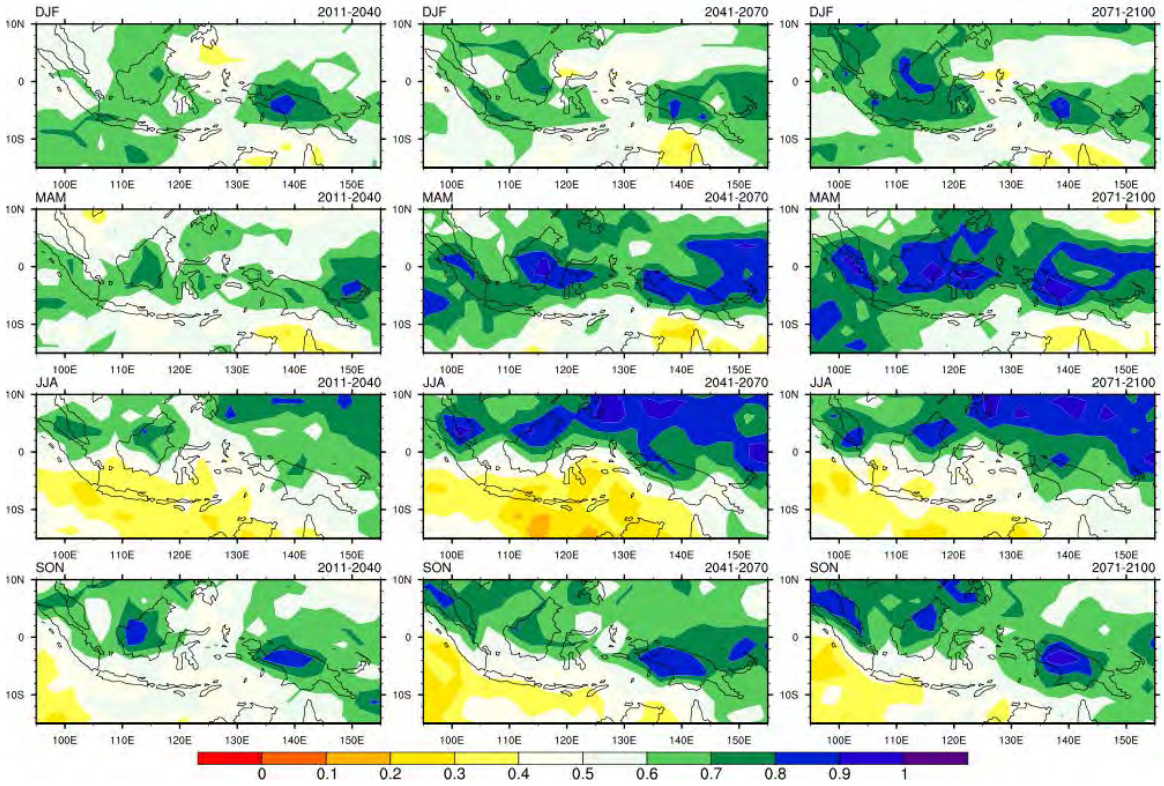
Note: The map shows the projection under the scenario of RCP 2.6, 4.5, 6.0 and 8.5

Red color on the map represents all GCMs analysis consistently proves a decrease in seasonal rainfall. **Dark blue color** on the map represents all GCMs analysis consistently proves an increase in seasonal rainfall. **White color** on the map represents half of the GCMs show a decrease and the other half show an increase.

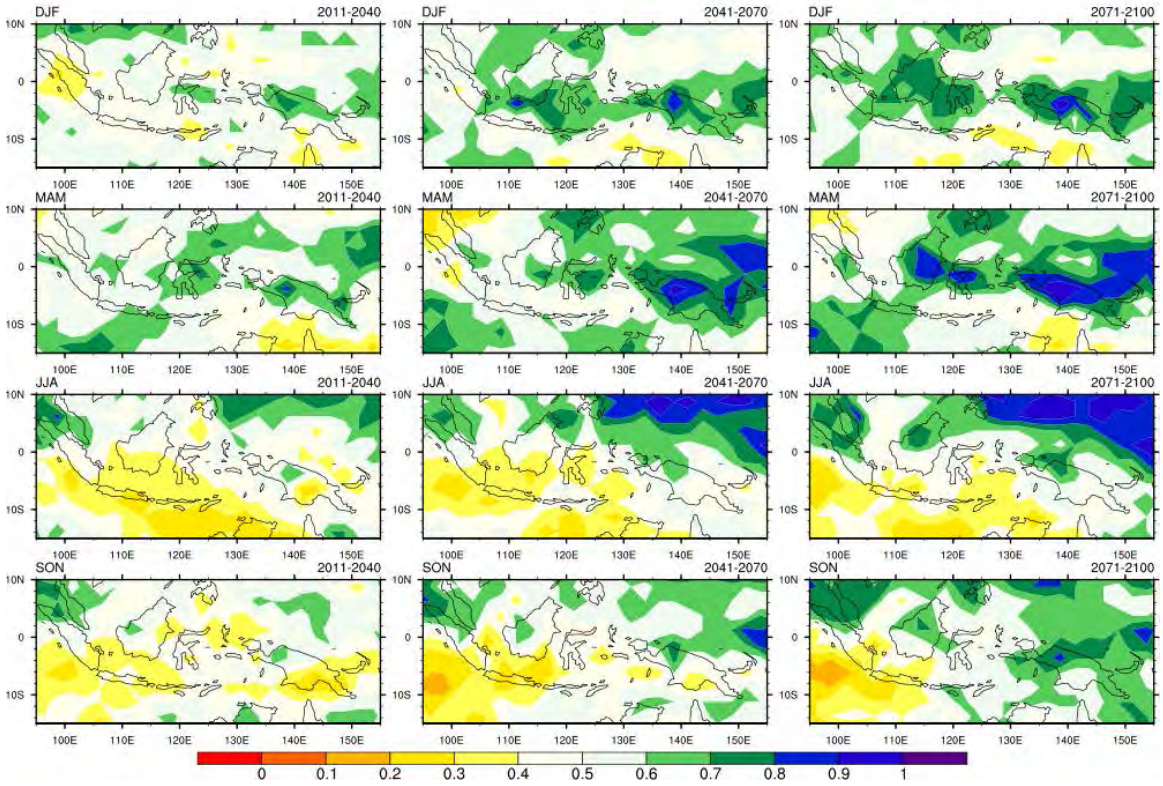
DJF: December-January-February
MAM: March-April-May
JJA: June-July-August
SON: September-October-November

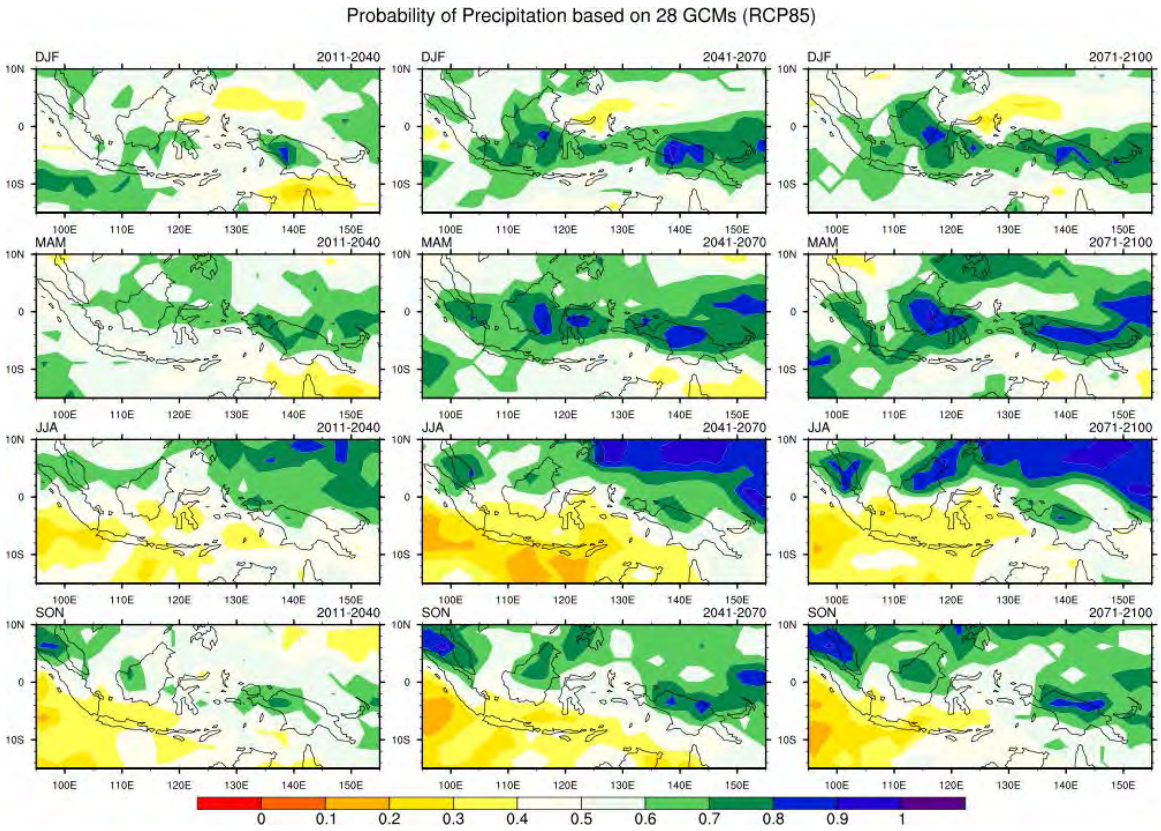


Probability of Precipitation based on 28 GCMs (RCP45)

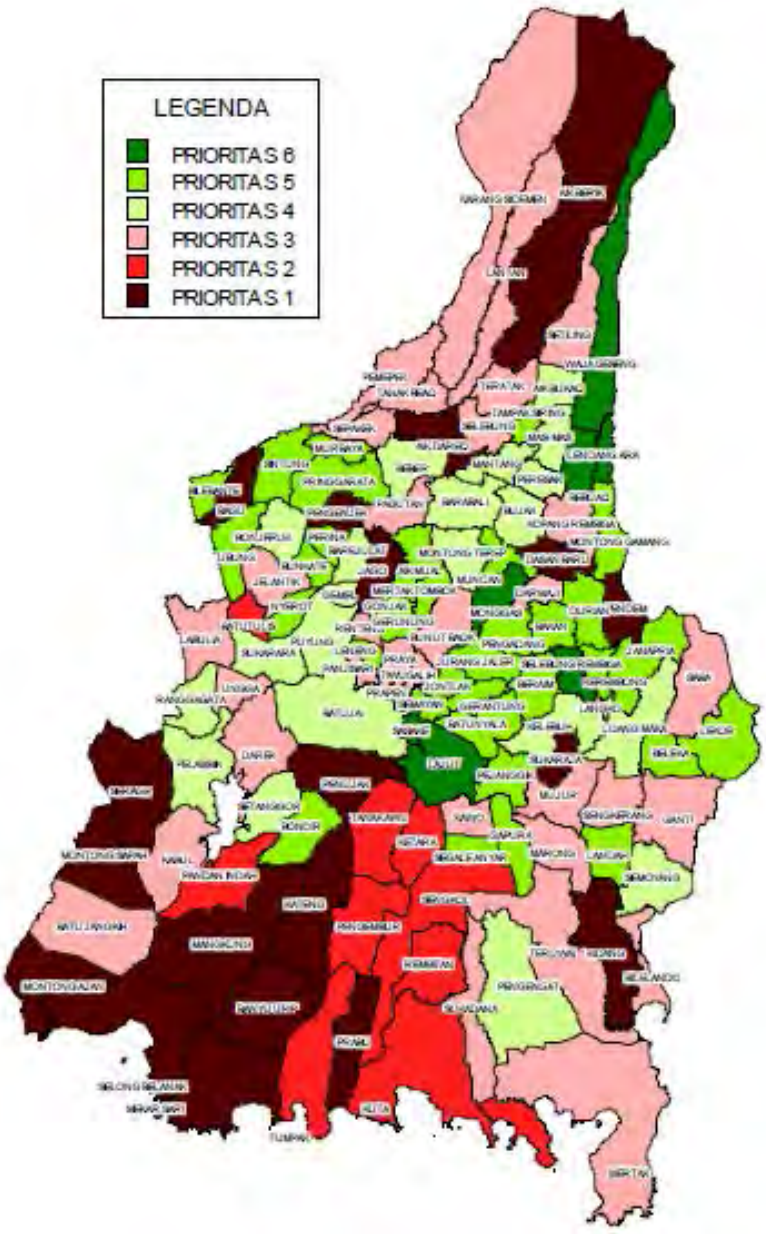


Probability of Precipitation based on 20 GCMs (RCP60)



