ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular-sized Project Concept

Country/Region: **Indonesia/Asia Pacific**
Project Title: **The adaptation measures to support sustainable livelihoods for local communities in mangrove ecosystem in the Mahakam Delta, East Kalimantan**
Thematic Focal Area: **Food Security**
Implementing Entity: **Kemitraan**
AF Project ID: **IDN/NIE/Food/2017/2**
IE Project ID:
Requested Financing from Adaptation Fund (US Dollars): **599,351**
Reviewer and contact person: **Imen Meliane**
Co-reviewer(s): **Saliha Dobardzic**
IE Contact Person:

Review Criteria	Questions	Comments	
Country Eligibility	1. Is the country party to the Kyoto Protocol?	Yes	
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	Yes	
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	Yes	
	2. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate	Requires clarification. The project supports measures that help increase resilience and adaptive capacity to climate change impacts. However the project does not provide sufficient information to justify the climate risks to the project areas. The impacts highlighted such as sedimentation, erosion and even sea water intrusion can be the	**CR.1** The scenario of the impact of climate change in the future without the intervention of the program is predicted to have an impact on: 1. Increasing the coastal abrasion rate to 1.2-4.8 m / year can be estimated shoreline reduction or loss between 40-50 meters in 2030 in the Mahakam Delta due to the reduction of most of

	resilience?	direct result of the mangrove degradation because of human activities in the area, in particular aquaculture ponds, upstream logging and mining. There is no detailed information on the climate change risks and impacts in the area, and without it the project is more a project for NRM or livelihood rather than an adaptation project. **CR 1:** Please provide detailed information on the impacts of climate change as well as future scenarios, in the project area. **CR 2:** Please justify the choice of the the villages/areas where you are proposing to undertake restoration and other adaptation activities. **CR 3:** Please provide more information on how the proposed activities will reduce the climate risks, and further information and justification of the design of these activities and in particular the mangrove restoration. (e.g. why restoring 100 Ha? What are the expected benefits for sediment trapping, reducing erosion etc? After how many years would these benefits be produced? Details on the biophysical conditions and if they are suitable for restoration species to be replanted, density…) **CR 4:** Please provide more information on the vulnerability of the communities, the beneficiaries of the project and how the results of the project will help reduce their vulnerability to climate change.	the greenbelt functions in the coastal areas and the tidal pressure of the sea, currents, waves and storms. 2. Increased social and economic vulnerability of local communities, the impact of damage to mangrove ecosystems as a place to depend on their livelihoods, which in turn reduces the level of family income, so that poverty levels will increase, causing low levels of family health, education and nutrition. 3. The reduced ability of mangrove ecosystems as a buffer for coastal areas, as well as an increase in normal sea level rise of 4.5 mm / year and can reach 7.5 mm / year (Sutrisno, et al, 2004) in the Mahakam delta, will increase the rate of sea water intrusion which will reach more than 70 Km / 43.5 miles to the mainland through the Mahakam River flow. In October 1997 there was sea water intrusion reaching the city of Samarinda through the Mahakam River which was + 65 km from the mouth of the Mahakam Delta after the absence of rainfall for 2.5 months. Furthermore, in September 2015 sea water intrusion reached the city of Samarinda after there was no rainfall for + 1 month, so 14 intakes as providers of raw water for the community stopped operating for several days, because the water content of the Mahakam River had reached 1200 milligrams / liters - 3000 milligrams / liter (BPBD Prov East Kalimantan, 2015). **CR.2** namely Muara Pantuan village, Sepatin village and Muara Badak Ulu village namely Muara Pantuan village, Sepatin village and Muara Badak Ulu village

			CR.3 Activities in component 1 are designed as an effective strategy in reducing the risk of micro climate change that is built integratively, namely synergizing between mangrove reforestation activities, with capacity building and awareness of the target community groups in 3 villages beneficiaries so that local communities can have a commitment strong in maintaining the sustainability of reforestation. Reforestation activities are carried out with an area of 120 ha on the coast and estuary, activities focused on the area around the settlement and community livelihood areas with a planting distance of 1 x 2m (5,000 mangroves / hectare). Mangrove species planted according to the characteristics of alluvial soil types are Rhizopora mucronata, and some types of soneratia sp and avicennia sp which are local species of mangroves found in the Mahakam Delta. After 3-5 years of reforestation, it is expected that mangroves that have been planted can have a positive impact. With its ability as a sediment trap media, it will reduce the occurrence of abrasion rates, reduce the occurrence of seawater intrusion and improve fisheries potential by providing its service functions as spawning ground, feeding ground and nursery ground for aquatic biota.

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Commented [CR1]: Please provide more information on how the proposed activities will reduce the climate risks, and further information and justification of the design of these activities and in particular the mangrove restoration. (e.g. why restoring 100 Ha? What are the expected benefits for sediment trapping, reducing erosion etc? After how many years would these benefits be produced? Details on the biophysical conditions and if they are suitable for restoration species to be replanted, density…)

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			CR.4 The community in the Mahakam Delta is a marginal community group, with geography of the region separated from the land side, causing limited access to information, education, health and economic access. This causes the local community in the delta to be a community that is very vulnerable not only socially economically, but also vulnerable to the pressure of climate change that has occurred at this time. With the intervention of the program, the local community will slowly be able to manage its economic activities in a sustainable manner by synergizing three main pillars, namely synergy between social aspects, economic aspects and environmental aspects within the corridor of sustainable development
	3. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	The information provided is insufficient. The concept proposal does not provide information on concrete economic and social benefits in particular, or on their equitable distribution to vulnerable communities, households, and individuals. The proposal does not indicate major vulnerable groups or indigenous groups in the area, it only refers to vulnerable communities in general. **CR 5:** Please clarify if there are particularly vulnerable groups, minority or indigenous groups in the target areas and what benefits would the project provide in particular to these groups. **CR 6:** Please include information in more detail on the expected social and economic benefits (e.g. expected income increase per household,	**CR.5** Most of the people in Mahakam Delta are migrants who have inhabited the area since the 1940s until now, which is dominated by ethnic Bugis. With the increasing population directly giving logical consequences for the utilization of the area as a place of their livelihood. The surge in population growth began in 1997 when the monetary crisis in Indonesia occurred. The migrants as new residents, with big capital opening shrimp farms with the main commodity of tiger shrimp which is an export commodity, this resulted in the marginalization of local people who had long inhabited this area. From this point, the target of project activities with the involvement of vulnerable groups that have long inhabited the Mahakam Delta region as a priority

		…) from the project activities as well as their equitable distribution. **CR 7:** Please clarify if there are issues around user and access rights to the mangrove area, fish ponds and other natural products	for program beneficiaries, so as to improve their socio-economic conditions supported by capacity building in sustainable livelihood management **CR.6** The social and economic benefits of the community, where at present the income level of poor households per day averages at least US $ 2 (Rp. 27,000 / day), after program intervention through environmentally friendly ponds activities, management of non-timber mangrove products and capacity building of local communities, so that household income is predicted to increase by an average of at least US $ 3.5 / day (Rp. 47,250; / day).This is the result of the socio-economic impacts received by the beneficiary community **CR.7** Access rights in the mangrove area were obtained from forest management unit of the Mahakam Delta (KPH) as an area management institution in the Mahakam Delta. The steps to coordinate the sustainable management of the area have been carried out intensely by the YML team by building an agreement on the management of environmentally friendly and sustainable areas. Every years together with the Parties, conduct monitoring and evaluation of program achievements that have been or are being carried out by every actor working in the Mahakam Delta
	4. Is the project / programme cost effective?	It is unclear if the project is cost-effective. In addition, the concept proposal does not provide information on sustainability and how the project results will be sustained after project completion.	

		CR 8: Please provide clarification how the selected measures are effective in addressing climate related risks and vulnerabilities. **CR 9:** Many mangrove restoration attempts have been ineffective, with planted seedlings suffering high mortality rates due to bad choice of species, or inadequate physical conditions and sediment supply. Please provide further details on the feasibility and potential success rate of mangrove restoration in the area (and previous success rate of YML in restoring mangroves) and how to balance sediment provision for improved restoration results as the area has excess sediment accretion which most likely can cause die-off if mangroves are smothered. **CR 10:** Please provide other information on how the chosen adaptation options in the 3 components compare to other adaptation measures that can be considered in the area. **CR 11:** Please provide further information on how the project results will be maintained in the future after the project has ended (e.g. maintenance of mangrove monitoring, costs of implementation and surveillance of the mangrove policy, funding for scaling up the silvo-fishery activities)	**CR.8** The activity steps that are created and contained in 3 components have been designed based on the effectiveness of program implementation, target groups of beneficiaries, namely vulnerable groups, aspects of social environmental sustainability and the level of vulnerability of the region, thus ensuring the sustainability of the program after the project ends and program replication as a learning process that can improved in other areas. **CR.9** Departing from the experience and learning of the YML team that has conducted reforestation activities in the Mahakam Delta in the last 5 years, the successful implementation of reforestation is inseparable from the adjustment of reforestation activities with the condition of natural resources, implementing resources, mechanisms for implementing activities and aspects of monitoring and evaluation program. Natural resources are how planting activities must consider the type of soil, mangrove species to be planted are local species, reforestation strategies by considering priority scale based on the vulnerability of the area and the benefits of the plant's ecological function. For human resources, how can the capacity / target group be improved, so that they know and understand the proper reforestation process and also the importance of these activities for the sustainability of their livelihoods, so that morally they will maintain the sustainability of reforestation from natural and human

			disturbances. In carrying out the activities, the financing factor is very important, so fundraising by the YML team is an important priority in running the program, one of which is through partnerships and designing these activities effectively. Monitoring and evaluation activities are key in carrying out mentoring and assessment of project success, several reforestation strategies have been implemented with suitable mangrove species planted, the ability of the species as sediment traps without jeopardizing the level of life of the mangrove itself, and periodically monitoring mangrove growth rates by using monitoring tools there is. **CR.10** The activities steps in these 3 components are adaptation steps that have considered the sustainability of the program in terms of environmental, social and economic improvement, up to 2 years after the end of the project. Several of the activities that have been carried out by other stakeholders that have been implemented in Delta Mahakam in the past 10 years are only temporary (financing based on activity cycles only) without any design post-program **CR.11** Monitoring, evaluation and mentoring are key aspects for program sustainability, three things that YML will implement as a local institution after the end of the project, which will be

			implemented for 2 years. External level monitoring and evaluation is also carried out annually and quarterly program mentoring for two years after the end of the project with other stakeholders in the Mahakam Delta region. Funding sustainability for silvofishery activities is carried out by applying the revolving funds mechanism from previous silvofishery funding activities *Addressed in table 6.a (page 21)*
	5. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	In principle yes. The proposed project components seem in line with a number of national and subnational strategies and development plans. More details may be needed at the stage of full project developmen to ensure consistency of the detailed activities with the national policies.	
	6. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund??	Requires further information. The proposal highlights some regulations with which the project is in line. However, some of the proposed activities may have to comply with additional national technical standards or regulations such as Environmental Impact Assessments (EIAs), labor laws, and aquaculture and public health regulations (for silvo-fishery, and non-timber food products). It's unclear if some of the activities (mangrove restoration, silvo-fishery ponds) may require permitting. **CR 12:** Please identify additional national technical standards and regulations, and state compliance in a logical manner, if there's a need	**CR.12** Regilation of The Minister of Home Affairs No. 61 of 2010 *Addressed (page 25-26)* **CR.13** Republic of Indonesia Law No. 23 of 1997 Concerning Environmental Management *Addressed (page 26-27)*

		for permitting and who would be the clearing authority. **CR 13:** Please demonstrate compliance with the fund's environmental and social principles more clearly, (e.g. labour rights, pollution prevention, public health, etc)	
	7. Is there duplication of project / programme with other funding sources?	Unclear. The concept mentions that there's no duplication of funding for implementing the project but does not highlight other projects that may seek to achieve the same objectives or that may be able to complement this proposal. There are numerous efforts for mangrove restoration and rehabilitation in Indonesia including with an aim for improving restoration design to maximise adaptation benefits. Other relevant and potentially overlapping projects may exist and need to be identified, in particular to draw on the lessons from previous initiatives. **CR 14:** Please identify all relevant and potentially overlapping projects/programmes and provide more details the linkages and synergies with other projects if any. **CR 15:** Provide information and lessons from the Mangrove rehabilitation program and clarify how they will inform the design of this proposed project.	**CR.14** All proposed activities are based on the relevance of real conditions in this region, there are several activities that are also carried out by other actors in various regions. However, this can be used as a program synergy, related to technical implementation and learning outcomes (see in table 6.c). **CR.15** Experience in the implementation of mangrove rehabilitation that has been carried out, will make learning important, how a reforestation program is designed based on the topology of the area to be reforestated, which is based on environmental, social and economic aspects that are integrated in reforestation strategy
	8. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	The project proposal does not have a specific component on knowledge management but has some activities that contribute to knowledge sharing. This aspect needs further development, particularly at the project development stage.	