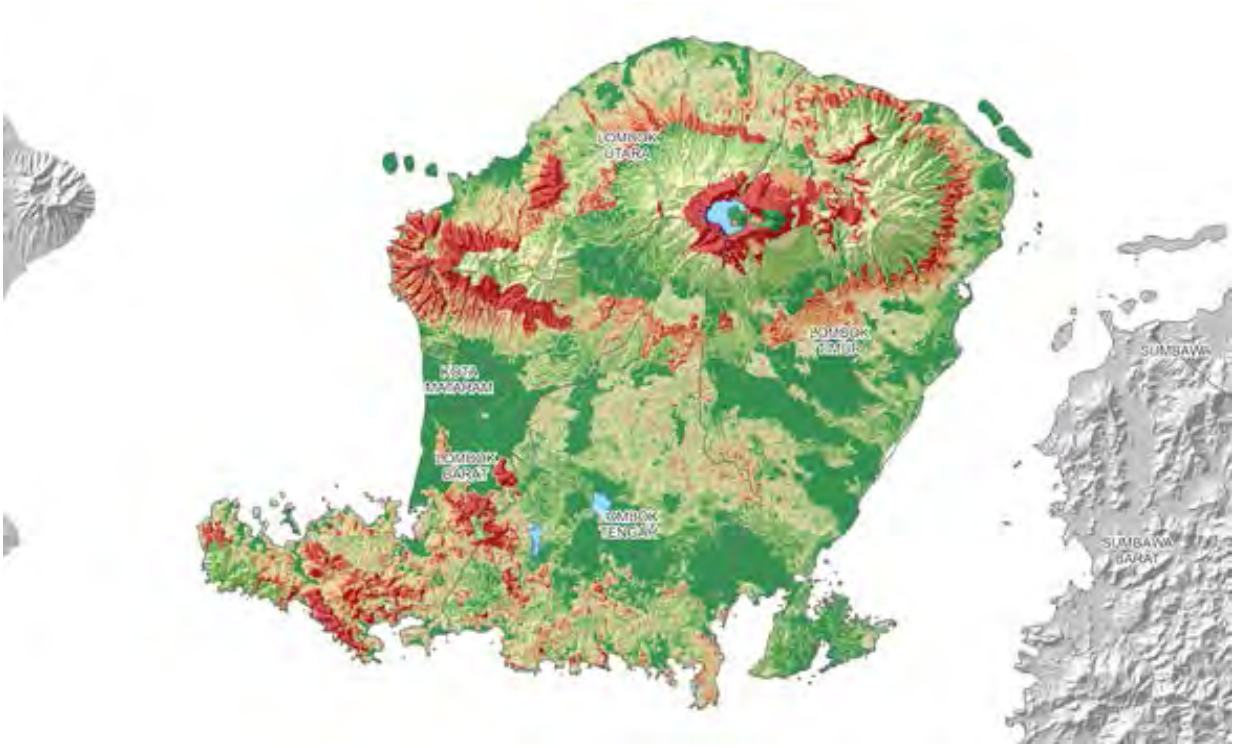

Probability of Precipitation based on 28 GCMs (RCP85)
DJF
2011-2040
DJF
2041-2070
DJF
2071-2100
MAM
2011-2040
MAM
2041-2070
MAM
2071-2100
JJA
2011-2040
JJA
2041-2070
JJA
2071-2100
SON
2011-2040
SON
2041-2070
SON
2071-2100
10N
0
10S
100E
110E
120E
130E
140E
150E
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1

Annex 7. Food Security Atlas of Central Lombok District

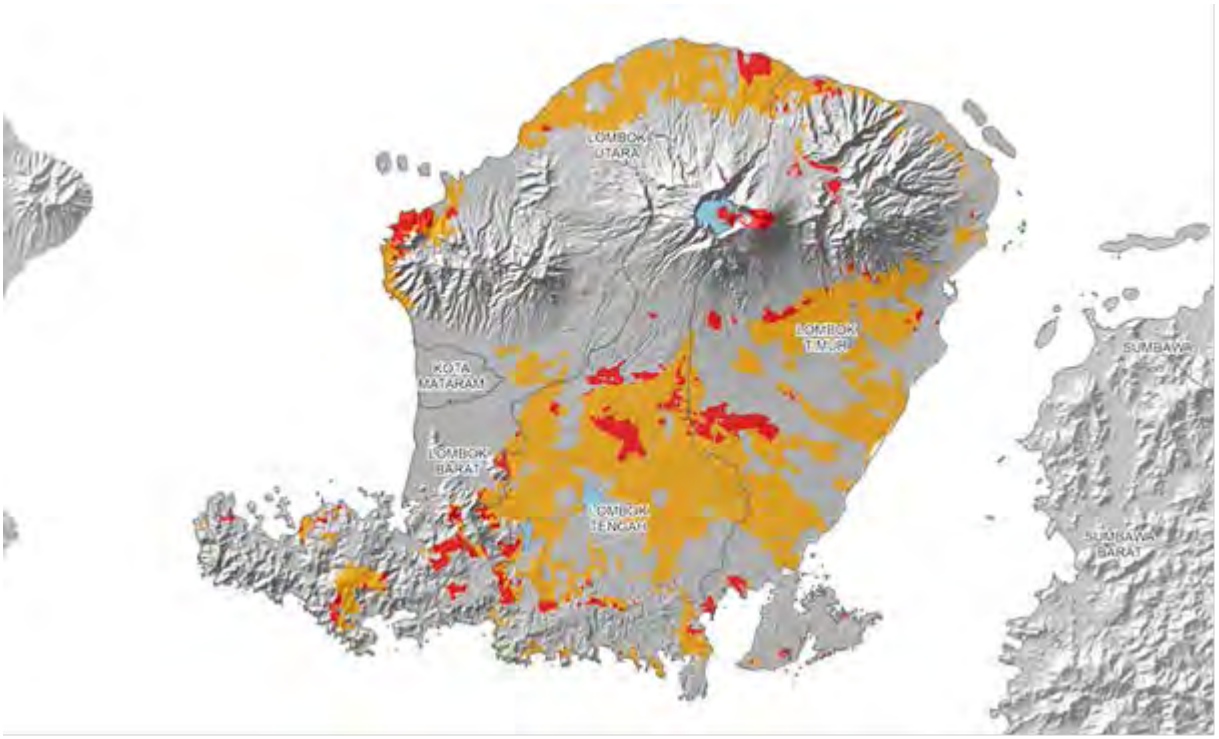


Source: Food Security Agency (BKP) of Central Lombok District 2013

Annex 8. Land Erosion potential Risk and Reforestation Priority Map of Lombok Island



Land Erosion potential Risk
(Red=very high risk, yellow= high risk, light green=medium risk, green=low risk)



Reforestation Priority Map
(Red=very degraded land, yellow=degraded land)

Annex 9. Village Vulnerability Matrix Analysis

Location (villages)	Population (PODES 2011)	Number of HH (PODES 2011)	Climate change risks (rainfall variability)		Food Security	Degraded land		Rain fed agriculture area	Total agriculture area	Priority for adaptation support
			Harvest failure	Land erosion						
			(risk level)	(risk level)	(vulnerability level)	Very critical (ha)	Critical (ha)	(ha)	(ha)	
LOMBOK TENGAH DISTRICT										
BATUKLIANG SUB DISTRICT			**medium**	**high-very high**				0	2362	
AIK DAREQ	9,292	2,321	medium	high-very high	1	288	318			2
BARABALI	11,273	3,687	medium	high-very high	4	124	783			
BEBER	8,169	3,217	medium	high-very high	4	24	697			
BUJAK	8,047	2,933	medium	high-very high	4	2	630			
MANTANG	8,216	2,960	medium	high-very high	4		445			
PAGUTAN	6,859	2,549	medium	high-very high	3	209	331			
PERESAK	6,358	2,568	medium	high-very high	4	90	256			
SELEBUNG	7,029	2,565	medium	high-very high	3	81	229			
TAMPAK SIRING	4,512	1,678	medium	high-very high	5	88	170			
BATUKLIANG UTARA SUB DISTRICT			**medium**	**medium-high**				0	1777	
AIK BUKAK	7,421	2,413	medium	medium-high	1	62	148			2
AIK BERIK	6,699	2,253	medium	medium-high	4					
KARANG SIDEMEN	5,383	1,981	medium	medium-high	3	45				
LANTAN	4,665	4,674	medium	medium-high	3	3				
MAS-MAS	4,274	1,684	medium	medium-high	4		475			
SETILING	6,382	2,281	medium	medium-high	3		11			
TANAK BEAQ	5,751	1,769	medium	medium-high	3	277				
TERATAK	7,570	2,568	medium	medium-high	3	116				
JANAPRIA SUB DISTRICT			**low-medium-high**	**medium**				1796	6075	
BAKAN	5,438	1,834	low-medium-high	medium	5		540			
DURIAN	2,965	1,028	low-medium-high	medium	5		615			

Location (villages)	Population (PODES 2011)	Number of HH (PODES 2011)	Climate change risks (rainfall variability)		Food Security	Degraded land		Rain fed agriculture area	Total agriculture area	Priority for adaptation support
			Harvest failure	Land erosion						
			(risk level)	(risk level)	(vulnerability level)	Very critical (ha)	Critical (ha)	(ha)	(ha)	
JANAPRIA	8,319	2,450	low-medium-high	medium	5		1,064			
KEREMBONG	6,030	2,123	low-medium-high	medium	5		308			
LANGKO	4,556	1,481	low-medium-high	medium	3		42			
LEKOR	9,248	3,283	low-medium-high	medium	5		1,104			
LOANG MAKA	8,702	3,079	low-medium-high	medium	4		1,210			
PENDEM	6,760	2,153	low-medium-high	medium	1		534			3
SABA	6,402	2,143	low-medium-high	medium	3		1,210			
SELEBUNG	4,451	1,996	low-medium-high	medium	6		371			
JONGGAT SUB DISTRICT			**low**	**medium**				0	4900	
BAREJULAT	6,452	2,487	low	medium	4		166			
BATUTULIS	2,774	1,143	low	medium	2		296			
BONJERUK	8,662	3,208	low	medium	4	2	573			
BUNKATE	2,872	1,193	low	medium	5		36			
GEMEL	3,878	1,559	low	medium	4		123			
JELANTIK	8,860	2,863	low	medium	3		641			
LABULIA	9,612	3,395	low	medium	3	131	641			
NYEROT	4,432	1,428	low	medium	5		320			
PENGENJEK	9,963	3,346	low	medium	1		61			
PERINA	3,072	1,127	low	medium	5		0			
PUYUNG	11,035	3,078	low	medium	4		781			
SUKARARA	8,730	3,086	low	medium	4		695			
UBUNG	9,978	2,626	low	medium	5		657			
KOPANG SUB DISTRICT			**medium**	**medium**				313	3197	
BEBUAQ	5,934	1,992	medium	medium	6	265	209			
DARMAJI	7,007	1,958	medium	medium	3	1	277			

Location (villages)	Population (PODES 2011)	Number of HH (PODES 2011)	Climate change risks (rainfall variability)		Food Security	Degraded land		Rain fed agriculture area	Total agriculture area	Priority for adaptation support
			Harvest failure	Land erosion						
			(risk level)	(risk level)	(vulnerability level)	Very critical (ha)	Critical (ha)	(ha)	(ha)	
DASAN BARU	9,055	3,555	medium	medium	1		430			3
KOPANG REMBIGA	13,444	4,512	medium	medium	3	77	365			
LENDANG ARA	4,038	1,154	medium	medium	6	38	207			
MONGGAS	6,312	2,717	medium	medium	6	215	303			
MONTONG	10,826	4,002	medium	medium	5	150	462			
MUNCAN	7,195	9,079	medium	medium	5	131	227			
WAJA GESENG	7,844	2,276	medium	medium	6	163	690			
PRAYA SUB DISTRICT			**high-medium-low**	**medium**				0	3336	
AIK MUAL	5,986	1,532	high-medium-low	medium	5	275	285			
BUNUT BAOK	8,766	2,497	high-medium-low	medium	3	200	517			
GERUNUNG	5,380	1,589	high-medium-low	medium	5		424			
GONJAK	4,242	1,251	high-medium-low	medium	5		96			
JAGO	8,666	2,561	high-medium-low	medium	1	0	586			3
LENENG	7,614	2,060	high-medium-low	medium	5		12			
MERTAK TOMBOK	5,422	1,542	high-medium-low	medium	5	6	294			
MONTONG TEREP	9,901	3,038	high-medium-low	medium	4	629	43			
PANJISARI	3,111		high-medium-low	medium	3		58			
PRAYA	11,468	3,357	high-medium-low	medium	3		157			
RENTENG	4,468	1,594	high-medium-low	medium	3		179			
SEMAYAN	4,829	1,559	high-medium-low	medium	5		99			
TIWUGALIH	9,774	2,651	high-medium-low	medium	3		71			
PRAYA BARAT SUB DISTRICT			**high-medium**	**high-very high**				2429	6297	
BANYU URIP	4,733	1,567	high-medium	high-very high	1	241	181			2
BATUJAI	13,783	4,677	high-medium	high-very high	4	2	823			
BONDIR	7,661	2,466	high-medium	high-very high	5		315			

Location (villages)	Population (PODES 2011)	Number of HH (PODES 2011)	Climate change risks (rainfall variability)		Food Security	Degraded land		Rain fed agriculture area	Total agriculture area	Priority for adaptation support
			Harvest failure	Land erosion						
			(risk level)	(risk level)	(vulnerability level)	Very critical (ha)	Critical (ha)	(ha)	(ha)	
KATENG	7,138	2,129	high-medium	high-very high	1	22	748			2
MANGKUNG	10,931	3,679	high-medium	high-very high	1	476	995			2
MEKAR SARI	4,766	1,590	high-medium	high-very high	1		234			3
PENUJAK	10,943	3,441	high-medium	high-very high	1		269			3
SELONG BELANAK	4,418	1,693	high-medium	high-very high	1	5	199			2
SETANGGOR	2,581	1,452	high-medium	high-very high	4		536			
PRAYA BARAT DAYA SUB DISTRICT			**high-very high**	**high-very high**				2357	5460	
BATU JANGKIH	5,238	2,301	high-very high	high-very high	3	198	15			
DAREK	7,368	2,480	high-very high	high-very high	3	2	1,196			
KABUL	5,281	2,290	high-very high	high-very high	3	409	268			
MONTONG AJAN	4,701	1,705	high-very high	high-very high	1	70	0			1
MONTONG SAPAH	3,372	1,247	high-very high	high-very high	1	225	171			1
PANDAN INDAH	4,253	1,693	high-very high	high-very high	2	29	420			
PELAMBIK	6,271	2,463	high-very high	high-very high	4	4	820			
RANGGAGATA	4,270	1,418	high-very high	high-very high	4		464			
SERAGE	2,091		high-very high	high-very high	1	317	385			1
UNGGA	6,506	2,409	high-very high	high-very high	3		414			
PRAYA TENGAH SUB DISTRICT			**low-high**	**low**				0	4605	
BATUNYALA	6,798	2,273	low-high	low	5		604			
BERAIM	5,845	2,348	low-high	low	5		485			
GERANTUNG	3,270	1,191	low-high	low	5		332			
JONTLAK	5,779	1,542	low-high	low	5		235			
JURANG JALER	3,308	1,104	low-high	low	5		587			
KELEBUH	6,858	2,805	low-high	low	4		726			
LAJUT	7,539	2,261	low-high	low	6		242			

Location (villages)	Population (PODES 2011)	Number of HH (PODES 2011)	Climate change risks (rainfall variability)		Food Security	Degraded land		Rain fed agriculture area	Total agriculture area	Priority for adaptation support
			Harvest failure	Land erosion						
			(risk level)	(risk level)	(vulnerability level)	Very critical (ha)	Critical (ha)	(ha)	(ha)	
PEJANGGIK	6,010	2,023	low-high	low	5		569			
PENGADANG	8,895	3,187	low-high	low	5	25	443			
SASAKE	2,996		low-high	low	6		1			
PRAYA TIMUR SUB DISTRICT			**medium-high**	**low**				168	7018	
BELEKA	7,605	2,847	medium-high	low	5		307			
BILELANDO	2,929	1,058	medium-high	low	3	112	13			
GANTI	10,647	3,756	medium-high	low	3		180			
KIDANG	5,903	2,036	medium-high	low	1	26	340			
LANDAH	4,635	1,717	medium-high	low	5		91			
MARONG	5,847	2,188	medium-high	low	3		654			
MUJUR	7,760	2,464	medium-high	low	3		817			
SENGKERANG	6,853	2,776	medium-high	low	3		665			
SUKARAJA	4,136	1,351	medium-high	low	1		367			
PRINGGARATA SUB DISTRICT			**low**	**low**				0	2455	
BAGU	5,651	2,080	low	low	1		495			
BILEBANTE	3,148	1,033	low	low	5		2			
MURBAYA	5,152	1,540	low	low	5	2	17			
PEMEPEK	7,248	2,313	low	low	3	3				
PRINGGARATA	9,996	2,824	low	low	5	125	421			
SEPAKEK	6,315	2,121	low	low	3	130	24			
SINTUNG	7,699	2,231	low	low	5	43	645			
PUJUT SUB DISTRICT			**high-very high**	**high**				5390	6875	
GAPURA	2,631		high-very high	high	5		208			
KAWO	9,705	2,917	high-very high	high	3		40			
KETARA	4,106	1,285	high-very high	high	2		163			

Location (villages)	Population (PODES 2011)	Number of HH (PODES 2011)	Climate change risks (rainfall variability)		Food Security	Degraded land		Rain fed agriculture area	Total agriculture area	Priority for adaptation support
			Harvest failure	Land erosion						
			(risk level)	(risk level)	(vulnerability level)	Very critical (ha)	Critical (ha)	(ha)	(ha)	
KUTA	7,653	2,175	high-very high	high	2	29	120			
MERTAK	7,476	2,760	high-very high	high	3	134	1,006			
PENGEMBUR	8,882	3,452	high-very high	high	2	58	632			
PENGENGAT	5,525	2,073	high-very high	high	4	7	69			
PRABU	3,810	1,266	high-very high	high	1	29	30			1
REMBITAN	7,461	2,146	high-very high	high	2	100	294			
SENGKOL	10,391	3,419	high-very high	high	2	92	450			
SUKADANA	4,963	1,793	high-very high	high	3	27	91			
TANAK AWU	8,624	2,798	high-very high	high	2		199			
TERUWAI	5,139	1,931	high-very high	high	3	16	922			
TUMPAK	5,127	1,759	high-very high	high	2	50	76			
JEROWARU SUB DISTRICT			**high**	**low**				423	4070	
BATUNAMPAR	1,824		high	low	1	146	52			3
JEROWARU	9,693		high	low	5		1,145			
PANDAN WANGI	7,943		high	low	6	22	98			
PEMONGKONG	3,831		high	low	5	83	121			
SEKAROH	3,688		high	low	1	168				3
SUKARAJA	3,485		high	low	5	269	42			
TOTAL	**829,457**	**279,893**				**7,387**	**45,946**	12876	58427	

Annex 10. Community Consultations

Analysis of FGD Result in Loang Maka Village, Janapria Sub District

Participants representing village community:
Adult Male : 22
Adult Female : 12
Young Male : 12
Young female : 12

Issues	Women Group	Men Group	Youth Group	Conclusion
A. Current Livelihood **a. What is your perception or what do you know about livelihoods?**	• People have to work to live their life • They think about how to support the children's education financially. Meanwhile, they only get IDR 15.000-20.000 per day. They get down payment from the handicraft broker. • Livelihood in the village is too difficult	The live is getting harder. Many students are dropped out. Only migrant worker's familiies are in better condition.	The main livelihood in the village are: waged labourers in tobacco and rice farms. Handicraft workers and migration outside of the village.	The men's and women's understanding about livelihood are almost the same, which they said the livelihood in the village is very tough, but women are more focused on the children's education. They think about how to find money for the children's schooling. For the youth, the current livelihood is traditional labor farming, so that the yields from time to time have not been changed a lot.

Issues	Women Group	Men Group	Youth Group	Conclusion
b. What kinds of livelihood activities are there in the village? Which of these do men do, which of these do women do? Why are these different?	• Farmers, waged labourers (rice tobacco), rattan handicraft labourers, home-based traders, tailors, house wives. • Men livelihood: waged labourers (rice and tobacco), construction labourers, migrant workers (Malaysia and Saudi Arabia), antiques businessmen (sending antiques to Bali), tailor. • Payment for men is different from payment for women. Men are paid IDR 25,000 women are paid IDR 15,000 because types and length of work are different. • Women livelihood: waged labourers (rice and tobacco), handicraft labourers, tailors, housewives, migrant workers to Malaysia and Saudi Arabia. Migrant workers to Saudi Arabia have better livelihood than others because the payment is higher. • There are some obstacles for women to go work as migrant workers such as prohibition from husbands and parents. Perseption about women migrant workers is not good in the community. However, there are some women desperately go for doing migrant work in order to support their children's needs. • Woman migrant workers are more prosperous than man migrant workers because they are able to buy a motorcylce each and to spend their money for the children's education. The women also are able to save their moneyand sometime leave and forget	• Waged labourers, tobacco, informal gold miners, public civil servants, migrant workers to Malaysia, part time teachers, farmers, construction labourers, carpenters, massons, and rice mill labourers. Handicraft labourers. • 60% of the residents go to Malaysia as migrant workers for their life and their children's education. • The migrant workers are considered well off if they are able to send money for their wife, for example IDR one million a month. Hence it will enough to support their children's education until they become nurses or teachers. And they are able to buy houses and vehicles. • People get together in the groups of reading Al Qur'an, which is help every week. • Men do not involve in Posyandu (Integrated sevices post) for women and children's health because it is considered as "women's job". Men cannpt work patiently. • Women face big ostacle to work as migrant workers because the parents or husband do not allow them to work. So, they usually escape from home and tell the family about their purpose to go to Malaysia for migrant workers after they arrive in Jakarta. Women	• Being farmers is a custom livelihood in the village, so that the yield they get almost similar every harvesting time. • Since 1982, tobacco has brought changes to the people's livelihood. They are better off recently. • The youth's voice has not been heard in the village meetings. • Men's livelihoods: informal/illegal gold miners, civil servant officers, migrant workers to Malaysia and Saudi Arabia, farmers, waged labourers, part time techers, public motorcycle riders (ojek), mechanic, and construction labourers. • Women's livelihoods are hadicraft workers, small traders, and waged labourers. • Men and women are different in their livelihoods. Eventhough they are waged labourers, their payment is different because men are the head of their households. Men took the main responsibilities for the economy of their family. Men are also stronger than women. Meanwhile the women's mobility is smaller than men's, because the social norm limits it. Men are considered	Women's access to the sources of income is more difficult than men's. There are many obstacles for women as they have to do house chores and care of household affairs. Meanwhile, men are considered stronger than women (stereotype attitude in the village) However, men and women have equal participation in job opportunities. As migrant workers (TKW), many women got discriminatory treatments such as harassments in their workplaces. Women's control on determining the kinds of jobs they will do is also limited. The control is dominated by the husband, parents, or the norms.