		CR 16: Please provide more information on how you will systematically capture and synthesize lessons learned from the project interventions.	**CR.16** The knowledge management process at the program development stage has been carried out by building networks of parties, informal or formal meetings through FGDs, workshops, etc. in addition to YML's institutional technical capabilities. The program also involves technical institutions in their fields and some forms of learning can also be distributed in the form of leaflets, brochures, guidebooks and films
	9. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	It is unclear if a stakeholder consultation has taken place or if it is planned for the project preparation phase, as the text mixes past and future tenses. **CR 17:** Please clarify if you have carried out already a consultative process with key stakeholders, describing the consultation process and their potential roles in the project.	**CR.17** The consultation process before program implementation has been carried out with several key stakeholders. At the Village Level a joint consultation was held with Muara Pantuan Village Chief, Sepatin Village Head, 1 women's group, 1 group of fish farmers, several local community leaders in the Mahakam Delta. At the district level together with Marine and Fisheries Department (DKP) and Regional development and planning agency (BAPPEDA), while at the provincial level consultations with Environment Department (DLH), Forest Management Unit (KPH) Delta Mahakam and Sub-National Board of Climate Change (DDPI) were conducted
	10. Is the requested financing justified on the basis of full cost of adaptation reasoning?	No. It is unclear that these measures respond to a climate risk. See previous CR 1, 2 and 3. **CR 18:** Please address previous CRs on this point and provide additional information to demonstrate how the interventions will address climate change related risks and increase the resilience of both the communities themselves and the Mahakam Delta as an ecological system, in the face of future climate change impacts and scenarios.	**CR.18** Addressed in the matrix on page 31-32

	11. Is the project / program aligned with AF's results framework?	No. **CR 19:** Please address previous CR 1-3 and 18 above.	**CR.19** Addressed
	12. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	Unclear. The proposal does not provide sufficient details as to how the project activities will be sustained, replicated and scaled up after the project completion. There's an assumption that by raising awareness, training communities and integrating certain principles in policy, replication and scaling up will happen. Need further development of specific mechanisms to ensure sustainability of the project results. **CR20:** Please provide more details on the arrangements through which project activities will be replicated and scaled up and what mechanisms will be formulated by the project and how these eventually will be supported by other means. (e.g. how will the village policies be implemented and replicated in other villages, how will the monitoring activities continue once the project funds have ended, etc.)	**CR.20** To ensure the sustainability of the program that can be replicated and scaled up after the end of the project, YML has developed M & E for a duration of 2 years. In addition YML with full support from DDPI has worked in building a green development agreement with the parties from 2017 to 2018 in Delta Mahakam which involves multi stakeholders from government, companies, NGOs and community leaders, which is the commitment of East Kalimantan province in reducing carbon emissions from 1,500 tons of CO2 eq in 2015, to be 1,000 tons of CO2 eq by 2030. This green development cooperation agreement, can also be used as a tool to replicate other village programs by stakeholders in addition to being a program learning media. Furthermore, the sustainability process of M & E designed by YML, by optimizing the results of agreements that have been built, will involve directly KPHP institutions, dipterocarfa research, DDPI and the community for 2 years with joint financing within the framework of collaboration and sustainable management of the Delta Mahakam area in adapting to climate change
	13. Does the project / programme provide an overview of environmental and social impacts / risks	Incomplete and requires further clarification. The risk identification has been made to some degree but several risks may not have been considered or assessed properly. The related	

	identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	information is very general in nature and does not provide enough detail that permits assessing the level of risk – estimated C level. The information in Table 7, under the column potential impacts and risks are often statement of objectives to minimise risks. Several of the principles that were deemed "not applicable" can be areas of risk: e.g. public health, the project will produce food related products and these may need to comply with certain hygiene and health standards to minimise public health risks. During project preparation, all activities should be fully identified and risks fully identified and managed as required. **CR 21:** Please provide a more robust assessment and overview of potential risks of the project, such as land tenure, access rights to coastal resources, gender considerations, ecosystem services, use of potential pollutants (polybag, plastic packaging…) etc. When a risk is deemed not applicable, please provide a brief justification as to why.	**CR.21** Addressed in the table 7 on page 34-38
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	Yes	
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	No. it is at 8.62% CAR1: Please adjust the management fee to be at or below 8.5% of the total project budget before the fee.	Addressed
	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme	Yes.	

	budget (including the fee)?		
Eligibility of IE	4. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	Yes.	
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	n/a at concept stage	
	2. Are there measures for financial and project/programme risk management?	n/a at concept stage	
	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	n/a at concept stage	
	4. Is a budget on the Implementing Entity Management Fee use included?	n/a at concept stage	
	5. Is an explanation and a breakdown of the execution costs included?	n/a at concept stage	
	6. Is a detailed budget including budget notes included?	n/a at concept stage	
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data,	n/a at concept stage	

	targets and indicators, in compliance with the Gender Policy of the Fund?		
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	n/a at concept stage	
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	n/a at concept stage	
	10. Is a disbursement schedule with time-bound milestones included?	n/a at concept stage	

Technical Summary	The proposed project concept "The adaptation measures to support sustainable livelihoods for local communities in mangrove ecosystem in the Mahakam Delta, East Kalimantan" aims to provide technical assistance as well as building the capacity of local communities to adapt to climate change impacts in the mangrove ecosystem of Mahakam Delta. The project focuses on 3 major components: 1. Restoration of mangrove ecosystems from the impacts of climate change as sources to support economics development; 2. Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation; 3. Promoting an alternative economics development for local community. The initial technical review found that the proposal did not meet the requirements of the Adaptation Fund primarily because a lack of justification of the climate threats, given that mangrove degradation in the area are largely due to other human activities. The concept does not provide enough details on the adaptation potential of the proposed interventions and activities in face of future climate scenarios. The linkages between the ecosystem-services of the mangroves and the resilience of the communities are not demonstrated and need stronger articulation. The review also observed that there are issues that need to be addressed with regards to cost-effectiveness, sustainability and risk

	assessment.
Date:	8/26/2018

REQUEST FOR PROJECT/PROGRAMME FUNDING FROM THE ADAPTATION FUND

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

The Adaptation Fund Board Secretariat
1818 H Street NW
MSN P4-400
Washington, D.C., 20433
U.S.A
Fax: +1 (202) 522-3240/5
Email: afbsec@adaptation-fund.org

ADAPTATION FUND

PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category:	Small-sized programme
Country/ies:	Indonesia
Title of Project/Programme:	The adaptation measures to support sustainable livelihoods for local communities in mangrove ecosystem in the Mahakam Delta, East Kalimantan
Type of Implementing Entity:	National implementing entity
Implementing Entity:	Kemitraan
Executing Entity/ies:	Yayasan Mangrove Lestari (YML) Delta Mahakam
Amount of Financing Requested:	US $ 598,724.00 (in U.S Dollars Equivalent)

Deleted: 599,351.00

Project / Programme Background and Context:

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

Mahakam Delta is one of largest mangrove ecosystems in Indonesia. Located in east coastline of East Kalimantan, Kutai Kartanegara District (117° 15'–117° 40' east longitude and 0° 19'–0° 55' south latitude), this area comprises of 64 small delta islands formed by siltation from Mahakam River. In this area there are 3 sub-districts and 29 villages with total population of 2015 as many as 138,546 people, and 54.7% or 75,806 people (22,639 residents) consisting of 39,012 men (52%) and 36,794 women (48%) in 13 villages located in the Mahakam Delta.

Table 1 : Number of villages and populations in Mahakam Delta (*KPHP Delta Mahakam, 2015*)

No	Sub Districh	Village in Mahakam Delta	Village Area		Total Population
			Ha	%	
1.	Anggana	1. Tani Baru	14.481,42	12,76	4,457
		2. Muara Pantuan	12.810,06	11,29	5,478
		3. Sepatin	33.170,24	29,22	4.718
		4. Kutai Lama	15.476,73	13,63	4,183
		5. Handil Terusan	8.665,45	7,63	6,543
		6. Anggana	205,04	0,18	3,621
Total 1			84.808,94	74,72	29,000
2.	Muara Badak	1. Saliki	11.550,67	10,18	5.331
		2. Muara Badak Ulu	1.296,08	1,14	5.006
		3. Salo Palai	1.516,87	1,33	2.077
Total 2			14.363,62	12,65	12,414
3.	Muara Jawa	1. Muara Kembang	12.861,56	11,33	3.877
		2. Muara Jawa Tengah	603,30	0,53	5.324
		3. Muara Jawa Ulu	336,41	0,29	14.371
		4. Muara Jawa Pesisir	529,92	0,47	10.820
Total 3			14.331,19	12,63	34.392
TOTAL 1 + 2 + 3			113.530,77	100,00	75.806

Mahakam Delta has an important ecological role and high biodiversity potential. in the mangrove area there are many of organisms, both flora and fauna that live together, among which there are organisms during his life settled in the area. But there are also living in the mangrove area partially only. There are various types of endemic fauna that live in the coastal area (delta Mahakam) which is a type of primate Bekantan. in addition there are also Mahakam Dholpin (Dholpin Irrawady), live in upstream Mahakam river and sometimes dholpin goes to the downstream Mahakam to find food .The function of the mangrove area as a provider of natural food for both fauna is very important. Currently with mangrove areas damaged, dholpin Irrawady is rarely seen again playing around the Mahakam Delta as it once was when the mangrove area is still awake in the area.

Delta Mahakam has a mangrove forest cover that is naturally dominated by the *Nypa fruticans* (Nipah) species, followed by several other types of mangrove plants, such as *Avicennia spp* (Api-api) and *Rhizophora spp* (Bakau). Some of the mangrove vegetation that also grows in the Mahakam Delta is *Rhizophora apiculata* (Bakau laki), *Bruguiera parviflora* (Tumu), *Xylocarpus granatum* (Nyirih / Boli), *Sonneratia caseolaris* (Pidada), *Sonneratia alba* (Perepat) and *Heritiera littoralis* (Dungun) (*Dutrieux, 2001*). The 90% of its territory consists of islands that make up the delta, which consists of small and medium-sized islands.
There are 13 villages located within the Mahakam delta area, consisting of 3 Villages all within the area, namely the village of Tani Baru, Muara Pantuan and village Sepatin or has an area of 53.27% of the Mahakam Delta area. The next, 46.73% of the total extent of Delta Mahakam is located in 10 villages, namely Handil Terusan, Kutai lama and Anggana villages, in Anggana Sub-district; Saliki Village, Muara Badak Ulu, Salo Palai in Muara Badak sub-district; As well as the village of Muara kembang, Muara jawa tengah, Muara Jawa Ulu and Muara Jawa Pesisir in Muara Jawa sub-district.

Fig. 1. Community settlement in the Mahakam Delta

Of the 113,503.77 hectares of the Mahakam Delta area, the area of land cover for vegetation cover is 37.73%, as much as 54.19% of land has been converted into fish ponds, conversion for other economic activities by 4.04%, utilization of residential and open land as much as 0.88% and the remaining 3.16% is wetland area (*BPKH Wil IV Samarinda, 2015*).