Issues	Women Group	Men Group	Youth Group	Conclusion
	their wife. • Reading al qur'an every night • High divorce rate because the husbands make love affairs to other women, hence the children are abandoned. • Many women have ecperienced domestic violence. They escape d to their parent's houses so that the parents bore the double burden. • Women are rarely invited to the village meetings, except in the meetings Posyandu (Integrated sevices post) cadres for children and women health.	desperately go as migrant workers for some reasons, such as big clashes with the husband or parents or painful economic condition. • Women also manage their small shops, look after cattles, raise poultry from the government assistance, look after cattles from the government program such as BSS (the world of thousands cattles). • The livelihoods between men and women are different. The livelihoods between men and women are diffwrwent because of the power and aility in doing the work. It is impossible for women to plow the soil because community see that work is ethically inapproriate for women. Women should be protected from doing such "hard" jobs, because women are weaker human being.	stronger and faster than women. • Women work as migrant workers because they are widows or separated marriage, but men can be migrant workers because their living needs, because widows or separated women are considered more secured in looking after their self compared to young unmarried women.	
c. Which are the most dominant livelihood activities in the village? Are people who do this livelihood activity well off or not? Why? Why not?	• The dominant livelihoods are waged laborers, handicraft workers, migrant workers (TKI/TKW). • Waged labourers are the poorest because their income cannot cover their daily needs. • Meanwhile, handicraft workers are more secure because if they need money, they can get the down payment from their bosses. • Handicraft bosses are better off than waged labourers and handicraft workers. If they are success in their business they are	• farmers, waged labourers and handicraft workers are not well off because, especially for farmers they have to buy inputs for their farm business but they can only sell the yields in very low price. Meanwhile the payment of waged labourers and handicraft workers is very low. • migrant workers' life is better off than others.	• Farmers, waged labourers, handicraft workers, and migrant workers . • The land owner farmers are better off than waged labourers • Men migrat workers are better off than women migrant workers. Men migrant workers are able to buy houses, motorcycles and more wives. But women migrant workers sometimes are not paid by their bosses or paid with very low	The most dominant activities are being farmers, waged laborers, handicraft workers, migrant workers (TKI/TKW). From the aspect of benefits, men and women are more well off if they work as migrant workers compared to other livelihoods. Men tend to use their income from doing migrant works for their selves, but the women migrant workers tend to use the money for the

Issues	Women Group	Men Group	Youth Group	Conclusion
	able to support their children's education into higher levels and get better jobs such as teachers or nurses. Even they are able to buy motocycles or cars.		rate. Many women have very low skills, and they got harrassment.	children's needs.
d. What kinds of food do people usually eat on an everyday basis? When do you eat this kind of foods? Season? Time of day?	Everyday food: rice, vegetables, tofu, and tempeh. Sometime: fish, eggs, and chicken (once a week or a month). Very rare: meat (in big events or parties).	• Rice is the main food (stapple diet) of people in the village. They eat it everyday. • Fish (twice a week), chicken and meat (only in big parties), tofu and tempeh. • People consume vegetables everyday. They get them from their own fields, such as sweet potato, kangkoong, soybean, long bean, etc.	• Rice is consumed veryday. Sweet potato is for snack. • Daily vegetables are legumes, kangkoong, sesbania leaves, tofu and tempeh • Chicken and meat are consumed only in big events or parties.	The kinds of foods are consumed everyday: rice, sweet potatoes (for snack), legumes, kangkong, sesbania leaves, tofu, and tempeh. Fish and eggs are eaten once a week. Chicken (rarely), meat (only in big religious events or in big parties),
e. Is there people in the village who have limited access to food? Who? Why? When?	• No one is food insecured in the village. In the harvesting season, some of the yield is sold and the rest of it is stored, hence the people are able to ensure their food availability for the next 5 months (before the next harvesting season will be coming). So, the farmers and waged labourers are always food secured. • To pay the children's education, the people do handicraft work, and they can get down payment if necessary. The system is very helpful for the people'slivelihood.	• No one in the village is food insecured. The problem is only in the distribution of the food. • The people help each other in providing food. If some people did not have any food, their neighbours will give them food. • Other people also borrow grain from their neighbours but they usually give higher amount of the grain back from the amount they have borrowed.	None is food insecured because people help each other. But, it is little bit difficult in lean season.	No one is food insecure because people in the village help each other. But in the lean season, food is rather difficult to get, especially for the farmers, because after harvesting, they usually sell almost the entire rice yield.
B. Future Livelihoods and Change **a. Define the future**	The answers are various: the next 2, 3, 4, 5, 7, 8, and 10 to 15 years.	• 1000 years to go. God determines the future. 2,3 5 years	• The time that will come; the time when they get old; now on;	The people's perception in Loang Maka about the future is

Issues	Women Group	Men Group	Youth Group	Conclusion
			after they turn 40 years old. 15 years to go; the time that always we think about; the time that is always changed; the time when we get anything in our dream; 2,3,4,5,7 years.	various. Men, women, and youth have different definition about "future"
b. How did the past differ from now and WHY?	• People are better educated because the schools distance are closed and reachable. • In the past, there are many poor people, but now handicraft brokers are available in the village so that the people in the village know where they will sell their handicraft. • There are less and less people go to Malaysia for doing migrant work. • Better alleys have led to better economic condition in the village • Groups of reading Al qur'an have helped the people to spiritual refreshment • Women income have been increased • the people activities in the village have been increased. Many people work as traders, but less people work as waged labourers. • No health service in the village , so most of the women in the village deliver their babies with the traditional midwives at their house. • In the past, there were inadequate houses in the village, but since many people go for migrant work, there have been good houses built in the village. • In the past, there were many cattle robberies. However, recently, independent patrolling and AWIQ-AWIQ	• People had eaten rice, maize, sweet potato, sagoo, and bulgur until 1975. Now they eat rice. • In the past, people use rainfed in their farm, but since Soeharto era, people have irrigation system. The people's live then have been better off. • Live activities have been increased in the village • Now, the population have been increased, less farming lands and more buildings of houses, leads to less farmers and waged labourers. • The development in the village was better in the future compared to current condition because of the direct selection of the leaders. • Some people have their own artshops • The business competition has been increased. • High rates of divorce are getting higher • Gotong royong (mutual assistance) are getting lower.	• In the past there was no electricity but now they have. So people have access to information (TV and radio). The carpenters also have more ideas to use the electricity to develop their business. Such as wood shaving. • In the past, the people used cow for land preparation but now they use tractor. • In the past, many people used cidomo or on food to go somewhere, but now, most people use motorcycle. • Gotong royong has been decreased. People are more materialistic. They will help others if they are paid.	There are some differences between the current and the past. Almost all of participants (men, women, and youth) said the conditions between present and the past are different. The differences occurred because of the technology advancement, which make the people work efficiently.

Issues	Women Group	Men Group	Youth Group	Conclusion
	have scared the robbers because if any of the residents are catched of robbing or stealing, they will be soaked in the river for 3 hours (based on the AWIQ-AWIQ rules) • Many people get married during harvesting season, but recently there have been lower divorce rate (they have felt it since 2010). Hence, for men who are poligamy, their incomes are devided between the first and the second wife. Their children are neglected as their father cannot give enough attention anymore, while their custody is under the mother's hand.			
C. Climate Change **a. Observation to climate change and population growth and the time when it happen**	• Since 2012, the climate has been changed. The weather has been very hot. • The village has been denser since the last 5 years • Some participants felt that there were not much change in the village for the environment and the people. Everything is the same and in normal condition. There is no much population change • Uncertain season. Too much water caused the broken roads.	• Climate change: more rain in recent 2 to 3 hours. • The impact are worse road infrastructures, higher population, less sorces of income, more unemployment. • Rice and tobacco are destroyed. The price is lower for the yields. • The food supplies have been worse	• The climate has been unpredictable since 2012 that leads to the change in crop planting patterns. • Less information about family planning program from the government hence the population is getting higher. The daily needs have been increased. Therefore, many people go oversea to be migrant workers. Sources of income in the village have been decreased. The farm lands getting smaller because peole build houses. It has been so denser in the village since seven years ago. • The environment is not as clean	The main change is population, which has been higher. The natural change such as climate has been unpredictable.

Issues	Women Group	Men Group	Youth Group	Conclusion
			as it was in the past. The safety has been worse. Many bulglars and robberies.	
b. Impact of the change	• The impact are the rice yield have been destroyed, Therefore, the rice price has been more expensive. • It's quite difficult to get vegetable for free because everything should be bought. • Raw materials are difficult to get because of the limited numbers of the materials. • Lack of access to information	• The condition is more difficult. The quality of the rice yield is getting worse. The price is much lower if the people store it longer. So people sell the grain little bit soon makes the rice stock is lower. • The planting schedule is a month later than the usual schedule. • Since people have planted tobacco, deforestration is getting worse.	• Everyone rely on Raskin (rice for poor) because the rice yileds from their own farm is not high. • Many people go oversea as migrant workers. • The numbers of cattle farmers have been reduced as the safety issue (robbery) and nepotism in government assistance programs of cattle. • People usually get loan or borrow rice from the neighbors in order to fulfil their daily needs. • During lean season, people rely on anything grows on the field for vegetable. So, during the lean season, people do not eat tofu, tempeh, meat, and chicken, they eat rice and vegetables only. • Waged labourers are food secured because they store the grain they got from harvesting season and they usually do not sell it. • High population growth • Technology advancement (TV and mobilephone) • More advanced mindset as the higher level of education.	The life situation has been more difficult The quality of the yields have been decreased More people want to be migrant workers More limited foods The pattern of consumption. People only eat vegetables and rice with no source of protein such as meat, eggs, etc. The raw materials for handicrafts are more difficult More difficult to get financial support

Issues	Women Group	Men Group	Youth Group	Conclusion
			• Cultural change and climate changehave changed the cropping pattern in the village.	
c. The source of information about weather and season	• They have heard the information from TV and schools about weather. • the right time to start planting is known from local wisdom in each village. There is no any special forcaster who is able to predict the weather.	Newspaper, radio, TV, government, or the farmers' senses.	From TV, radio, newspaper, family or relatives, extension activities, from shaman.	Newspapers, Radio, TV, schools, extension programmes, and traditional ways (from a chief who is able to do weather forecasting)
d. Will the livelihood be the same between men and women in the future? Why will they be the same or different	Women: better level of education, higher income, less religious, many women small trades, less women waged labourers. Men: better level of education, less migrant workers, less men waged labourers, and more artshop owners. Why? Because the school facilities are easier to reach. More women work as tradres, because it is more profitable and less farm lands. Men have more opportunities to own artshops as the tourism has been developped	It will be some differences. Women: Cleaning service, house assistants. High rate of divorce. Many women will go out of their house to work, such as in malls and hospitals. Better education. The jobs in the future will be: migrant worker, prostitute, and teacher. Men: Civillian, unemployment, migrant workers, and better education. Why? Because anything is valued by money. The farm lands are smaller, less job opportunities, and lack of financial support for their children's education.	Women; • Teachers, cullinary sellers, small traders, house assistant, career women, beauty salon, and designer. • Gender equality has been accepted by people. Women have important position in community. House utilities are easy to get. More and more women are successful. Men: • Many unemployed men • Some of them work in private sectors • Men and women compete in livelihood. • Many women like to poligamy • They like to have luxurious stuff. Why? Because women are more determined than men. People will recognise women's skills and	-Women: Cleaning service, teachers, culinary business, mill-hands, career women, salon, traders, and migrant workers -Men: Hoodlum, unemployed men, migrant workers (TKI), civil servants, highly educated. - The concept of gender equality is more acceptable in the community - The women's position among the community is considered as very important because women are hard workers.

Issues	Women Group	Men Group	Youth Group	Conclusion
			ability in many aspects.So in 2030, it is predicted that even women will be more succesful.	
D. Adaptation **a. What are the main difficulties they face?**	Currently: • Low education level, limited information • Limited job opportunities • Lack of financial support for doing business. • Poor road infrastructures • Lack of transportation facilities or public transport. • The price of raw materials is very expensive. Future: • Land for agriculture will be converted into buildings for living. • Lack of English skill make it harder in communicate with the tourists. • Higher business competition. • Higher social problems • Limited raw materials for handicraft • Lack of rice seeds so that the farmers have to buy them.	Currently: • Life competitions are getting tighter. Access to cob information or job opportunities are very limited. • Low understanding about climate change • Fertilizer is very expensive and harder to get, meanwhile selling price of the yield is very low.poor access to market place as the road infrastructures are worse. The governmnent have very low attention on this problem. In the future: • smaller farm lands will lead to lower food supply (rice) • hard to get fertilizer • climate is unpredictable.	Currently: • Gap in the old and youth mindsets. Old people cannot accept the youth way of thinking, which is more modern. • People lack of skills and financial support, poor infrsatructure and irrigartion. In the future: • More job opportunities and higher quality of human resources. • Reducing sense of togetherness and mutual assistance • Poor political condition that leads to materialistic orientation. • People are less religious.	The main difficulties: The present: Low level of education, limited job opportunities, limited information, the high price of raw materials for handicrafts, worse infrastructures, the old ones cannot accept the modern thinking, and low knowledge of climate change. In the future: The smaller farm lands, less food availability, more difficult to get fertilizers, the climate will be less predictable, lack skills of communication in foreign language. Higher business competition, higher social problems. Loss of the spirit of mutual assistance.

Issues	Women Group	Men Group	Youth Group	Conclusion
b. What do the households do in order to ensure their food security?	• Men and women have to work. • Job division at domestic level: mother cooking, father looking after kids. • Saving money • Resignition • Improving the handicraft quality	• Making small business, such as small trading • Group of social gathering • No poligamy	• Storing the grains • Saving • Planting two rice varieties, which are the one that is long lasting in storage (up to 6 month) and the one that can be sold earlier. • More innovation in planting system • Fammily planning program to manage the numbers of new born babies.	• Men and women have the same opportunities in public or domestic affairs. • Saving the rice from harvesting season, not selling all of the yields to ensure the food security especially during lean season. • Money saving • To improve the quality of the yields.
c. What should be done in the village level in helping the people to adaptation?	• Provide credit for supporting the people's business • Developing infrastructures • Being closer to community • Giving access of information to community • No corruption • Honest and fair leadership • Making complaining post for women victims of harrassment. • Skill training for handicraft workers.	• Making cooperative for small scale business • Giving training to enhance people's farming skills and knowledge • Maintenance of roads infrastructures. • Maintenance of irrigation system • Training for youth groups in the village such as farming and tailoring.	• Activating all kinds of cooperatives such as village level cooperative, school cooperative, etc) • Providing the post of complaining for land dipute. • Providing centres of training to enhance people's skills • Being closer to community • Building public facilities for community.	• Facilitate the establishment of saving and credit cooperatives, so that the residents will be helped to do their business. • Infrastructure maintenance • To open Access of information • Improving the residences' life skills. • To build the places of worship.
d. What should be done in sub district, district, provincial, and national levels in helping the people to adaptation?	Sub district level: • Open access to information • No corruption • trustworthy leadership Provincial level: • Open access to information • No corruption • trustworthy leadership	Sub district and district levels: • Training, financial support, access to credit, PNPM MP (National Program for Rural Community Empowerment), cooperatives and micro credits, access to information. • For district level: provide employment, work facilities,	Sub district and district levels: • Maintanance of infarastructure, • Provincial level:: • Maintanance of infarastructure, • More distribution of rice and soy bean seeds. But not only those two product, so it needs	In Sub district and provincial levels: • Provide people with necessary training • Support their business financially through providing the saving and credit cooperatives. • Provide employment

Issues	Women Group	Men Group	Youth Group	Conclusion
	• Free education • free healthcare National level: • Open access to information • No corruption • trustworthy leadership • Free education • free healthcare • Government assistance for cash transfers (BLT)	providing agricultural inputs, maintanance of infarastructure, and ensuring safetiness. Provincial level: • Providing employment • Developing public service and subsidy for development • To enhance visits to community in order to be closer to people in the village • Fammily planning program (free contraception) • No more direct election for the district mayor or governor because the leaders only focus on the areas where they won the election.	other products as well. National level: • Central government have to ensure the base price of agricultural products • Providing employment • No discrimination between religious schools and public schools. • No money politic	• Provide information service for community • Equal distribution of better infrastructure. In national level: • Provide free education and healthcare services • Provide employment • Provide free contraception as a part of the family planning program.
e. Have they considered moving out of the village? Why?	• Ex women migrant workers: yes, because they want to save more money • No, because the life is secured enough. • No, because economically their life is secured • Yes, because economically, the life is insecured and there is no house yet. • No, because they are old enough. • Yes, because they need more money to support children educaton.	• No, living in the village is very peaceful and happy because there are family surrounding. • Yes, they want to access more information, and more job opportunities.	Yes: • Because there are lack of job opportunities in the village No: • Because the life is secured enough • Their parents do not allow them to move out • They love the village so much • They feel the unity with the village	• Most of the participants said they do not want to move out of the village because: • It is enjoyable to live together with their families • Their parents do not allow them to move out • The feeling of loving their village is very high.

Issues	Women Group	Men Group	Youth Group	Conclusion
h. What are the people's visions about the village in the future?	• Loang Make Village will be a prosperous village. The roads will be much better, high quality helathcare and education and market will be built there. • Trusttworthy head of the village with no cooruption and bribing • Low divorce rate so that there will be no neglected children • Better economic condition in the village • No young aged marriage	• The village will be a metropolitant village • The village will be more advance • The village will be a pilot village in health, economic, roads, and safety • The village will be more prosperous and become the government focus • A football court will be built in the village • The community will be more religious.	• The village will be a safe and properous village • No discrimination to women and social status • Better economic and safety condition • No nepotism • The village will be more religious • Accelerated development in the village through maintaining the roads infrastructure and better public facilities • The head of the village will be much better, communicative, and close to the community. The election also will be more directly, honest, transparent, and trustworthy.	The vision about the village in the future: • The village will be more prosperous, no more young aged marriage, no discrimination to women and social status • The youth aspirations will be more accommodated.

Analysis of FGD Result in Sekaroh Village, Jerowaru Sub District

Participants representing village community:
Adult Male : 22
Adult Female : 24
Young Male : 21
Young female : 8

Issues	Women Group	Men Group	Youth Group	Conclusions
A. Current Livelihood **a. What is your perception or what do you know about livelihoods?**	• Livelihood is how someone survives for their daily life. The village condition • No electricity, difficult to get water (people have to buy for drink or cooking), or water from well for taking bath or washing. • Public toilets and wells are limited • Limited access to higher schools as the poor roads infrastructures. • Public transports are *Ojek* (public motorcycle) and pick up. • No health service in the village but the post of women and children health healthcare, which the nurses or midwives come to the village to check the women and children's health. • Married and divorce levels are still high. • High numbers of migrant workers since 2005. The motivation are to send the children to higher education levels, to generate higher income, and to find alternative jobs as in the village, there are	• The livelihood has still been difficult until now: no electricity, people use traditional kerosene lamps when it's dark • Clean water for daily consumption is very difficult: people have to pay IDR 2,500/bucket (25 liters), they need 2 buckets a day in average. • Health service center is very far. Access to a good road is difficult; hence it's very difficult to go to the nearest health service. Access to school is also difficult. • Education: 2 people graduated from senior high school, and the rest of them finished primary or junior high schools. Even, many of the people in the village cannot continue their study because of the economic difficulties hence many people cannot go to higher education levels.	• The village needs electricity, clean water, and better roads, because in this village still does not have electricity. People have to buy clean water IDR 3,000 per bucket. • There is lack of health care service and a midwife. • Lack of public transport	• The perception of men, women and youth about livelihood almost the same, which is about how to generate income in order to fulfil the daily needs. • The main livelihood in the village is being fishermen (seaweed cultivation, raising lobsters and groupers) • They also work as waged labourers. Men are paid more than women because there are different types of work on the farm between men and women. • The natural resources: no electricity, and lack of clean water, so that the people have to buy IDR 2,500 per jerry can • Transportation infrastructures are very poor, which impact to the very little access to

Issues	Women Group	Men Group	Youth Group	Conclusions
	limited job opportunities. • The migrant workers are considered successful if they comeback home and bring much money. • Safety is very low in the village, many caged fish stealing cases. • People work as waged labourers. Recently, the rice production has been decreased because the farmers only plant rice once a year. • There are group of shared money or shared stuff for both men and women. • Declining value of mutual assistance.	• Only two people have finished senior high school. Many of the people there finished from junior high school, primary school or uneducated at all because they do not have fund for schooling. • The farmers plant maize, but during the dry season, they cannot plant anything hence they go outside of the village such as Mataram or Bali.		education, healthcare, and economic activities, • The livelihood in rainy season: planting chilli, maize, etc. But in dry season, nothing can be planted; therefore, many people go outside of the village (Mataram or Bali) to find jobs. • In the past, the main sea productions are sea weed, lobsters, and groupers. But the production has been decreased for recent 5 years because of pest attach, access to market, financial support for doing the business. • These problems have become the driving factors for the people in the village to go as migrant workers (men migrant workers go to Malaysia, women migrant workers go to Saudi Arabia). • Human Resources: low level of men and women education. • Women drop out from schooling are higher than drop out men, because the low level of economy, very far schools, very poor roads condition, and parents' stereotype about the women education. The stereotype is: it is not really important for

Issues	Women Group	Men Group	Youth Group	Conclusions
				girls to do higher study as the girl will get married soon. So many women are only able to finish primary school or junior high school. For men, not many of them finished senior high school. • The social life: high rates of young aged marriage, polygamy, and divorce. • There are some informal groups of sharing money or foods, or stuff for certain events such as in a wedding party or helping a grieving family (the group is called "banjar"), mutual assistances, art organization such as the group of "Ciloqaq" (traditional Sasak song)
b. What kind of livelihood activities is there in the village? Which of these do men do, which of these do women do? Why are these different?	• Many women become the head of household in the village (young and old). The women livelihood are: • Farmers, waged labourers (lease in and owner) • Selling fishes • Looking after family and children • Carrying logs for tobacco • Provide bait for fishing • Wife and husband discuss about their decision to increase or to change their business. • To join groups of shared money or stuff (banjar)	• The main livelihood is from agriculture and fishery. In the past time, the village was popular with seaweed production, which was able to support people's economy. However, it has been decreased since five years ago when the pest out broke and the marketing difficulty. • The people meet difficulties in lobster and grouper farming because of financial support for doing it and lobster and grouper larvae problems. • Farmers plant tobacco and dry	The main livelihoods: • Fishermen, seaweed farmers, grouper and lobster farmers, migrant workers, traders, and cattle farmers. • Seaweed farming used to be the main livelihood, but since the climate has been changed, the yield has been much decreased. • The numbers of women migrant workers are equal with the numbers of men migrant workers. People perceive that women should not go for	Men's livelihoods are: • Fishermen (catching fishes), seaweed cultivation, farmers, waged labourers, fish cages business, migrant workers • As fishermen, people can get IDR 10,000 to 30,000 per day • As waged labourers, the payment for men is higher than the payment for women for the same work hours. Men are paid IDR 50,000 per day (from morning to late afternoon) • Men's access to sources of

Issues	Women Group	Men Group	Youth Group	Conclusions
	• Wife has control to almost each of families financial. • In difficult situation, the wife usually makes decision to take a job such as being waged labourers, or to borrow money or rice from the neighbours without the husband's consideration. Men's livelihood: • Mostly work as farmers for dry season plants, waged labourers, land owners and lease in farmers) • Fishermen • Seaweed has been failed to ensure the farmers' livelihood security since two years ago because the business cannot be developed well • Caged fishes for grouper • Male groups of shared money or stuff. Men and women livelihoods are different because: • Men are paid IDR 50,000 and women are paid IDR 20,000. The work and working time are the same with different jobs (roles). • Most women migrant workers go to Saudi Arabia as house assistant, while men migrant workers work in oil palm plantation.	season crops (maize, mungbean, etc.), but face some difficulties such as financial support and seeds. • Every fisherman usually gets average income of IDR 15,000 every time they go for fishing. All of the money is given to the wife. The wife then manages it (there is the role differentiation in a family. The wives manage the money because it is believe that women are better in managing money) • Man migrant workers to Malaysia work in plantations. • Woman migrant workers are financed by agencies to work in Saudi Arabia for domestic work (servants). • Young marriage rate and divorce rate are high • Job division of farm labors are the same in all sub villages • In 2012, tobacco yields were not good (mostly were broken) because of too much rain, the price has decreased. • Religious facilities are mosque, reading Al Qur'an Courses, the group of reading Al Qur'an. • Men's livelihood almost the same as women's livelihood (no detailed report on this issue)	migrant work as it gives negative views for women migrant workers. However, the life is getting harder. There is primary and secondary life needs of people those cannot be fulfilled only by men migrant workers in their households. They want to change their life condition. Especially for women, they want to support the children education financially. • The level of education is still low. Men study until senior high school, while women until junior high school, because the parents' perception is women will get married soon, and economic limitation to support their education. Hence many of them can only finish junior high school or are dropped out. • In average, women get married when they are 17 years old. They are worried if they get married to old, the people will mock them as the old maid (*Mosot,* a Sasak Term). That view is the reason of the high young marriage rate. • High divorce rate because of unstable emotional, the man has another love affair, polygamy, economic pressure	income is more than women's access because men as the head of their family who hold the main responsibility in generating income for their family. Women's livelihood: • Waged labourers • Selling fishes to market • Women participate in looking after the cage fishes • Many of them go oversea as migrant workers. But there are still many of the housewives are unemployed • Their participation and access to income generation is very limited. However, the women are willing to do some activities and generate income with the husband's permission. • The women's control to determine the kinds of work they will do is limited to the husband or parents' decision and the social norms