- In addition, Mahakam Delta also supports the livelihoods of local communities, which mainly work as fisherman and fish farmers. Until 1995 land openings in the mangrove ecosystem only reached $\pm$ 5% is used as settlements and other economic activities. However, at the end of 1997 to 2005, the mangrove area in the Mahakam Delta has been exploited up to 54.19% which caused degradation of mangrove ecosystem due to land conversion from mangrove forests to fishponds.

Fig. 2. The Mahakam Delta landcover map 1995, 2005 and 2016

In Additional, the Mahakam Delta has a very close relationship with the watershed and the ocean so it has a strong ecological linkage between watershed, delta and coastal, since most of the waste and suspended particles entering the coastal areas are derived from the watershed caused by coal mining activities, urban waste, as well as oil and gas exploration activities in the Mahakam Delta has been a logical consequence of the degradation of water quality in the delta region, while the degradation of mangrove ecosystems in the delta has degraded mangrove ecological capacity in reducing pollutants or water contaminants.

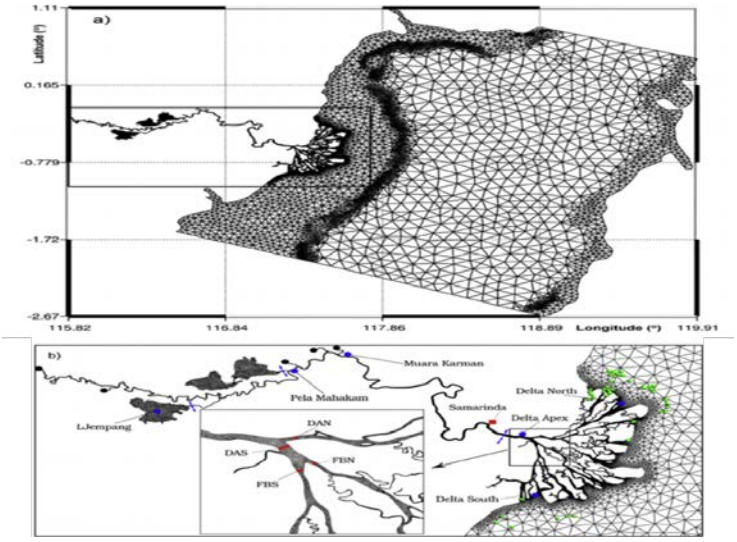

Fig. 3. The Mahakam watershed distribution from upstream to downstream area

The Climate change also leads to uneven local rain intensity at some points of the Mahakam Delta region so that local people have difficulties in planning their business activities that can result in the decline of people's livelihoods.

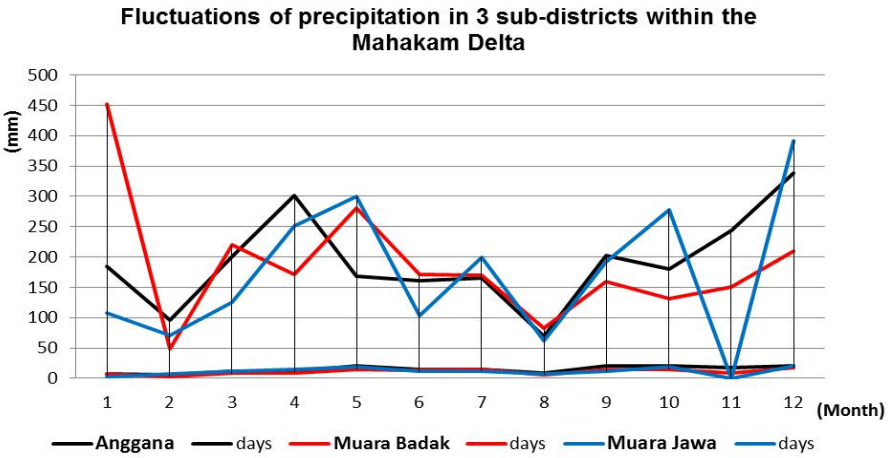

Fig. 4. Precipitation chart at the Mahakam Delta in 2016 (*Kutai Kartanegara statistic, 2017*)

Data from Indonesian Geospatial Agency showed that the highest tide level in Mahakam Delta was 2.8m in 2000. After that period of time, the highest tide level has increased to 2.9m-3m. Another study conducted by Dewayany et al. (2005) also revealed that sea level rise that occurs in Mahakam Delta up to 2014 was 0.475 cm/year. According this study, sediment accumulation rate in Mahakam Delta has also increased by 0.196 cm/year. The rise in sea level led to coastline reduction by 1.23–4.84 m. These bring negative consequences to local communities, such as the increase in natural disaster events. Although a thorough study regarding the change in floods frequency in Mahakam Delta has not been conducted yet, local communities have experienced the increase in flood frequency and intensity in the past 10 years. Sea level rise has caused the reduction of fish ponds area owned by local communities by 0.71 – 5.07 ha/year since seawater rise might destroy the dykes.

Fig. 5. Coastal conditions in the Mahakam Delta

Several studies also pointed out that Mahakam Delta has suffered from climate change. Sea level rise, sea water intrusion, sedimentation, erosion and the decrease in fish productivity are the impacts of climate change that have been identified in Mahakam Delta. Sedimentation also affects water quality in Mahakam Delta as the turbidity level would increase as well. This data shows that local communities in Mahakam Delta are vulnerable to the impacts of climate change. Meanwhile, the increase in sedimentation rate results in siltation so that fishermen should travel further to find fishing ground. On the other hand, the potential of fishery resources that have been experiencing a significant decrease in productivity caused by climate and non-climate factors that are not well managed. The number of fishing and fish farmer communities involved in putting fisheries business as the main economic of the community. These conditions are very threatening to preservation and therefore a mentoring process is required that provides solutions to local communities in the develop an alternative economic that considers the sustainability of the ecosystem.

Therefore, intervention on climate adaptation measures in Mahakam Delta is urgently required in order to address these issues so that the policy needs of environmental social and economic policy from local to provincial level. The social transformation of the Mahakam Delta community begins with some complex social problems. Such as population growth, conflicts of interest and communication processes between communities that have different background perspectives on the Mahakam Delta. This programme aims at providing technical assistance as well as building the capacity of local communities to adapt with climate change impacts by considering ecological, social and economic aspects in Mahakam Delta.

This concept is very important as an effort to build resilience and adaptation of vulnerable communities from climate change, so it is feasible to be supported of funding by Adaptation Fund. When these conditions of vulnerability impact are not addressed immediately, then the ecosystem of the mangrove area as a coastal green corridor is increasingly threatened. The more widespread destruction of mangrove forests would also reduce fish resources around the mangrove ecosystem, so that the fishermen's distance to the fishing ground will be even further. With the ongoing practices of aquaculture that is not environmentally friendly can lead to a decrease in the carrying capacity of fishpond so the production produced the longer will decreased and ultimately the impact of wider damage will be felt by the public like the ocean waves, abrasion and decline in people's income around the mangrove area and this is further exacerbate the condition of community vulnerability.

Project / Programme Objectives:

List the main objectives of the project/programme.

The main objectives of the project is providing technical assistance as well as building the capacity of local communities to adapt with climate change impacts in mangrove ecosystem in Mahakam Delta and this focus on:

1. Restoration of mangrove ecosystems from the impacts of climate change as a sources to support economics development;
2. Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation;
3. Promoting and to develop an alternative economics development for local community.

Project / Programme Components and Financing:

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

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

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. Restoration of mangrove ecosystems from the impacts of climate change as a sources to support economics development;	1.1.1. Raised awareness of communities and local government in the mangrove ecosystems rehabilitation; 1.1.2. Mangrove reforestation activities about 628.800 plants in 3 villages; As much of 600,000 plants will cover 120 hectares of degraded mangrove forest and 36 hectares of community aquaculture land as much of 28,800 plants 1.2.1. Increased knowledge among students about the importance of mangrove ecosystem as an effort to preserve natural resources (elementary and junior high school students); 1.2.2. Disseminating learning and awareness about the development of mangrove ecosystem that support alternative sustainable livelihoods.	1.1. Formed communities and local governments awareness in the conservation natural resources; 1.2. Strengthened awareness and ownership of local communities and groups of students related to conservation of mangrove ecosystem as an effort to overcome the impact of climate change	**261,332.40**
2. Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation;	2.1.1. Protected and conserve 100 hectares of mangrove planting in 3 villages, as well as mangrove ecosystem in the area, covering of 21,288 hectares.	2.1. Encouraging the institutional of policy in the conservation mangrove ecosystems	**62,147.10**

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3. Promoting and to develop an alternative economics development for local community.	3.1.1. Increased knowledge and skills of local communities in the application and development of eco-frendly fishponds (silvofishery model) 3.1.2. Increased knowledge and skills of local communities in the management of sustainable non-timber mangrove products as an alternative income. 3.2.1. Development of silvofishery ponds in 3 villages; 3.2.2. Business development of non-timber mangrove product for 6 CBOs of women in 3 villages.	3.1. Enhance the the capacity of local communities to adapt with climate change impact in mangrove ecosystem; 3.2. Increased local community income by means the promotion of sustainable alternative economics development.	**183,283.50**
4. Project/Programme Execution cost			48,887.00
5. Total Project/Programme Cost			**506,763.00**
6. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			43,074.0 Deleted: 701
Amount of Financing Requested			~~598,724.0~~ Deleted: 599,351.00

Projected Calendar:

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

Milestones	Expected Dates
Start of Project/Programme Implementation	January 01, 2019
Quarterly Monitoring	May 31, 2019 August 31, 2019 November 30, 2019 February 28, 2020 May 31, 2020 August 31, 2020 November 30, 2020
Mid-term Review (if planned)	January 31, 2020
Project/Programme Closing	December 31, 2020
Terminal Evaluation	January 31, 2020

PART II: PROJECT / PROGRAMME JUSTIFICATION

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

The Climate change is happening in the Mahakam Delta currently looks real, such as sea level rise annually which can cause a coastline decrease of 1.23-4.84 m, the rising tide of sea level reaching 2.9 - 3.0 m which can damage the community pond embankment, the increased frequency of floods due to rainwater runoff pressure from the upstream area which simultaneously also the occurrence of high sea tides in coastal areas, and uneven local rainfall intensity. While non-climate factors also affect the area of the Mahakam Delta. Coastal waters quality pressures are also influenced by : a) Pressure from the upstream area is polluted materials that are dissolved and carried through the Mahakam Watershed towards the downstream area; b) Pressure of the downstream area such oil and gas exploration activities, in coastal and local community economics activities that are not environmentally friendly.

The scenario of the impact of climate change in the future without the intervention of the program is predicted to have an impact on:

1. Increasing the coastal abrasion rate to 1.2-4.8 m / year can be estimated shoreline reduction or loss between 40-50 meters in 2030 in the Mahakam Delta due to the reduction of most of the greenbelt functions in the coastal areas and the tidal pressure of the sea, currents, waves and storms.

2. Increased social and economic vulnerability of local communities, the impact of damage to mangrove ecosystems as a place to depend on their livelihoods, which in turn reduces the level of family income, so that poverty levels will increase, causing low levels of family health, education and nutrition.

3. The reduced ability of mangrove ecosystems as a buffer for coastal areas, as well as an increase in normal sea level rise of 4.5 mm / year and can reach 7.5 mm / year (Sutrisno, et al, 2004) in the Mahakam delta, will increase the rate of sea water intrusion which will reach more than 70 Km / 43.5 miles to the mainland through the Mahakam River flow. In October 1997 there was sea water intrusion reaching the city of Samarinda through the Mahakam River which was + 65 km from the mouth of the Mahakam Delta after the absence of rainfall for 2.5 months. Furthermore, in September 2015 sea water intrusion reached the city of Samarinda after there was no rainfall for + 1 month, so 14 intakes as providers of raw water for the community stopped operating for several days, because the water content of the Mahakam River had reached 1200 milligrams / liters - 3000 milligrams / liter (BPBD Prov East Kalimantan, 2015).