Issues	Women Group	Men Group	Youth Group	Conclusions
		• Differences in men's and women's livelihood • Men migrant workers (TKI) go to Malaysia. They work in plantation • Women migrant workers (TKW) are financed to Saudi Arabia for domestic work (servant)	from the spouse, and the spouse go for migrant work (they live far away each other). • The social life and mutual assistance are still good. • Groups of shared money for wedding party are still active, and group of art music called *Cilokaq* • The youth are not invited to the village meetings because they are considered as children. So, their voices have not been heard yet. Men's livelihood: • Fishermen, waged labourers, farmers, migrant workers, unemployed, and community organizations (Amphibian, Rajawali, etc) activists. • The daily net income for fishermen in average is IDR 10,000 Women's livelihood: • Waged labourers • Migrant workers • Construction labourers in Bali or Mataram • Helping the husband to sell the fish catchments or join the husband to work in seaweed farms, but the seaweed work needs commitment.	

Issues	Women Group	Men Group	Youth Group	Conclusions
			• No women organization in the village level because the village has just been divided • Women are considered better in selling the fish catchments. • The unemployed women need another skill such as making snack for selling. • Women and men livelihoods are different: • Men waged laborers are paid IDR 30,000 a day while women are paid IDR 20,000 a day as their types of work are different.	
c. What are the most dominant livelihood activities in the village? Are people who do this livelihood activity well off or not? Why? Why not?	• Dominant livelihoods in the village: farming, tobacco waged labourers, fishermen, migrant workers. • Tobacco waged labourers are not well off because the work is seasonal. • Fishermen and sea weed farmers are not well off because the numbers of fishes they can get are too low. Meanwhile, the sea weed is suffered from diseases so it cannot grow well. • The children of migrant workers family are not well off because the children are looked after by the grand parents who are already old, meanwhile the father are get married to other women.	• Fishermen, but this livelihood cannot ensure a secure life because the catchments are very view. • Farmer is dominant as well, but the life is not well off too, because the farm yield is low. • Migrant workers are better off only when they just come home.	The most dominant livelihood in the village: • Farmers land owners. The big land owners has better off life compared to other farmers because in the rainy season, they are able to get high yield. • Fishermen, seaweed farmers, and grouper farmers but those livelihoods cannot ensure a prosperous life because the catchments are very low, because the gale. • Migrant workers are better off only when they are successful. • Women migrant workers are better off than men migrant workers because the women are	From the three groups, they said the most dominant livelihood in the village are: farming, fishery, migrant work • For the farmers who own big lands will be well off, especially in rainy season. • For waged labourers, they are not well off because the payment they get is not enough to fulfil their family's daily needs. • In the past, the fishermen's life was well off, but occurrence of climatic uncertainty, their lives have been changed. There are less fishes they can catch, seaweed cultivation has been

Issues	Women Group	Men Group	Youth Group	Conclusions
			better in saving their money during they work.	failed. Lobster and grouper yields have been decreased because of diseases. Their livelihoods are not well off anymore. • The livelihoods of migrant workers who were successful oversea are well off for some time after they come home.
d. What kinds of food do people usually eat on an everyday basis? When do you eat this kind of foods? Season? Time of day?	• Every day: rice, fish, kangkung, sesbania leaves, egg plants, and beans. • Tofu and tempeh: once a week. • Once a month (or in parties or certain events): chicken and meat • Sweet potatoes and cassava are eaten for snacks Babies' diet: • Under 2 years, the babies get breast feeding, porridge, and rice when they little bit grows up. • Pregnancy diet: it is not much different from normal diet as the other family members.	• Every day: rice, fish, kangkung, sesbania leaves, egg plants, and beans. • Tofu and tempeh: once a week. • Once a month (or in parties or certain events): chicken and meat • Sweet potatoes and cassava are eaten for snacks	• Every day during rainy season: rice, fish, kangkung, sesbania leaves, egg plants, sweet potatoes cassava fish, seaweed and beans. • Tofu and tempeh: once a week. • In parties or certain events): chicken and meat	- rice and vegetables are eaten everyday - sweet potatoes, soybean, maize, and legumes are eaten seasonally - tofu and tempeh are eaten once a week - eggs, chickens, and meat are eaten in big events
e. Are there people in the village who have limited access to food? Who? Why? When?	• Children those the mothers go as migrant workers, work outside of the village, the fathers get married to other women, or divorced parents. • The fishermen who cannot go to the sea because of big wind.	• People have limited access to food, because even though they can produce rice in the dry season, the price of the rice is always low, hence the farmers cannot pay the loan back. • Fishermen also experience difficulties usually from January to March.	• People have poor access to clean water and roads. For their daily life, people rely on their farm lands. • During dry season, people use their saving for their daily life, but if they run out of their money, they get loan from others.	• People have limited access to foods because they lack of water, poor road access, big sea waves lead to many fishermen cannot go to sea for catching fishes. Hence, the fishermen work on farm to fulfil their daily needs. However, in the dry season,

Issues	Women Group	Men Group	Youth Group	Conclusions
				the yields are dropped and the price is very low those cannot to get break event point. • The livelihood strategy to overcome the problems: use their saving. If the saving already run out, they get loan from their neighbours. • The other strategies: looking for jobs outside of the village such as Mataram, Bali, Sumbawa and Malaysia (migrant workers) Women group: • Children, who are left by the mother for migrant works, while the father polygamy or separated from the mother. • To overcome the problem, the women decide to work as waged laborers or get high interest loan from the neighbors.
B. Future Livelihoods and Change **a. Define the future**	• 5, 15 years • It's difficult to define the future because they are busy to think about their livelihood in a month to go.	• 4, 5, 10, 40, 100 years	• 1, 3, 4, 5, 6, 10, 15, 20, 50 years to go. • Future is unlimited; we have to think always about our future for the whole life.	• 1, 3, to 100 years, unlimited time to the future, something that we need to think during our lifetime.

Issues	Women Group	Men Group	Youth Group	Conclusions
b. How did the past differ from now and WHY?	• In the past, people took water from the top of the hill (3 km), but now people are able to buy water. So, people can drink or cook. • In the past, seaweed was well grown; the climate supported the growth and made the farmers' life better. However, since 2010, the climate has not supported the seaweed growth. Thus, the farmers' life has been worse. They must get loan to support their daily life. • Climate change has impacted thee farmers' life. People's income has been decreased time by time. People get loan for their daily life. • In 2011, the price of mungbean was so high. Climate supported the growth. Farmers got very high profit. • However, in 2012, the yield was much decreased (80% reduced) because too much rain. The farmers cannot pay the input price. So, for the farmer's daily life, they have to get loan again for daily consumption. • In the past, no electricity, poor road infrastructures, only a primary school in the village, no healthcare in the village level, the sub district healthcare level was so far from the village, so that the level of education was very low, many students were dropped out, many pregnant women delivered their babies in traditional midwives, and high mortality for new born babies and the mothers. • Since 2011, the government has given	• Since 2007, seaweed farming cannot support the farmers' life because of the climate change. Tailing from Newmont (the mining company in Sumbawa) also influence the seaweed worse growth. Hence, the farmers' income has been much lower and they cannot fulfil their daily needs. • In the past, no electricity and poor road infrastructures, so in the rain the roads were very bad. Students from the village could not go to school. However, since 2011, the government has started to put more attention to the village. The roads have been built and the villages have been divided in to some smaller villages. The impact are better access to health services, economic activities, and education. There are many luxurious houses recently. • High population as many new comers, those are married with the villagers (since 2007). • Catchments have been decreased, that lead to lower income. • During 1970es, people ate bulbs of certain plants. Then, after dry land rice variety, people harvested rice every 6 months. Since 80es, farmers have planted small rice varieties, which can be harvested every 3 months.	• Between years 2000 to 2008, the yield was very high and the price was very good. But after those periods, seaweed farming cannot support the farmers' life because the production has been very low and the price has fallen down. The costs of the farming inputs have been very low. • After 2007, the fish catchments have been decreased, because in the past, many fishermen used bomb for fishing. The impact are: many of them have to catch fishes to other islands such as Sumbawa Island and Timor Islands. They spend a month for fishing. • While the husbands go a month for fishing, the wives borrow money to fulfil their daily life or work as waged labourers. • The net income of daily fishing is IDR 10,000 to IDR 15,000. The fishermen need IDR 30,000 a day for the operational. • The bomb using for fishing has been decreased as the government bans it. Moreover, the people have realised that using bomb will destruct the corals, and there will be no fishes more, those lead to less catchments and their income.	• The three groups of participants said that the livelihood in the past is different from the current livelihood. • In the past, access to clean water was very difficult, poor road infrastructure, and no electricity. Therefore, there were difficult to heave access to education and healthcare. The level of education was very low. Many students were dropped out. Many women deliver their babies in traditional midwives, high rates of baby death. • In 2011, the roads were maintained. Asphalt was used. People have transportation facilities, better access to healthcare and midwives (a community healthcare centre). Economic situation are better. • The population is not as low as in the past. Recently, many new comers have come from Masbagik and Selong because of marriage and village government division. Hence the village becomes denser and more houses. Catches fishes are lower per fisherman that leads to lower income.

Issues	Women Group	Men Group	Youth Group	Conclusions
	better attention for the development in the village. The road infrastructures are getting better, better vehicles, junior high school has been built in the village in 2009 that leads to better villagers education, and people use the professional midwives in delivering the babies. • In 2005, many women went for migrant work because the husbands have got married to the other women. The children are looked after by the grandparents. They suffer from malnutrition. Sometimes, children died because of malnutrition. • In the past, many people ate maize as their staple diet, but now more and more eat rice.		• Since 1999, the investors have started to come to the village, means more job opportunities. • In 2010, the old village has been divided into some new villages. • Since 2011, the roads have been better.	• During 1979-2007, the livelihood of fishermen was very good. Many catch fishes and high seaweed yield. • Since 2008, seaweed and fish yields have been decreased. The fishermen have not been able to fulfil their family's daily needs. Therefore, the people must get loan from their neighbours. • The negative changes have happened since the climatic uncertainty and is suspected that tailing from Newmont (the legal gold miner) • The youth group said that there are many people in the village catch fishes by using bombs and poison, which lead to the extinction of fishes. • In the past, it was difficult to access food (rice), but now, people have access to get and eat rice (the rice variety that is short planting period)
C. Climate Change **a. Observation to climate change and population growth and the time when it happen**	• Since 2009, the climate has been hotter. More rain and windy. • Since 2005, the population in the village is getting high. More new comers into the village because of marriage between the villagers and the people outside of the village.	• Since 2007, the weather has been hotter, mainly on the sea.	• Since 2002, the sea water level has been higher and abrasion has been worse. • In 2009, the rainy seasons was longer, but in 2006 and 2010 the dry season were even longer.	• There are some different views in defining future Youth group: • Climate has been changed since 2002 when the seawater surface level has been

Issues	Women Group	Men Group	Youth Group	Conclusions
				increased. Then in 2006, 2009, and 2009, and 2010, they feel that rainy season is getting longer, more windy, and dry season is also longer. Men group: • They said that the climate has been changed since 2007 when the weather when they go to the sea is getting hotter. They also felt that the population is getting increased as well. Women group: • The climate has been changed since 2009. The felt that the weather is getting hotter, rainy season is longer and more windy than usual. The population is also getting higher since 2005.
b. Impact of the change	• The amount of daily consumption has not been changed for the rice, but has been changed for the other food, such as more instant noodle in the diet.	• The fish catchment for each person has been decreased.	• Low catchments • Loss of some plant varieties.	• Fishes catchment are getting decreased • the loss of mangrove- like plants (*Banten)* • Seaweed cultivation was failed • Tobacco yield are destroyed.