Both of these greatly affect the water quality significantly with in the mangrove ecosystem in the Mahakam Delta. The impact of the climate change and non-climate developed in the concept of this proposal in to three components, that is:

Components 1: Restoration of mangrove ecosystems from the impacts of climate change as a sources to support economics development;

Restoration of the mangrove ecosystem done by looking at condition of mangrove ecosystem in Mahakam Delta which is very concern, so it is necessary to improve and restore mangrove ecosystem as ecological service provider and protection of economic activity of the community from sea waves, the storm and the impact of sea level rise and abrasion. This component also aims to strengthen awareness and ownership of local communities and youth groups (students) related to the conservation of mangrove ecosystems which is an important component in a coastal area.
The Mangrove ecosystem must be managed based on the paradigm of ecological covering the principles of interdependency among elements of ecosystem, the cyclical nature of ecological processes, flexibility, diversity and coevolution of organisms and their

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environment in a watershed physical unit with coastal areas. Alternative utilization of coastal areas that are multiple-use, with some utilization activity is placing mangrove as one of ecosystem element in aquaculture management with Silvofishery system and some other activities in mangrove areas without the need to convert the existing mangrove ecology. With such an alternative management is expected to increase the economic value of mangrove forests, without threatening the ecological function.

Mangrove reforestation will be undertaken by local communitas who have previously been trained in 3 villages located in the Mahakam Delta namely Muara Pantuan village, Sepatin village and Muara Badak Ulu village Growth monitoring and carbon analysis will also be undertaken as part of restoration efforts. To maintain the sustainability of the restoration result, it is important to raise awareness of local communities, and local government includes involving youth groups (school children) in raising awareness. In addition, to oversee the sustainability of the program results will also provide guidebooks, documentaries and reporting that will also be used as a media campaign and publication. In this component will also facilitated the compile of policy briefs that are expected to provide input in formulating regional policies related to the conservation of mangrove ecosystems.

Activities in component 1 are designed as an effective strategy in reducing the risk of micro climate change that is built integratively, namely synergizing between mangrove reforestation activities, with capacity building and awareness of the target community groups in 3 villages beneficiaries so that local communities can have a commitment strong in maintaining the sustainability of reforestation.

Reforestation activities are carried out with an area of 120 ha on the coast and estuary, activities focused on the area around the settlement and community livelihood areas with a planting distance of 1 x 2m (5,000 mangroves / hectare). Mangrove species planted according to the characteristics of alluvial soil types are Rhizopora mucronata, and some types of soneratia sp and avicennia sp which are local species of mangroves found in the Mahakam Delta.

After 3-5 years of reforestation, it is expected that mangroves that have been planted can have a positive impact. With its ability as a sediment trap media, it will reduce the occurrence of abrasion rates, reduce the occurrence of seawater intrusion and improve fisheries potential by providing its service functions as spawning ground, feeding ground and nursery ground for aquatic biota.

Components 2: Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation;

Sustainability of the program should be strengthened with a system of local government policy, by encourage the institutionalization of local policies related to the sustainability of mangrove ecosystems is essential to maintain success. It is expected that through the process of presentation and assistance there will be a draft of local policy in the form of village regulations as a legal protection, where in formulating the policy all relevant stakeholders will be involved so that the policy is expected to be implemented by all parties. The institutionalization of this local policy will be facilitated in 3 villages, namely Muara Pantuan village, Sepatin village and Muara Badak Ulu village in the Mahakam Delta region. The existence of this local policy is expected to maintain the conservation of mangrove ecosystems in the Mahakam Delta region.

To ensure the sustainability of the future program implementation, also formulated a Policy Brief document as policy and program recommendations which will be disseminated to other parties, so that this document is expected to create synergy in the management of the Mahakam Delta area. In the preparation of the policy brief will involve the experts of the

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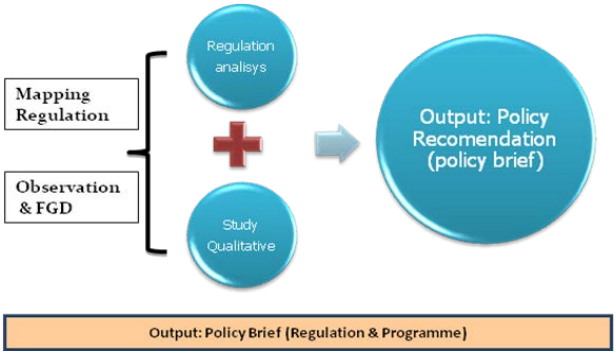
university, “difterocarfa” research, implementation team and other relevant parties, by utilizing program learning outcomes, regulation analysis and data of related study result.



Components 3: Promoting and to develop an alternative economics development for local community.

To build resilience and adaptation to the climate change, this program will restore the function of the ideal region by developing demonstration plot of silvofishery pond models, which is part of efforts to restore the carrying capacity of the environment and land, reduce the occurrence of water quality degradation, by planting mangrove in ponds and proper aquaculture practices with the use of organic production facilities, thus providing sustainable economic value and this model will also be an example for local communities in the application of their aquaculture system in the future.

This program also facilitates developing alternative economic for local communities by increasing community involvement in conservation measures in the Mahakam Delta. In addition, through this program is expected to help local communities increase their income by adding value to non-timber mangrove products and promote alternative economic resources, by building a synergicity between economic activities of the community and the ecology of the region in achieving sustainable mangrove ecosystem management in the future based on the principle of adaptation and resilience of climate change. In all activities in this component will regard the involvement of vulnerable groups including women's groups.

The community in the Mahakam Delta is a marginal community group, with geography of the region separated from the land side, causing limited access to information, education, health and economic access. This causes the local community in the delta to be a community that is very vulnerable not only socially economically, but also vulnerable to the pressure of climate change that has occurred at this time. With the intervention of the program, the local community will slowly be able to manage its economic activities in a sustainable manner by synergizing three main pillars, namely synergy between social aspects, economic aspects and environmental aspects within the corridor of sustainable development.

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

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- **Ecological / Environmental Benefits**

The development of restoration activities will provide benefits to the recovery of fish resources, by utilizing the ecological function of mangrove areas as a spawning ground and feeding ground of water biota. While the benefits of climate with mangrove restoration then the future, existence of the area will be able to minimize the occurrence of abrasion, providing natural protection from the pressure of ocean waves and storms.

a. Restoration of mangrove ecosystems

Rehabilitation of mangrove activities as much of 600,000 plants will cover 120 hectares of degraded mangrove forest will be conducted by involving local community by implementing appropriate restoration strategy to generate optimum outputs for providing ecological functions in mangrove ecosystem and 36 hectares of community aquaculture land as much of 28,800 plants (for demonstration plots in the 9 fishpond).
The Implementation of service mechanism seed for seed collection activities, nursery and planting, carried by coastal communities vulnerable to impacts of climate change by means of community groups in each–location. To each event will be accompanied by YML. The implementation of mechanism as in below this the figure 6.

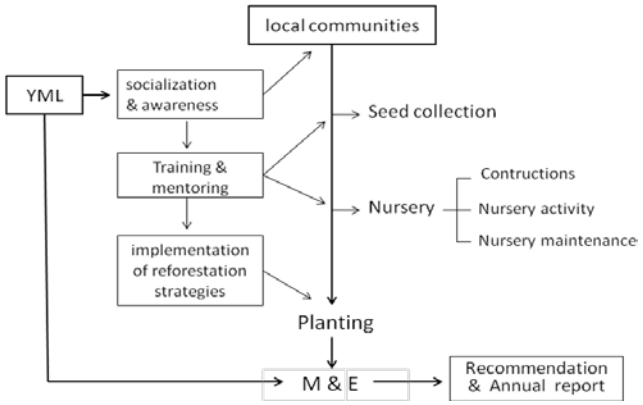

Fig. 06. The mechanism of service delivery and planting seedlings

The Restoration implementation will be of involves vulnerable communities by considering gender mainstreaming in every stage of its activities. The Participants will be involved as many as 276 people with sub activities and roles of each gender as shown in the following table 2.

Table 2. The Involvement of gender roles in restoration

Activity	Sub Activity	Gender				Amount
		Male	%	Female	%	
Seed collection	Seed collection	60		-		60 (1)
Nursery	Making nursery constructions	12		-		12
	filling the soil into polybags and propagule nursery	18		30		48
	nursery maintenance	12		6		18
Planting	Planting	111		27		138
TOTAL		**213**	**77**	**63**	**23**	**276**

(1) The location of the seed collection does not allow the female to be directly involved

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- Seed collection involves a 100% male; The total included 60 people;
- Nursery activities involving male as much as 54% or as many as 42 people and female by 46% or 36 people with a total community involved as many as 78 people;
- planting with 77% male, or as many as 111 people and 23% female and 63 people with a total community involved 138 people.

Not only involves in mangrove planting in mangrove rehabilitation activities, local community will also be trained on rehabilitation strategy that will be implemented so they could understand that mangrove rehabilitation is actually based on priority area. The priority area includes protected areas that are able to reduce damage due to sea level rise, extreme sea waves and storm. Mangrove planting will also be conducted in silvofishery ponds.

b. The rehabilitation program consists of several components as follows:

b.1. Propagules collection

- 600,000 seedlings will be collected in 3 sites to be planted in critical land and coastal areas for 2 years: US $ 0.044 x 600,000 = US $ 26,400
- 28,800 propagules will be collected to be planted in 36 ha fish ponds area: US $ 0.044 x 28,800 = US $ 1,267.2

b.2. Nursery (nursery location is planned to be located close to planting area)

- Nursery construction development by community, including construction materials, manpower and lease of nursery land of 6 nurseries in 3 sites: US $ 2,515.2 x 6 = US $ 15,091.2
- Land filling into polybags: US $ 0.028 x 628,800 = US $ 17,606.4
- Propagule nursery: US $ 0.004 x 628,000 = US $ 2,515.2
- Nursery treatments, duration 3 to 4 months: US $ 0.04 x 628,800 = US $ 25,152

b.3. Planting

- Transportation to the planting area: US $ 0.012 x 628,800 = US $ 7,545.6
- Ajir (stake): US $ 0.032 x 628,800 = US $ 20,121.6
- Planting based on SOP of planting: US $ 0.056 x 628,800 = US $ 35,212.8
- Making planting certificate of each plot signed by local authority

b.4. Monitoring

- Monitoring 3 months after planting
  Monitoring the mangrove growth rate and survival rate. Analysis highly or low of the mangrove survival rate will be analyzed from the affecting factor such as climate and non-climate factor; After that the results of the analysis form the basis for formulating appropriate action recommendations or solutions; Preparation of results monitoring report.
- Monitoring 6 months after planting
  Monitoring the mangrove growth rate and survival rate. Analysis highly or low of the mangrove survival rate will be analyzed from the affecting factor such as climate and non-climate factor; After that the results of the analysis form the basis for formulating appropriate action recommendations or solutions; Preparation of results monitoring report.
- Annual monitoring
  Monitoring the mangrove growth rate and survival rate.
  Analyzing the constraints caused by climate and non-climate factors and the achievement level of the planting program with the level of suitability of existing mangrove ecosystem in a coastal corridor. Provide recommendations to develop appropriate reforestation strategies for program implementation in the next year. This monitoring is carried out jointly by a group that has been trained.

- **Economic and Social Benefits**

Economically, the benefits of silvofishery development is more promising value added through the application of sustainable aquaculture systems with the utilization of organic materials in its management, while the benefits of restoration in addition to the restoration of mangrove ecosystem areas are also available "natural seed banks".
Meanwhile from the social aspect, with the community's understanding of restoration and silvofishery systems, communities will be able to plan restoration strategies based on priority scales including considering areas vulnerable to climate change in the Mahakam Delta.