Issues	Women Group	Men Group	Youth Group	Conclusions
c. The source of information about weather and season	From TV	From TV and from government through the Department of Forestry.	People usually ask a predictor about the weather and climate	Sources of information are TV, Department of Forestry and a climate forecaster. Men and youth have more access to information.
d. Will the livelihood be the same between men and women in the future? Why will they be the same or different?	• Farming will always be there in the village because that is the main commodity for the people livelihood in the village. However, to avoid the production failure, the farmers will use other varieties. They will get it from outside of the village. • For the rice farmers, they still own the land even though it is getting smaller. • More job opportunities from hotels. Men and women have the same opportunities to access the jobs. • There will be more work in construction. • The marriage and divorce rates will be higher as the open access to networking and tourism. • Less polygamy as the advancement of people mindset. • No more food insecurity because people are able to buy in outside of the village • Less migrant workers because many job opportunities in the village. • less safety because the development Beach tourism • Less people participation in mutual assistance. People are more individualistic. Men's livelihood changes:	The livelihood differences between men and women are: • *Awig-awig* or the traditional rules are kept all the time in order to keep the safety of coral reefs, and the fishermen's behaviour in using bombs. • There are some people will still be being farmers. • Less farming production because of the low production and the farmers are busy in their side jobs.	In the future, The livelihood similarities between men and women are: • Work in hotels as security, hotel administration, chefs, and cleaning services, because of the higher level of education, the opening of mini markets and a traditional market. • Less migrant workers because of the more job opportunities in the village • Better access to clean water and electricity • Many houses on the farm lands along the roads as the impact of higher population. • Young aged marriage will be decreased but divorce rate will be higher because of the higher levels of education, and modernization. • Lower divorce rate as the betterment of the economic condition. • Less people participation in mutual assistance. People are more individualistic. But the	• There will be new job opportunities in the village: security, hotel staffs, chefs, and cleaning service. Then the numbers of people go for being migrant workers will be reduced because of the tourism development in the village and job opportunity will be equal between men and women. • Level of education is getting higher because of the development of education facilities and infrastructures. • Economic condition in the village will be better. People will not rely on the seasons or weather because they work in the tourism sector. People will not lack of electricity, water, and food supplies. • Young aged marriage will be decreased but divorce rate will be higher as the impact of tourism development. • The community will be more individualistic, no mutual

Issues	Women Group	Men Group	Youth Group	Conclusions
	• There will be some people still work as fishermen, even though there will not so many. They can get money on daily basis by fishing. • The ownership of the land will be reduced because many of them sell their land to investors. • The fishing catches will be reduced because many of the fishermen use bombs that lead to the coral reefs destruction. The women's livelihood differences: • More divorced women because of the high divorce rate. • Many small traders along the beaches as the result of tourism development		groups of shared money or stuff still exist. • The fish catchments will be lower but people will still be able to eat fishes because they have enough money to buy them. The livelihood differences between men and women in the future are: • There will be more gender equality because of the equal opportunities for men and women to access employment because they have the same access to higher education. Women have control in decision makings. And they have opportunities to work outside of the house. • More men have love affairs to other women. • Men do not want to do domestic chores because of the stereotype that women do the chores.	assistance anymore. • There will be lack of safety after the tourism development in *Surga* Beach. • Gender equality because the jobs opportunity will be equal between men and women. The livelihood similarity between the current and the future: Men: • Fishermen, farmers. Women: • Their education levels and skills will be higher. The same job opportunities for men and women so that women will participate in public affairs. They will be more confident to take decisions. Youth: • The culture of patriarchy will be still dominated hence men will not participate in domestic affairs.

Issues	Women Group	Men Group	Youth Group	Conclusions
D. Adaptation **a. What are the main difficulties do they face?**	Recent difficulties: • Still no electricity • Lack of clean water • Lack of public places for washing-bathing-toilet. • Lack of irrigation channels • Lack of clean water resources. • Limited access to the staple diet (rice) Future difficulties: • Smaller farm lands • Cultural penetration from other cultures. • Lack of safety • Sea and air pollution • The use of sea resources.	• Low human resource quality • No electricity generators • Poor roads infrastructures. • The distance to schools is still far • Lack of clean water • No irrigation channels • Lack of clean water resource • Lack of health service facilities • safety • cultural movement • drugs distribution • Increased in sea ecosystem pressure	• Clean water and electricity. • Lack of financial support to improve people's farm business • Lack of full time jobs for men and women • Lack of funding for the village development • Less village safety. • Climate uncertainty (longer dry season leads to lack of water for irrigation) • Low education levels. • Higher population • competition between local people and new comers • Cultural movement. • Safety condition for tourism development • Safety on the sea and on the land as the impact of development of *Awang* Port and hotels along the beaches	Currently: • Clean water and irrigation channels • Electricity infrastructures • Poor transportation and healthcare infrastructures • Low education levels • Lack of financial support to improve people's farm business • Lack of full time jobs for men and women. • Lack of funding for the village development. • Less village safety • Climate uncertainty (longer dry season leads to lack of water for irrigation) In the future: • Farm lands will be smaller. • Higher population • Cultural movement • drug abusing will be speeded out • Competition between local people and new comers. • The pressures of sea ecosystems. Sea and air pollutions.
b. What do the households do in	No answer.	• Small scale shops • Improving their skills (making	• Job diversification.	• Small scale shops • Improving their skills (making

Issues	Women Group	Men Group	Youth Group	Conclusions
order to ensure their food security?		handicraft) • Planting sesbania trees on their field • Planting eggplant, chilli, and vegetables on their own gardens • Saving their money • To work outside of the village, such as Mataram, Bali, Sumbawa or Malaysia. • The women work as waged labourer while the husband repairs the net for fishing and looking after the children at home (there is job division between man and women at the household level)		handicraft) • Planting Turi trees on their field • Planting eggplant, chilli, and vegetables on their own gardens • Saving their money • Meanwhile, from the youth's view, there should be more job diversification so that people will still be able to generate income and to buy rice. Or people can go outside of the village to find jobs
c. What should be done in the village level in helping the people to adaptation?	• Create employment • Propose clean water, electricity, public toilet-washing-bathing, mosque renovation, incentive for Posyandu (Post for integrative Services for Women and Children) Cadres • Promote more safety village • Distribute Raskin (cheap rice) transparently and equally. • Arrange more training for people in the village so that they can create job opportunities in the future.	• Motivate people in the village about the important of education for their children • Propose government assistance program in giving financial support in farming and fishery. • Work together with community. • Concern on the community needs. • To coordinate and to communicate more intensively and continuously with the higher governments (sub district, and district) • Together with the community, they keep the safety of the village • To coordinate and to make good approach with the informal leaders (religious or youth chiefs) in the village, especially to eradicate alcoholism	• Help for better access to clean water and electricity. • Propose government assistance program, especially for the farmers those are failed in the harvesting. • Propose investors' assistance for the fishermen to support the villagers business, such as caged fishes. • Assist exploring the youth potential talents to be developed. • Give financial support for women to starting some business. • No corruption in government bodies. • Coordinate with upper and	• Motivate people in the village about the important of education for their children • Make proposal to the higher government related to the development of transportation infrastructures, clean water (PDAM), education facilities, healthcare centre, etc. • Together with the community, they keep the safety of the village. • To distribute government assistance and Raskin safely and equally. • To empower the people in the village in order to reduce the number of unemployment.

Issues	Women Group	Men Group	Youth Group	Conclusions
		• Make proposal to the higher government related to the development of transportation infrastructures, clean water (PDAM), and electricity.	lower government levels in development.	• To coordinate and to communicate more intensively and continuously with the higher governments (sub district, district) and other stakeholders. • To provide the people in the village with credit facilities with low rate of interest. • To coordinate and to make good approach with the informal leaders (religious or youth chiefs) in the village, especially to eradicate alcoholism.
d. What should be done in Kecamatan, district, provincial, and national levels in helping the people to adaptation?	Sub District Level: • To arrange more trainings for people in the village so that they can create job opportunities in the future. • To care after elderly and neglected children • More incentive for Posyandu Cadres District Levels: • To build a centre of Posyandu for women, children, and elderly. • To provide healthy foods for pregnant and breast feeding women, toddler, and under 5 years old children. • To give more incentive for Posyandu Cadres. • To provide more intensive agricultural extensions.	Sub District Level: • To coordinate with districts to socialize about weather or climate change • to make a proposal to the higher government related to the development of transportation infrastructures, clean water (PDAM), and electricity • To come to the village and see directly the real condition of the village District Level: • To provide training for improving the people's livelihood skills and supervising on farming • To provide training for improving the women's life skills in	Sub District Level: • To socialize about tourism development, and their impact to community, so that the people in the village will be ready to adapt. • To eradicate corruption (clean government) • To coordinate and to communicate more intensively and continuously with the lower governments District level • To provide training for improving the women's life skills in developing home industry (the processing of seaweed, fishes, etc.)	Sub District Level: • To empower the people in the village in order to reduce the number of unemployment. • To coordinate with districts to socialize about weather or climate change, tourism development, and their impact to community, so that the people in the village will be ready to adapt. • To communicate the people's aspiration about the electricity, the water, and the roads • To come to the village and see directly the real condition of the village • To build a moral awareness

Issues	Women Group	Men Group	Youth Group	Conclusions
	Provincial Level: • The government should come to the grass roots in order to know the real condition of the village community. • To provide clean water and electricity • To provide education infrastructures and facilities (from kindergarten to senior high school) • Health service facilities (Puskesmas, Posyandu, Pustu) National level: • To increase the portion of Raskin assistance. • To decrease the price of staple foods and fuel. • To provide more employment • To provide free education	developing home industry (the processing of seaweed, fishes, etc.) • to make proposal to the higher government related to the development of transportation infrastructures, clean water (PDAM), and electricity • To come to the village and see directly the real condition of the village • To build the basic facilities and infrastructures on education, health, electricity, water, and transportation • To provide the people with farming production facilities, and financial support for home industries. • To do extension Provincial Level: • More equitable development. • Make a proposal to the higher government related to the development of transportation infrastructures, clean water (PDAM), and electricity • The governor should come to the village and see directly the real life condition. • To accelerate the development of the Provincial highway in Bagek Cendol, Lendang Kerat, Sungkun,	• To build a healthcare facility in the village. • Set basic price for seaweed. • To eradicate corruption (a clean government) • To coordinate and to communicate more intensively and continuously with the upper and the lower governments • To provide experts and tools for the village needs • To sustain the local wisdoms. Provincial Level: • The governor should come to the village and see directly the real life condition and to listen to the residents' aspiration. • To provide education and training centers. • To eradicate corruption for the more clean governance. • To coordinate with the government in the lower levels in running the development program in order to ensure the equitable development. • To sustain local cultures. National Level: • Not to increase the fuel price • To make rule about 12 years	about avoiding corruption District Level: • To build the basic facilities and infrastructures on education, health, electricity, water, and transportation • To do extension on agriculture • To provide the people with farming production facilities • To sustain the local wisdoms • To come into the real life condition of the community. Provincial Level: • The governor should come to the village and see directly the real life condition and to listen to the residents' aspiration. • To build the basic facilities and infrastructures on education, health, electricity, water, and transportation • To eradicate corruption • To coordinate with the upper and the lower levels of government • To set basic price of grain, mungbean, and chili. • To sustain local cultures. • To provide the facilities of any informal education, such as the center of studying, • The government assistance

Issues	Women Group	Men Group	Youth Group	Conclusions
		and Kaliantan. • To set basic price of grain, mungbean, and chili. • To provide the facilities of any informal education, such as the center of studying (a learning community center) • The government assistance such as Al Qur'an. National: • More equitable development • To come to the village and see directly the real condition of the village. • To provide affordable education fee. • To ensure equitable teachers distribution, including to the remote areas • To increase quantity of Raskin	compulsory education (primary school to senior high school) • To eradicate corruption for the more clean governance. • To provide cheap staple foods • To coordinate with the government in the lower levels in running the development programs.	such as Al Qur'an. National Level: • To increase quantity of Raskin • To provide cheap staple foods and stable price of fuel • To provide employment (more job opportunities) • To make rule about 12 years compulsory education (primary school to senior high school) and to ensure equitable teachers distribution, including to the remote areas. • To coordinate with the government in the lower levels in running the development programs in order to ensure the equitable development. • To eradicate corruption for the more clean governance.
e. Have you considered moving out of the village? Why?	Reasons of not to move out of the village: • Because they love their family so much and do not want to leave them. • Because they love their hometown. Reason of willingness of moving out: • Because the livelihood in the village is too difficult.	The reason of not moving out: • They want to stay in the village • The children are grown up and finish their school • Anything can be fulfilled by living in the village. The reason of their willingness to move out of the village: • They want to be able to support	The reason of not moving out: • They still can go to school even by living in the village. But may be after finishing their study, they will consider to change their life by working outside of the village. • They already have jobs in the village, such as waged labor.. • They love their village.	The three groups gave similar answers, whether some of them have considered moving out of the village, but mostly, they do not want to do it. The reason of not moving out: • Because the people really love their home land, their husband/wife, and their families.

Issues	Women Group	Men Group	Youth Group	Conclusions
		their children's education • People want to find income sources • They want to increase their income, and to have more experience.	The reason of their willingness to move out of the village: • Because of the difficult livelihood condition • In order to improve their economic condition • They will be able to support their children's education • They want to have more experience living outside of the village. • The youth want to get more money in order to but motorcycle and get married	• Because they want to still stay in the village as the children have been grown up and finished their study. • Because the people already have a stable and secured job, such as tobacco farming. The reason of their willingness to move out of the village: • Because of the difficult livelihood condition in the village so that the people want to find other sources of income outside of the village • People want to find more job experience hence they will be able to support their children's education • The youth want to get more money in order to buy motorcycle and get married.
f. What are the people's visions of the village in the future?	• Close to market (convenient to access market) • Better education facilities • Access to electricity and health service • Better road infrastructures.	• The village will be a developed village (good infrastructures), • there will be more job opportunities, less unemployed people, • Saved village and well off people's life	• There will be higher education levels of the people in the village, • More well off people, • good safety, • electricity in the village, • less unemployed people • the economic condition is enough to fulfil the daily needs • better livelihood (people will not be vulnerable anymore)	Women's group: • Close to market • Better water infrastructures • Electricity, education, and healthcare facilities are closed to the village • Better transportation infrastructures Men's group: • The village will be a developed village (good infrastructures),

Issues	Women Group	Men Group	Youth Group	Conclusions
				• there will be more job opportunities, less unemployed people, • saved village and well off people's life Youth's group: • There will be higher education levels of the people in the village, • More well off people, • good safety, • electricity in the village, • less unemployed people • the economic condition is enough to fulfil the daily needs • better livelihood (people will not be vulnerable anymore)

Annex 11. Stakeholder Consultation Meeting Summary

Notes for the Record

Subject: Food for Asset (FFA) Evaluation Meeting / After Action Review 2013

Date : 19 December 2013
Time : 09.30 – 16.30
Venue : WFP Mataram Office

Participants:

WFP:

T. Yunansyah, Eva Juniza, Yunita A, Tarningsih H, Ahmad P Too, Jonas Odja, Fina Fitriani.

Cooperating Partners:

Lalu Priadi, Murah (Forestry), Parawinata, Imran (Agriculture), Triwidiastuti (Bappeda), Haryana (BPMD), Muzakkir Walad (Public Works), Amin Abdullah, Mukmin, Junaidi, Sapoanuddin (LPSDN).

Farmer Groups:

Basri, Burhanuddin (Karang Sidemen), Basri (Tanak Beak), Maksum (Aik Bukak), M.Tohri (Selebung Rembiga), Burhan, M.Zaki (Batu Jangkih), Aq Juni (Mt Ajan).

1. The FFA Evaluation Meeting was opened by Tarningsih as MC, followed by "Opening Remarks" from Officer in Charge WFP Mataram, Teuku Yunansyah with the following key points:

- FFA of 2013 began in June 2013 and ended in December 2013 in close cooperation with Central Lombok government counterparts such as Agriculture, Forestry, BPMD & FSO. LPSDN is the only NGO partnering with WFP this time. FFA with FSO has not finished yet thus FFA with FSO is not included this time.
- Besides involving all CPs, this FFA evaluation also engaged Bappeda, Public Works and farmer groups.
- Objectives of the FFA Evaluation Meeting are:
    - To deeply discuss FFA implementations (what went well & what not well well) which were completed in 2013.
    - To provide recommendations (including follow up actions) from FFA implementations to related parties.
- Sustainability is one great concern from WFP. WFP hopes that the assets created under FFA could be maintained by the community or government.
- Synergy with government programmes and priorities should remain in focus for next climate change adaptation programmes in NTB.
- Most likely in the future, WFP will try to implement Cash or Voucher Programme instead of providing direct food. However, it is subject to funding availability.
- It is expected that all participants be active in this meeting. Recommendations and follow up actions from this meeting will be shared to related parties.
- WFP plans to make "field evaluation" for FFA implemented from 2008 – 2012. Further information will follow. Each CP is expected to assess what's the condition of assets created before.

2. Presentations from cooperating partners using Power Point. Only Agriculture Office was not ready with PP presentation.

1. **From Forestry Office of Central Lombok**
   Implementation period: June – December 2013
   FFA on construction of dam, water catchments, nursery centre, tree planting and trainings.

   Strengths:
   - Community commitment to preserve and maintain environment.
   - Strong wish from the community to get irrigation water.
   - Active participation from the community before and after the project.

   Weaknesses:
   - Limited budget
   - Limited water capacity
   - Community capacity is smaller than their wish.

   Challenges:
   - Techniques on operations and maintenances.
   - No sustained management
   - Social conflict
   - Village potential not developed.

   What went well and why?
   - Good participation from the community during the FFA project.
   - Good efforts from the community to utilize their land optimally since they realize these will give impact in the future.

   What not went well and why?
   - Still in small scope / personal, thus impact to environment still small.

   What needs to be improved?
   - Structure (formal & informal).
   - Coordination inter village in one irrigation areas.
   - Capacity building for water / dam managers.

   Recommendations:
   - To have an effective FFA, each activity proposed should be based on “grand design” which can be done gradually.
   - It is recommended to integrate some government offices at the same time in one activity. This will have a better impact and more monumental.

   After the presentations from Forestry, the participants of the meeting discussed various issues with regards FFA in partnering with Forestry. Some key points are as follows:
   - Small dam under FFA in Janapria sub district is unique as the water is taken from the river (using pump machine contributed by Forestry). This dam will serve as reservoir as well. Then

the water will be irrigated to paddy fields surrounding the area. This is the first model for WFP FFA. What is the strategy for sustainability?

- Bappeda suggested creating a group of farmer to maintain the assets.
- Bappeda of Central Lombok will monitor all FFA results on regular basis. This will be planned in 2014.
- It is suggested to strengthen the community with local regulation called *Awiq-Awiq*.
- Need more details on elevation from the river to the reservoir.
- What will happen with the nursery centre after the trees planted along the watershed? Will it be empty or how?

Responses from Forestry and representative of farmer's group:

- The group to maintain the asset is important. WFP and Forestry have trained a number of farmers to take care the assets. This includes preparations of local regulation (Awiq-Awiq) which will act as reference to the community.
- The elevation is about 15-20 meters and before the water flow to the main reservoir, the water flow to first reservoir. The operational budget for maintain this coming from the regular budget from community who use the water.
- Maintaining the assets from FFA is challenging but the representative from farmer's groups guarantee they can do that.
- Community are ready to contribute cash for maintenance (for instance to buy fuel for the pump machine, etc). The meetings were done several times to discuss this and the majority agreed to do so.
- Trees planted during the FFA project exceeded the plan (plan was 143,000 trees but actual planted 150,000 trees).
- There is a possibility to irrigate paddy field to neighboring villages by using additional pipes. It is suggested that the neighboring village should pay something as maintenance cost.
- Farmers will keep utilizing ex nursery centre to grow vegetables.

2. From LPSDN

Implementation period : June – September 2013

FFA on mangrove planting & silvofishery

Strengths:

- Local regulation on spatial plans is available.
- District regulation (Perda Kab Lotim No 10 2006 on Special Ares for Marine Conservation)
- Bupati Regulation of Central Lombok No 2 2011 on Conservation Area in Central Lombok.
- Awareness from the coastal community on the importance of mangrove ecosystem.

Weaknesses:

- Limited time to implement FFA
- Not proper time for mangrove planting as it needs specific time to get better results
- Silvofishery concept is still new to community.
- Limited coordination with related technical offices.

Challenges:

- Routine flood (every year) in certain areas.
- Development of hotels and tourism facilities around the project areas.
- Firewood for tobacco oven.

What went well and why?

- Community awareness has increased.

What not went well and why?

- Government support post programme implementation.

What needs to be improved?

- Implementation period should be adjusted with specific activity.
- Need more coordination with related government office.
- Sustained activity for Silvofishery.

Lesson Learns:

- System of programme controlling ran well, so the planned activities ran as expected.
- Good FFA approach with specific target and purposes.

Best Practice:

- Good networking among cooperating partners and WFP.

Recommendation:

- Local government is expected to be proactive in providing support through district/province budget (APBD).

After the presentations from LPSDN, the participants of the meeting discussed various issues with regards FFA in partnering with LPSDN. Some key points are as follows:

- What are the indicators claimed by LPSDN that the coastal community's awareness has improved?
- Need to know what is the progress after various trainings given to the FFA participants?
- Suggested to involve Forestry office more on mangrove seedlings, etc.
- LPSDN is suggested to enhance their commitment to coastal community development and capacity building.

LPSDN responses:

- One of the indicators of improved awareness among the coastal community is that they are now more aware about the important of mangrove conservation and have commitment to maintain mangrove trees planted under FFA.
- Another good thing is that the communities are now making their own mangrove seedlings, using their own resources.
- LPSDN has collaborated with WWF and Japan Embassy to continue mangrove conservation projects.

3. **From Agriculture Office**
   Implementation period : June – October 2013
   FFA on dam & water catchment construction, tree planting, king grass.

   From the process of FFA implementations with Agriculture Office, some positive things observed:
   - Good participation from the community in Karang Sidemen Village. The dam has been completed and able to irrigate about 200 hectares of paddy field.
   - Heavy rains have made a wing side of the dam collapsed. The community is trying to repair soon.
   - In the downstream dam, the community plans to have fish on it.
   - *Awiq-Awiq* (customary rules) will be created to regulate water distributions and maintenance of the dams.
   - King Grass in Montong Ajan Village is growing well and some have been used by community for their cattle fodder.

4. **From BPMD**
   Implementation period: June – November 2013
   FFA on bridge constructions and road access.

   Strengths:
   - Food incentives for community working on the project.
   - Materials from the government.

   Weaknesses:
   - FFA participants picked for this project not identified well
   - Insufficient materials, thus it delayed the project.
   - Low participation from the community.

   Challenges:
   - Remote FFA sites, thus it is difficult to transport materials.
   - Difficulty in selecting proper people as participants.
   - Unpredictable weather has resulted landslide in one bridge.

   What went well and why?
   - Rice and vegetable oil distribution ran well and as scheduled.

   What not went well and why?
   - Recruitment as FFA participants not working well

   What needs to be improved?
   - Recruitment of FFA participants should be adjusted with the need.
   - Community contribution on workdays
   - Materials for the bridge constructions.

Lesson Learns:

- FFA implementation and procedures were done in a transparent way

Recommendation:

- FFA model is still relevant to be done in poor villages in Lombok Tengah.
- FFA can be used as income generating activities for the poor.

Key points from the discussions as follows:

- It is a pity that the bridges could not be completed though implementation period is over.
- BPMD does not have a full control on the ground.
- The soil filling is not properly done and this made the bridge had landslide.
- BPMD has difficulty in identifying proper FFA participants.
- Representatives from the community regretted the way of BPMD in managing the bridge construction and road opening.