In this program social benefits for marginal community groups. Groups will be provided with technical assistance for engage in the environmental member group. This efforts are expected to encourage the participation of these groups in the development process in the village, especially in environmental conservation and adaptation to climate change.

a. The Implementing of eco-friendly fishponds (Silvofishery)

Climate and non-climate changes are one of major factors that cause mangrove ecosystem degradation which directly influence to livelihood sustainability of local community. Aquaculture production (fish and shrimp) in Mahakam Delta has also been declining in the past 15 years, for example shrimp production from 135 kg/ha in 2003 to only 24 kg/ha at the moment. So the estimation of local community's income is US $ 384/ha/4 months (this time estimated of shrimp price is US $ 16/kg).

Table 3. Fish Pond Productivity in the Mahakam Delta[(2)]

Data on Decreasing Fish Pond Production at Delta Mahakam					
Years	Large of fish pond (ha)	Production (ton)			Remarks
		Shrimp[**)]	Milk fish[**]	Others*)	
2003	**22,111**	**2,976.5**	**1,365**	**3,095.5**	*) Natural
Average / ha / year		0.135	0,062	0.140	**) in stocking
2009	**75,311**	**1,851.9**	**2,618.7**	**4,261.5**	
Average / ha / year		0.026	0.035	0.056	
Decreased per years (%)		**- 23.98**	**- 9.10**	**- 14.16**	

[(2)] Data on Decreasing Fish Pond Production at Delta Mahakam (*DKP, 2009 in Yunianto, 2014*)

Implementation of silvofishery ponds is expected to recover land carrying capacity and improve water quality by combining mangrove ecological functions through mangrove planting of 800 plants / hectares in ponds with eco-friendly aquaculture techniques so it, ponds productivity can be well recovered in 2-3 years from now. It is also increase fish pond productivity in Mahakam Delta by 50% or 36 kg/ha. With shrimp price assumption is US $ 16/kg ($ 15,5 expire price), it could generate US $ 576/ha/cycle (1 cycle = 4 month); Natural shrimp (*Brown shrimp)* 60 kg/ha @ US $ 2.00/kg, it could generate US $ 120/ha and Milk fish 206 kg/ha @ US $ 1.00/kg, it could generate US $ 206/ha; The resulting total value is **US $ 902/ha/cycle**. The extent of traditional fish ponds in the Mahakam Delta, on average has an area of 3 to 5 ha.

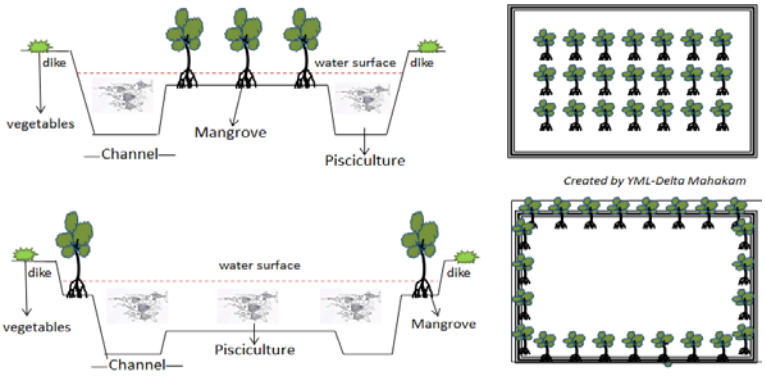

Fig. 7. Silvofishery model to be implemented

This system can also increase other productions such as natural shrimp (brown shrimp) and crab which enter into the fish pond of the waters around the mangrove ecosystem, at the time of water circulation in the pond, because at the time of the circulation of water (replacing water within the pond as much as 20-30% with water from outside the pond), seeds of fish, shrimp and crab from nature also come into the pond.
Silvofishery pond will apply the polyculture pattern of pisciculture more than 1 commodity, such as milk fish + shrimp; milk fish + shrimp + seaweeds (glacelaria sp) or milk fish + seaweeds with pond modeling ditch pond system.

b. Alternative livelihoods

Results YML observation in the field, more than 50% of mangrove fruit has not been fully utilized by the natural habitat or regenerative growth system, most of the mangrove fruit ripe to fall and drift carried away by the tide of sea water. Based on these facts, YML with the beneficiaries utilize mangrove fruit as non timber product has a economic added value, by ensuring only 30% mangrove fruit will be utilized.
Added value management of mangrove products non timber is an effort to utilize the resources that have not been managed and is expected to provide added value for the household / family especially vulnerable family groups that have been living their lives in the Mahakam Delta coastal region. Management of mangrove products non-timber is also expected to be a good alternative livelihoods for women and men including vulnerable household groups, while maintaining the existence and sustainability of mangrove forests in the Mahakam Delta region.

The preparation phase of alternative economics development to non-timber mangrove management activities have been conducted by YML team through socialization and focus discussion in 2016 with vulnerable/female groups in some villages in the Mahakam Delta, the local community respons is very positive against the activities.

Fig. 8. Socialization of sustainable livelihoods in women's groups

The Development of mangrove non-timber products by utilizing mangrove fruit will be managed by 90 people from women's groups and the involvement of other vulnerable groups in the village. In the management of these products will also consider gender justice from the process of providing raw materials by men, the process of production to marketing of products by women. The involvement of members in the group will go through the verification process by utilizing existing groups in the village and will be developed / replicated in other new groups.

Women's involvement because of women's gender roles in the Mahakam Delta is quite productive as well as their housewives are also actively assisting family economic activities such as the activities of aquaculture products, selling food and handicrafts. The development of non-timber mangrove products will be carried out by providing facilitation and assistance and also establishing community based oragnization in each village to help product processing and its marketing. Products that will be produced are dodol (traditional food made from mangrove flour), syrup, candies and other food products. This product can also be a souvenir food that is only obtained from the community within the mangrove area itself so it can be a follow up item of mangrove ecotourism that will be developed by the government.

In addition, through this program is expected to help local people increase their income with added value from mangrove products non-timber and promoting alternative economic resources, by building synergy between the economic activities of society and the area ecology in achieving sustainable mangrove ecosystem management systems in the future based on the principles of adaptation and vulnerability to climate change.

- **Communities vulnerability, including Gender Consideration**

The level of vulnerability of people in the delta, small islands and coastal areas is quite high when compared with the people living on the mainland. There are many inhibiting factors that can lead to high levels of vulnerability in the community, such as the low level of public knowledge, access to education, health, economic and other very limited supporting facilities that are the main cause of the vulnerability of local communities in the delta, small islands and coastal .

Gender and vulnerable groups will become mainstream in the implementation of the programme where the involvement of vulnerable groups will be prioritized 50% including the involvement of women groups at least 30%. Women's participation in Component 1 is primarily in polybag filling activities for reforestation and nursery as well as on raising awareness activities both at the youth groups (students) and at the community level. Women's participation will also be maximized in discussions and development of non-timber alternative economies where through developing non-timber mangrove business activities are expected to provide increased income for their households.

Vulnerable communities inhabiting the Mahakam Delta region are the people who depend for their main livelihood on the Delta's natural resources. However, due to environmental damage and climate change around the Mahakam Delta, resulting in the degradation of their main livelihoods, where the fishing communities depend on alternative livelihoods to support their lives. Women and Household Heads of Fisheries is also a part of the vulnerable groups in society. The number of vulnerable people in the Mahakam Delta is 75.806 people or 54.7% of the total population of 138.546 people.

Most of the people in Mahakam Delta are migrants who have inhabited the area since the 1940s until now, which is dominated by ethnic Bugis.
With the increasing population directly giving logical consequences for the utilization of the area as a place of their livelihood. The surge in population growth began in 1997 when the monetary crisis in Indonesia occurred. The migrants as new residents, with big capital opening shrimp farms with the main commodity of tiger shrimp which is an export commodity, this resulted in the marginalization of local people who had long inhabited this

area. From this point, the target of project activities with the involvement of vulnerable groups that have long inhabited the Mahakam Delta region as a priority for program beneficiaries, so as to improve their socio-economic conditions supported by capacity building in sustainable livelihood management..

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Table 4. Matriks total vulnerable communities in 3 villages in The Mahakam Delta

Sub District	Villages	Population of vulnerable communities			Outside Population in The Mahakam Delta
		Male	Female	Total	
Anggana	Tani Baru	2,428	2,029	4,457	
	Muara Pantuan	3,021	2,457	5,478	
	Sepatin	2,582	2,136	5,478	
	Kutai Lama	2,221	1,972	4,183	
	Handil Terusan	3,552	2,991	6,543	
	Anggana	1,900	1,721	3,621	
	Others village				*19,323*
Muara Badak	Saliki	3.126	2.205	5.331	
	Salo Palai	1.103	974	2.077	
	Muara Badak Ulu	2.569	2.437	5.006	
	Others village				*35,653*
Muara Jawa	Muara Kembang	2,063	1,814	3,877	
	Muara Jawa Tengah	2,815	2,509	5,324	
	Muara Jawa Ulu	7,746	6,625	14,371	
	Muara Jawa Pesisir	5,718	5,102	10,820	
	Others village				*7,764*
TOTAL	**13 villages**	39,012	36,794	**75,806**	**62,740**
	%	52%	48%	**54.7%**	**45.3%**

To avoid these vulnerable groups doing economic activities that add to the environmental damage, YML offers an environmentally friendly livelihood development model, through the management of ponds with silvofishery techniques and the development of mangrove products non-timber. The development of environmentally friendly livelihoods can not only suppress the negative impact of environmental damage and climate change but also provide additional capacity and economic added value that can be directly felt by these vulnerable groups.

The social and economic benefits of the community, where at present the income level of poor households per day averages at least US $ 2 (Rp. 27,000 / day), after program intervention through environmentally friendly ponds activities, management of non-timber mangrove products and capacity building of local communities, so that household income is predicted to increase by an average of at least US $ 3.5 / day (Rp. 47,250; / day).This is the result of the socio-economic impacts received by the beneficiary community. This program will also provide opportunity for local community to increase their income, which has been declining in the past several years. This indicates by the decrease in purchasing power of local community (*Table 5.*)

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Commented [CR6]: Please include information in more detail on the expected social and economic benefits (e.g. expected income increase per household, …) from the project activities as well as their equitable distribution.

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Table 5. Expenditure per capita andequitable income population in Kutai Kartanegara District (Statistic of Kutai Kartanegara District, 2016)

expenditure per capita (Rp) *(equivalent Rp. 12,500/$1)*	Percent Population	
	2015	2016
(1)	(2)	(3)
< 150.000	0,00	0,00
150.000–199.999	0,00	0,00
200.000–299.999	0,72	0,25
300.000–499.999	14,49	9,90
500.000–749.999	28,29	23,19
750.000–999.999	19,89	23,13
1.000.000–1.499.999	24,52	29,47
≥ 1.500.000	12,08	14,08

Equitable Income Population Kutai Kartanegara District According to World Bank Criteria, 2015-2016		
Description	Percent of Population	
	2015	2016
(1)	(2)	(3)
40 % low	22,11	22,93
40 % middle	38,98	40,15
20% High	38,92	36,92
Gini Ratio	0,29	0,27
Inequality Catagory	Low	Low

Access rights in the mangrove area were obtained from forest management unit of the Mahakam Delta (KPH) as an area management institution in the Mahakam Delta. The steps to coordinate the sustainable management of the area have been carried out intensely by the YML team by building an agreement on the management of environmentally friendly and sustainable areas. Every years together with the Parties, conduct monitoring and evaluation of program achievements that have been or are being carried out by every actor working in the Mahakam Delta. .

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Commented [CR7]: Please clarify if there are issues around user and access rights to the mangrove area, fish ponds and other natural products

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

To encourage the sustainability of mangrove forests and improve the impacts of climate change in the Mahakam Delta, this program provides 3 components and sets out 5 outcomes. The explanation of the cost effective of each component and outcome against the cost of program implementation are as follows:

Table 6.a. Funding to outcome and component

NO.	COMPONENT	OUTCOME	Amount (US $)
1.	Restoration of mangrove ecosystems from the impacts of climate change as a sources to support economics development	1.1. Formed communities and local governments awareness in the conservation natural resources	216,433.40
		1.2. Strengthened awareness and ownership of local communities and groups of students related to conservation of mangrove ecosystem as an effort to overcome the impact of climate change	44,899.00
2.	Strengthening The institutionalization of policy and sustainability of mangrove ecosystem Conservation	2.1. Encouraging the institutional of policy in the conservation mangrove ecosystems	62,147.10
3.	Promoting and to develop of alternative economics	3.1. Enhance the capacity of local communities to adapt with climate	37,655.10

	development for local community	change impact in mangrove ecosystem;	
		3.2. Increased local community income by means the promotion of sustainable alternative economics development.	145,628.40

The activity steps that are created and contained in 3 components have been designed based on the effectiveness of program implementation, target groups of beneficiaries, namely vulnerable groups, aspects of social environmental sustainability and the level of vulnerability of the region, thus ensuring the sustainability of the program after the project ends and program replication as a learning process that can improved in other areas.

Commented [CR8]: Please provide clarification how the selected measures are effective in addressing climate related risks and vulnerabilities.

Components 1: Restoration of mangrove ecosystems from the impacts of climate change as a sources to support economics development: US $ 261,332.40;

By calculating the cost effectiveness of the mangrove rehabilitation program, 100 hectares of degraded land will be recovered covering critical land and coastal buffer zone and 36 hectares in productive fish ponds with 628,800 mangrove planting during the 2 year period. Cost of rehabilitation activities as a whole reach US $ 150,912 or US $ 0.24 per plant, for supporting activities such as raised awareness, increased knowledge among students and disseminating learning and awareness of US $ 110,420.40;

This activity can have an impact directly or indirectly. The immediate impact is the increased knowledge of the community and the younger generation on the ecological benefits of life, capable of effective rehabilitation based on medium-term priority scale. While the indirect benefit is the occurrence of the recovery process of mangrove ecological area as the primary ecosystem in the Mahakam Delta region which plays an important role in the ecological system of the area that can protect the sustainability of local livelihoods within the region.

Departing from the experience and learning of the YML team that has conducted reforestation activities in the Mahakam Delta in the last 5 years, the successful implementation of reforestation is inseparable from the adjustment of reforestation activities with the condition of natural resources, implementing resources, mechanisms for implementing activities and aspects of monitoring and evaluation program.
Natural resources are how planting activities must consider the type of soil, mangrove species to be planted are local species, reforestation strategies by considering priority scale based on the vulnerability of the area and the benefits of the plant's ecological function.
For human resources, how can the capacity / target group be improved, so that they know and understand the proper reforestation process and also the importance of these activities for the sustainability of their livelihoods, so that morally they will maintain the sustainability of reforestation from natural and human disturbances.
In carrying out the activities, the financing factor is very important, so fundraising by the YML team is an important priority in running the program, one of which is through partnerships and designing these activities effectively.
Monitoring and evaluation activities are key in carrying out mentoring and assessment of project success, several reforestation strategies have been implemented with suitable mangrove species planted, the ability of the species as sediment traps without jeopardizing the level of life of the mangrove itself, and periodically monitoring mangrove growth rates by using monitoring tools there is.

Commented [CR9]: Many mangrove restoration attempts have been ineffective, with planted seedlings suffering high mortality rates due to bad choice of species, or inadequate physical conditions and sediment supply. Please provide further details on the feasibility and potential success rate of mangrove restoration in the area (and previous success rate of YML in restoring mangroves) and how to balance sediment provision for improved restoration results as the area has excess sediment accretion which most likely can cause die-off if mangroves are smothered.

Meantime, when compared to the same method performed by sub national costs will be incurred of US $ 0.28 and when compared with the same activities done by the National expenses incurred for a mangrove tree of US $ 0.36. The exposure can be seen that the financing with the pattern proposed by YML more efficient than other similar programs.
The Improvement of mangrove area will give positive impact to climate change and livelihood for 22,806 households (75,806 people) spread in 3 districts specifically: “Anggana, Muara Badak and Muara Jawa” and especially in 3 assisted villages program.

Components 2: Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation: US $ 62,147.10;

To justify the sustainability of environmental management activities and the livelihoods of local communities from the impacts of climate change, government regulatory and policy elements are urgently needed so that socio-cultural, economic and ecological synergies can be developed that can improve local adaptation to climate change.

To encourage the institutionalization of policies in the preservation of mangrove ecosystems, FGD activities are conducted in the villages, districts and provinces, as well as two workshops conducted after internal and external monitoring and evaluation from mid-program and at the end of program implementation. FGD results in villages, workshops and monitoring of the ecosystem condition of mangroves will be the material to formulate a draft perdes related to mangrove preservation. This component will the result in 3 “Draft Perdes” (village regulation) and 1 Policy Brief with the low-cost usage compared to the government US$ 24,000 for academic script.

Components 3: Promoting and to develop an alternative economics development for local community: US $ 183,283.50.

Activities in this component are local community capacity building activities to adapt from the impacts of climate change within the mangrove ecosystem, increasing the knowledge and skills of 201 people in applying and developing fish ponds with silvofishery model in their aquaculture, and 90 women genders (6 CBOs of women) will increase their knowledge and skills in the management of non-timber mangrove products as an alternative family income.

The silvofishery activities, the cost per production cycle is US $ 552.94 / ha, more efficient than conventional aquaculture cost per cycle in the Delta of US $ 560 - 600 / ha. The output resulting from Silvofisery program is the establishment of 9 plots of 36 hectares silvofishery pond demonstration involving directly 18 communities that have been technically trained in the right aquaculture and practice it in a demonstration plot for 2 cycles with a mentoring pattern. The recoverability of land and water quality improvement efforts are expected within the next 2 to 3 years fish productivity level can increase to 50% so that this model through socio-cultural and economic relations can be transmitted to other communities within the Mahakam Delta area as a sustainable aquaculture model. Similarly for women, improving skills in managing non-timber mangroves sustainably into mangrove products as alternative food and food by 6 groups of women in 3 locations is expected to be a promotional material for developing alternative livelihoods for other women in the region.

The success and learning of the sustainable livelihood promotions in the future will more involved the local communities both as product marketing agents and as production personnel, so it will encourage the improvement for the vulnerable groups. To ensure the sustainability of the above component results and mentoring program there are 2 strategies to be undertaken:

1. To Maximize role of the community organizers who come from the local community. The involvement of local CO through a potential actor mapping process including ensuring concern for the mangrove sustainability in the delta region.

2. To Facilitating village rules on the sustainable management of mangrove forests. the process of drafting these rules will consult with the "KPH" (Forest Management Unit) as one of the stakeholders in the delta. The involvement of the KPH is expected to provide an insight into the village rules, so that the drafted rules do not conflict with government rules on the management of the Mahakam delta.

Meantime, the dissemination of learning includes one of which disseminates village rules that have been drawn up to the village governments and communities in other villages located in the delta region, so that it is expected that they are can participate in maintaining of the mangrove sustainability in the Mahakam delta. Dissemination of Lessons learned to other stakeholders are conducted through village meetings such as FGD, socialization and utilization of other community organization meetings in the village to disseminate of lessons learned and the success programs. The district and provincial levels, Dissemination of learning program is done through workshops and consultation meetings with the government, both of which are facilitated directly by the executing program (YML) or utilize other the meeting / workshop, who also have an interest in the delta region such as governments, GGGI, DDPI and the University.

The activities steps in these 3 components are adaptation steps that have considered the sustainability of the program in terms of environmental, social and economic improvement, up to 2 years after the end of the project. Several of the activities that have been carried out by other stakeholders that have been implemented in Delta Mahakam in the past 10 years are only temporary (financing based on activity cycles only) without any design post-program

Monitoring, evaluation and mentoring are key aspects for program sustainability, three things that YML will implement as a local institution after the end of the project, which will be implemented for 2 years.
External level monitoring and evaluation is also carried out annually and quarterly program mentoring for two years after the end of the project with other stakeholders in the Mahakam Delta region.

Funding sustainability for silvofishery activities is carried out by applying the revolving funds mechanism from previous silvofishery funding activities.

Table 6.b. Mentoring

NO.	Activity	Waktu	Internal	Eksternal
1	Mentoring per bulan	Dilakukan selama 6 bulan paska berakhirnya project	YML team	-
2	Monitoring and mentoring per triwulan	Dilakukan pada semester 2 sampai dengan semester 4 pasca berakhirnya project	YML team	-
3	Monev per semester	Dilkukan setiap semester selama 2 tahun	YML team	-
3	Monev per tahun	Dilakukan per tahun selama 2 tahun pasca berakhirnya project	YML team	YML team bersama stakeholder lainnya

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Commented [CR10]: Please provide other information on how the chosen adaptation options in the 3 components compare to other adaptation measures that can be considered in the area.

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Commented [CR11]: Please provide further information on how the project results will be maintained in the future after the project has ended (e.g. maintenance of mangrove monitoring, costs of implementation and surveillance of the mangrove policy, funding for scaling up the silvo-fishery activities)

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

1. National Development Strategy

The national development strategy is the formulation of a synergistic and efficient strategy, with the purpose of increased the welfare of all Indonesian people whose implementation is the responsibility between the government and all components of society.

- **Nationally Determined Contribution, (Indonesia First NDC, 2016)**

  In 2010 the Government of Indonesia has pledged to reduce emissions by 26% (41% with international support) on business scenarios. Then, until the year 2020 has been set the national development priorities contained in "Nawa Cita" (9 priorities agenda) the national development where the two agendas of 9 agenda is expected to be contributed from this the program include building on the outskirts of the strengthening of the village and realize economic independence by moving strategic economic sectors.

- **Presidential Decree No. 2 of 2015**

  Concerning on the National Medium-Term Development Plan (RPJMN) 2015-2019 in section 1.2.2. The Climate Change and sub sections 1.2.2.1.; The problems of and RPJMN strategic issues including greenhouse gas reductions (mitigation of climate change) emissions and increase community resilience (adaptation), which aims to developing the resilience of coastal villages on the climate change adaptation.

- **The National Action Plan for the Climate Change adaptation (RAN-API, 2014).**

  The Government of Indonesia to formulated The national of document policy to resolve the effects of climate change, such as the Indonesia Adaptation Strategy (Bappenas, 2011), the National Action Plan for Climate Change Adaptation Indonesia (DNPI, 2011), the Roadmap of Indonesia Climate Change Sector (BAPPENAS, 2010), the National Action plan for Mitigation and the Climate Change adaptation (Ministry of Environment, 2007), and sectoral adaptation plans prepared by Line Ministries / Government Agencies. For harmonization and operationalization of the policy document, has been formulated in the strategic objectives of RAN-API directed to (a) build economic resilience; (b) establishing survival (social) on the impacts of climate change; (c) maintaining the sustainability of environmental services (ecosystem resilience); and (d) strengthen the resilience in special areas such as urban areas, as well as coastal and small islands. In addition, to strengthening the above objectives, a support system is needed that is reflected in knowledge management, planning and budgeting, capacity building, and monitoring and evaluation.

  The proposed program has attempted to implement a strategy that is consistent with the national development strategy described above, such as the program to be performed on component 1, where the restoration of the mangrove ecosystem area, this is in line with the objectives of the RAN-API Strategy at point (c) maintaining the sustainability of environmental services (ecosystem resilience), similarly in component 3, activities to promote and develop alternative income a sources for local communities with expected outputs are to increase local knowledge and skills to adapt to climate change in mangrove ecosystems and increase local people's income by promoting the sustainable alternative livelihoods.

- **The Law RI Number 27 of 2007**

  Concerning on the Management of Coastal Areas and Small Islands Article 4; Management of Coastal Areas and Small Islands which are implemented with the aim of:

  a. To protect, conserve, rehabilitate, utilize, and enrich the Coastal Zone and Small Islands Resources and their ecological system in a sustainable manner;
  b. To creating harmony and synergy between the Government and the Local Government in the management of Coastal Resources and Small Islands;
  c. To strengthen the participation of communities and government agencies and encourage community initiatives in the management of Coastal and Small Islands Resources in order to achieve equity, balance and sustainability;
  d. To improve the social, economic, and cultural values of the Community through the participation of the Community in the utilization of Coastal Resources and Small Islands.

2. Sub-National Development Strategy

The Sub-National level policy is a form of support from policy at the national level, through several Sub-National Development Strategy policies, among others are :

- **The provincial government East Kalimantan Governor Regulation No. 22 of 2011**

  Concerning the East Kalimantan Green Development Implementation Guidelines; as a forerunner to the formation of Green Growth Compact (GGC) which was further declared and signed on May 28, 2016. The provincial government along with other stakeholders in East Kalimantan have initiated various initiatives, followed by the signing of multi actor agreement as an effort to accelerate the development of in East Kalimantan, as an effort to overcome various environmental problems, socio-cultural and economic.
  The seven program contained in GGC document including the management of the Mahakam delta area of ± 113,503 hectares are managed based on ecological principles for socio-economic interests of local communities, as part of the adaptation and community resilience efforts of the climate change impacts.

- **Medium Term Development Plan (RPJMD) 2013-2018 of East Kalimantan province**

  In Chapter VI Points C, concerning the strategic region based on the importance of function and carrying capacity of the environment; East Kalimantan Provincial Government together with District / Municipal Government, Community, Higher Education and private sector, realize that there has been a global warming that caused global climate change. In this regard, East Kalimantan Province considers it necessary to take the following actions:

  1. Improving the quality of life of the people of East Kalimantan as a whole and balanced both economically, socially, culturally, and the quality of its environment.
  2. Reduce the threat of ecological disasters such as floods, landslides, droughts, forest fires, and land throughout the province of East Kalimantan.
  3. Reduce pollution and destruction of quality of terrestrial, aquatic, and air ecosystems in East Kalimantan Province.
  4. Increase the knowledge and awareness raising of all parties, both government, private, and the people of East Kalimantan Province, to the interests of the conservation of renewable natural resources and the wise use of natural resources is not renewed.

Priority areas in efforts to improve the function of protected areas in East Kalimantan Province are:

a. Lake “Semayang” area, Lake “Jempang”, Lake “Maninjau”, Lake “Melintang”, Lake “Siran”, and surrounding areas.
b. Mahakam Delta area
c. Coastal and Marine Areas of “Derawan” Islands in “Berau” District

- **Provincial Regulation of East Kalimantan No.1 of 2016**

Concerning on Spatial Planning (RTRW) East Kalimantan 2016 - 2036; the Chapter II Article 5 paragraph (4) on the Policy and Strategy of Spatial Planning of the Province, namely: three Strategy of the realization of synergic space with green economic growth, among others:

a. Emission reduction and carbon footprint of the productive economy sector in the realization of space utilization;
b. Strengthen the principle of cooperation in forest conservation and sustainable land management and community welfare in protected areas; and
c. The institutional strengthening and the capacity building of human resources through cooperation and partnerships with various stakeholders in the implementation of green economics.

Based on the exposure of several sustainability development strategies, both national and sub-national, It appears that the proposed program through the 3 components offered as the program design is very consistent and contributes to the national development strategy and of the proposed program to be funded adaptation is expected to support the accelerated development of a strategic area of the Mahakam Delta.into a green economics area with zoning of natural resource protection and sustainable economic utilization zonation.

Fig. 9. The Strategic Areas of East Kalimantan Province

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

The three main activity components contained in this proposal have been referring to conformity of national technical standards. the components consist of the restoration activities which efforts to restore mangrove ecosystem that have been degraded by planting

mangrove; Furthermore, to support the sustainability of the restoration will be encouraged institutionalization of policies at the local level to ensure the preservation of ecosystems in the Mahakam delta; For the 3rd component is the effort to maintain and creating the livelihoods of vulnerable communities in the Mahakam Delta through alternative sustainable economic activities

Presidential Decree No. 121 of 2012

The regulation establishes technical standards for coastal and small island of rehabilitation activities, which have been adopted by YML in the proposal concepts implementation of restoration activities as the basis for the design of projects in a structured and planned manner based on existing guidelines contained in Chapter III, chapters 6 to 10, consisting of:

1. Planning
   - To identify the cause of the damage, by doing collecting data and analyze it;
   - To Identify the extent of damage through water quality data collection, the area damaged areas, the rate of damage, extensive land cover, vegetation and species diversity;
   - Preparation of rehabilitation plans by identifying the status; conformity with the coastal zone and small islands, socio-economic conditions; objectives, outputs and benefits; rehabilitation techniques; duration of implementation; type and volume of activities; implementing and responsible for rehabilitation; financing.

2. The implementation, done in away:
   - Enrichment of biological resources, namely: planting, restocking and production of artificial habitat;
   - Habitat improvement, namely: the application of appropriate building construction ecological principles, the use / technical application of habitat improvement

3. Protection of species to grow and develop naturally
   - The provision and protection of spawning areas (spawning ground), enlargement area (nursery grounds), as well as the area foraging (feeding grounds);
   - Counseling and awareness
   - Supervision

Regulation of The Minister of Marine and Fisheries No.16 of 2008

Regarding the principle of planning management of coastal areas and small islands, Chapter I of Article 3, namely: a. Is an integral and inseparable part of the system of the regional development planning; b. Integrating activities between governments, inter-sector, the business community, between terrestrial ecosystems with marine ecosystems, and between science and the management principles; c. conducted in accordance with the Bio geophysical conditions and potential areas owned by each region, as well as the dynamics of regional and national socio-cultural developments. involved the participation of the local communities and other stakeholders. This is in line with the concept developed in this proposal to implement the restoration activities and vulnerable community's alternative livelihood development in the Mahakam Delta.

Regilation of The Minister of Home Affairs No. 61 of 2010

Regarding the establishment of guidelines for the organization of the working procedures of the protected forest management unit and the unit of production forest management in the region, and what is meant in this regulation are:

1. Forest Management is an activity that includes forest management and forest management plans, forest use, forest area use, forest rehabilitation and reclamation and forest protection and nature conservation.

Commented [CR12]: Please identify additional national technical standards and regulations, and state compliance in a logical manner, if there's a need for permitting and who would be the clearing authority.

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2. Forest utilization is an activity to utilize forest areas, utilize environmental services, utilize timber and non-timber forest products and collect wood and non-timber forest products optimally and fairly for the welfare of the community while maintaining their sustainability;

3. Production Forest Management Unit Organization, hereinafter referred to as KPHP, is a production forest management organization whose territory consists mostly of production forest areas, managed by the Regional Government,

4. Forest management is the design activity of a forest management unit, including the activities of grouping forest resources according to the type of ecosystem and the potential contained therein with the aim of obtaining maximum benefits for the community in a sustainable manner,

5. Forest and land rehabilitation is an effort to restore, maintain and improve forest and land functions so that the carrying capacity, productivity and role in supporting the life support system are maintained,

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Regulation of The Minister of Environment and Forestry No.P.33 of 2016

The guidelines for the preparation of climate change adaptation measures, Article 4 paragraph (e) on measures to integrate climate change adaptation measures, development plans and programs. This serves as a basic guideline for carrying out the activities contained in component 2, namely to strengthen the institutionalization (internalization) of policy and sustainability of mangrove ecosystem rehabilitation in the Mahakam Delta region, this will be strengthened by advocacy / local and the provincial government policies. regulations. In the future, the policy will be the legal protective in the preparation of development program plans at the village, district and provincial levels. With this effort it will encourage synergy between all parties, both government, non-government, private actors and the community in maintaining the ecosystem of the Mahakam Delta region.

Regulation of The Minister of Environment No.19 of 2012

About climate village, Appendix 1 point (C) which contains about approach, principle and strategy. The program contained in component 3, is to build the resilience of vulnerable communities to be able to adapt to climate change that occurred in the delta area through the implementation of promotional activities and economics, development of alternative local communities proportionally based on the principles of environmental sustainability, in addition, in line with the guidelines in this ministerial regulation, the program will be implemented in the community, to create sustainable management principles and implementation of strategies in achieving the targets of activities, such as establishing partnerships with relevant institutions, local government, businesses institutions and non-government institutions; and encourage leadership at the community level to maintain the sustainability of climate change adaptation and mitigation activities in the Mahakam Delta.

Republic of Indonesia Law No. 23 of 1997
Concerning Environmental Management

Article 1 :

1. The environment is a unity of space with all objects, power, circumstances, and living things, including human beings and their behavior, which affect the survival of the lives and welfare of humans and other living things;

2. Environmental management is an integrated effort to preserve the environmental function which includes policies for structuring, utilizing, developing, maintaining, restoring, controlling, and controlling the environment;

3. Sustainable development that is environmentally sound is a conscious and planned effort, which integrates the environment, including resources, into the development process to ensure the ability, welfare and quality of life of present and future generations;

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4. Ecosystems are the elements of the environment which are whole unity and influence each other in forming environmental balance, stability and productivity;

5. Preservation of environmental functions is a series of efforts to maintain the continuity of the carrying capacity and capacity of the environment;

6. The carrying capacity of the environment is the ability of the environment to support the lives of humans and other living beings;

7. Preservation of environmental carrying capacity is a series of efforts to protect the ability of the environment against the pressure of change and / or negative impacts caused by an activity, so that it is still able to support the lives of humans and other living beings;

8. Environmental capacity is the ability of the environment to absorb substances, energy, and / or other components that enter or are included in it;

9. Preservation of environmental capacity is a series of efforts to protect the ability of the environment to absorb substances, energy, and / or other components that are discharged into it;

10. Resources are elements of the environment that consists of human resources, natural resources, both biological and non-biological, and artificial resources.

Article 5 :

1. Every person has the same rights to a good and healthy environment;

2. Every person has the right to environmental information related to the role in environmental management;

3. Every person has the right to play a role in the framework of environmental management in accordance with the applicable laws and regulations.

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

Propose this project, no others funding sources accessed in implementing programme.
The current conditions, there is no duplication of activities / programs with financial support from the other parties, but the future implementer (YML) will establish cooperation and synergy with various stakeholders in the Mahakam Delta region such as Dipterocarfa Research, KPH, companies, DDPI, GGC, GGGI and the Provincial Government of East Kalimantan to improve the success of the program, to avoid overlapping of programs and shared responsibility (role) in maintaining sustainability the environment and reduce of climate change impact in the Mahakam delta region.

All proposed activities are based on the relevance of real conditions in this region, there are several activities that are also carried out by other actors in various regions. However, this can be used as a program synergy, related to technical implementation and learning outcomes (see in table 6.c).

Table 6.c. identification of program relevance

Activity	overlapping	Remarks
Component 1		
1. Socialization of coastal and mangrove Ecosystem	Not	Implemented also by other actors in different locations
2. Training of seeds collection, nursery and mangrove planting	Not	not carried out by other actors
3. Training of reforestation strategic	Not	not carried out by other actors

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4. Environment campaign in the schools (elementary and junior high school students);	Not	not carried out by other actors
5. Mangrove reforestation activities	Not	Implemented also by other actors in different locations
6. Survey of seeds stocks by internal team	Not	not carried out by other actors
7. Growth Monitoring	Not	not carried out by other actors
8. Carbon Stock Establishment	Not	Implemented also by other actors in different locations
9. Assessing impacts and vulnerability in Mahakam Delta	Not	not carried out by other actors
10. Guidebook writing and duplcation	Not	not carried out by other actors
11. Writing the policy brief documents and publication	Not	not carried out by other actors
Component 2		
1. FGDs in villages	Not	Implemented also by other actors in different locations
2. FGD in district	Not	not carried out by other actors
3. FGDs in province for police brief Recommendation	Not	not carried out by other actors
4. Monitoring and evaluation program	Not	not carried out by other actors
5. Workshop in province	Not	not carried out by other actors
Component 3		
1. Socialization	Not	Implemented also by other actors in different locations
2. Training of silvofishery pond	Not	not carried out by other actors
3. Demplots silvofishery and mentoring	Not	Implemented also by other actors in different locations
4. Training of non-timber mangrove product	Not	not carried out by other actors
5. Procurement of non-timber mangrove products processing equipment and mentoring	Not	not carried out by other actors

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The proposed project is described, that the mangrove ecosystem in the Mahakam Delta has a very important function in biotic and abiotic that can be used as learning in the management of a coastal area.

- Biotically the mangrove ecosystem has strongly linked with the Mahakam watershed system and the ecological mangrove ability to minimize / reduce the contamination- in the watershed system; In addition to the water filtration function of roots system, in this biotic ecosystem also serves as a nursery ground (the breeding) for organisms in coastal and other functions.
- Abiotically mangrove has a very vital function, other than as the retention rate of coastal abrasion, mangrove ecosystem is also a protection area and other organisms as well as the livelihoods of local communities from the impact of to storms and sea waves to the mainland. Another impact is the ability to reduce the rate of sea water intrusion into the mainland.

- Experience in the implementation of mangrove rehabilitation that has been carried out, will make learning important, how a reforestation program is designed based on the topology of the area to be reforestated, which is based on environmental, social and economic aspects that are integrated in reforestation strategy.

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Mangroves can also provide other economic alternative through the processing of mangrove product non-timber as part of the alternative food security for coastal communities.
The importance of mangrove sustainabillity , as described above, restoration of mangrove very important to the sustainability of local communities' livelihoods.

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

Given the importance of sustainability of the mangrove ecosystem in the Mahakam delta as described in section F, then one of important component in sustainability is "The Learning and Knowledge Management". It is said to be important because if the stakeholders do not have the same understanding and vision in the mangrove ecosystem management, the program goals and sustainability of environmental are difficult to achieve. In addition, in the learning and knowledge management is also needed a right dissemination strategy.

The management of knowledge and learning that will be done during the program are:

1. Every 6 months, the program will prepared a "Partner Review Progress" report to be distributed to related parties such as village government, local government and donors;
2. Learning outcomes and knowledge gained during 1 year of program implementation will be presented in the form of leaflet (self financing YML) which will be distributed to related parties as media of environmental awareness campaign.
3. During the duration of the program will be socialization, FGD and a series of capacity building and workshops involving local community program beneficiaries, the village government, district government, provincial government, universities, the company (Pertamina Hulu Mahakam/PHM), Climate Change Council and parties others who have signed the "Green Agreement" in East Kalimantan. In each of these activities YML will distribute the experience and learning of the program as a means of learning and sharing campaigns related to environmental monitoring management and adaptation to climate change;
4. Learning publications will also be conducted through documentary films, planning manuals and mangrove restoration strategies, silfoveshery techniques guides, non-timber mangrove product development guides, and a guide to the calculation of permanent carbon sample plots. The Media generated in the program will also be disseminated to all parties which in related with environmental preservation Mahakam delta region;
5. The Utilizing forums or meetings both at village, district and provincial and working with other parties such as GGGI, DDPI, GGC and meetings facilitated by the local government to disseminate the knowledge and learning program, which has been carried out since 2016 to date;
6. In collaboration with experts and campus research teams who are members the Institute of community services, Mulawarman University (LPM UNMUL) in several activities, with the involvement of the campus is expected they can also participate disseminate knowledge, learning and success of the program at the campus level, YML has collaborated in several community empowerment activities and research activities in the Mahakam Delta since 2013 to date;
7. The knowledge management process at the program development stage has been carried out by building networks of parties, informal or formal meetings through FGDs, workshops, etc. in addition to YML's institutional technical capabilities.

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The program also involves technical institutions in their fields and some forms of learning can also be distributed in the form of leaflets, brochures, guidebooks and films.

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

To support the achievement of the program's success, the process of consultation be an important component to do. Strategy consultation will be carried out at all stages of the program cycle starting from the stages of preparation, implementation, monitoring and evaluation will be done in stages both at village, district and provincial levels. The consultation process will be to consider the interest and involvement of women and vulnerable groups, who had been the recipient of the leading group of climate change impacts.

The consultation process before program implementation has been carried out with several key stakeholders. At the Village Level a joint consultation was held with Muara Pantuan Village Chief, Sepatin Village Head, 1 women's group, 1 group of fish farmers, several local community leaders in the Mahakam Delta. At the district level together with Marine and Fisheries Department (DKP) and Regional development and planning agency (BAPPEDA), while at the provincial level consultations with Environment Department (DLH), Forest Management Unit (KPH) Delta Mahakam and Sub-National Board of Climate Change (DDPI) were conducted.

The consultation process will take place at every stage of the program and level are as follows:

Village level

The consultations this level, carried out since the program preparation phase, implementation, monitoring and evaluation. On the stages of preparation of the parties involved is a village government, community leaders, the district and the local communities especially vulnerable groups and women who live their lives depend on the Mahakam delta. The activities that will be performed on the stages of preparation are: mapping of target groups (gender roles), mapping the locations of restoration, mapping local facilitators, preparation of territorial baseline (social, economic and environmental) and consulting program framework. At each of these activities will be ensured the involvement of women and vulnerable groups in the assisted villages. the stage of implementation at the village level will also be carried out analysis of the value chain, at the stage results of the monitoring and evaluation to be carried consulted with stakeholders such as village government, and the target group, in order to be learning together in improving the achievement of the success program's.

District level

The Consultations were carried out in the stage of preparation of the parties involved such as: "Bappeda", DLH, DKP (extension), Research and Development area, the Department of Land and arrangement of space. The involvement of all stakeholders was also conducted on the process of FGD districts to expand the parties that will be involved as the private sector, other programs / NGO, Department of Tourism, Department of Industry, Trade and cooperatives as well as representatives of vulnerable groups of 3 assisted villages.

Provincial level

The consultation process started in the preparation stages, workshops, up to monitoring and evaluation involving relevant stakeholders like KPH, DDPI, GGGI, DKP Province, DLH, and Community Development Institute UNMUL. the consultation process can also take advantage of the meetings held by the local government and other programs that have an interest in the Mahakam delta. this process of consulting the provincial level will also

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promote the interests of women and vulnerable groups and involve representatives of vulnerable groups who are in the Mahakam Delta.

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

- To strengthen the resilience of communities in Delta Mahakam as an ecological system of the intervention program through three main components namely restoration, institutionalization of policies and promotion of alternative livelihood would be helpful to realize climate change adaptation action plans in the Mahakam Delta ecosystem. Related detailed explanation of these interventions can be seen in the following matrix:

Component 1. Restoration of mangrove ecosystems from the impacts of climate change as a sources to support development economics		
OC	**Baseline**	**Additional (with AF)**
1.1.	Poor understanding of the local community about the benefits of mangrove ecosystems for their livelihood sustainability	• To conducting awareness and socialization activities on the mangrove ecosystems function for life, implemented in schools in the Mahakam Delta, local communities and village government.
1.2.	Degradation of mangrove ecosystem in the Mahakam Delta caused by climatic and non-climatic factors, has resulted in a decline in mangrove resources services, social services and economic services in the region	• The rehabilitation activities in the Mahakam Delta region with priority on critical lands and partly in fish farms, to stabilize the sustainability of mangrove ecosystems as a provider of community environmental, social and economic services; • Monitoring carbon and the local community will formulate strategies for the rehabilitation.
Components 2: Strengthening the Institutionalization of policy and sustainability of mangrove ecosystem conservation		
OC	**Baseline**	**Additional (with AF)**
2.1.	The degradation of the mangrove ecosystem at this time, one of which is the absence of policies at the village level that regulate the management of community livelihoods while maintaining the rules of the conservation of biological resources;	• To conduct FGDs at the village level with local actors, the village government and relevant stakeholders, so that it can a Draft Recommendation for Village Regulation to be result in each target village, and in the future can be replicated to other villages • Facilitated the establishment of environmental groups for climate change adaptation that play an important role in safeguarding the implementation of "perdes" and pioneer of environmental sustainability.
	The Synergistic of very low area management of the government and non-governmental actors in implemented of regional recovery activities;	• To conduct campaigns and policy advocacy through coordination meetings / consultation, Focus Group Discussions, workshops, and attend meetings that have been facilitated by other stakeholders at

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		both the district and provincial levels; • Facilitate of a "policy brief" as the Policy Recommendation document to build the synergy of each actor in carrying out activities within the Mahakam Delta region.
Components 3: Promoting and to develop an alternative for development economics local community		
OC	**Baseline**	**Additional (with AF)**
3.1.	The vulnerability livelihoods of local communities which led to a decrease in family income;	• To improving the community aquaculture system through silvofishery demplot in 3 locations of activities that can restore the carrying capacity of fish ponds so as to increase aquaculture productivity by collaborating between mangrove vegetation and aquaculture in the production cycle, also develop alternative livelihoods of vulnerable communities with non-timber mangrove product in 3 locations activities;
3.2.	The low level of community knowledge related to sustainable livelihood management	• To training vulnerable community in the managing sustainable livelihoods while supporting the conservation biological resources of the mangrove forests; • Mentoring of scheduled to involve the local community who have been trained; • To Facilitated instructional media through the provision of 4 guidebooks on silvofishery, non-timber mangrove products, reforestation strategies and Plot Sample Permanent carbon accounting for dissemination to the community and other related actors.

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The three components of the program are in accordance with the AF results framework

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

1. Replication village policies

The Replication policies between villages. To ensure the sustainability of mangrove ecosystems in the delta region requires awareness of all stakeholders to be actively involved in maintaining the region. Although during the program YML only encouraged the birth of a draft regulation villages in three villages assisted but given the importance of maintaining continuity so that the middle of the year the need to raise awareness and replication to the village government and other villages who are geographically located area of the delta to get together to have a policy of village related to the conservation of the mangrove areas while considering the interests of vulnerable groups.

2. Establishment of Environmental Observer Groups

In the process of program assistance, will be facilitated the establishment of environmental groups. The group is expected to be a pioneer in maintaining

environmental sustainability and climate change adaptation at the village level. In addition, this group will also oversee the village regulations that have been prepared through the process of program assistance. The environmental members group are derived from the elements: village government, community leaders, marginal groups who have been relying their livelihoods on coastal areas by taking into account the proportion of women and men.

The existence of this group is also expected to be a partner of the village government, especially in maintaining the sustainability of mangroves and adaptation to climate change.

3. Policy Advocacy at the provincial / district

Level policy advocacy encourage districts / provinces. In the design of this program in the second year will facilitate their "breaf Policy" Sustainability related Mangrove Zone and the impact of climate change in the Mahakam Delta. Documents are expected to encourage the birth of regional policies to maintain the sustainability of mangrove areas, other than that through a process of consultations, meetings or workshops at the district level and provincial These efforts will continue to be advocated as part of a "scaling up" of the broader program learning success. This is certainly in line also with the "Green Deal" that has been agreed by all parties in East Kalimantan.

In addition to policy advocacy, through a process of consultation and coordination that is routinely carried out by local authorities in this case DLH, KPH, DKP and BAPPEDA future will be driven also advocates budgeting on the institution-related, in order to enter the planning ("*RKA*") and Budget programme Local Government Agency (OPD) activities which contributes to the conservation of the delta region by taking the learning success of the programs supported by this fund adaptation.

4. The Sustainable Promoting and to develop an alternative economics

Silvofishery model development is done in the design of this program certainly will synergize the ecological function of mangroves to aquaculture practices, in which there are the planting and maintenance. With the learning expectations will be replicated by the farmer in the Mahakam Delta region and gradually to give a positive impact for the conservation of mangrove areas and reduce the impact of climate change.

Meanwhile, through the development of mangrove non-wood products, have also agreed jointly target groups to put aside their income every year from the remaining results of business by 1% until 2%, which would be contributed to the conservation of the environment, including the mangrove areas.

5. Mentoring and independent monitoring

As a form of moral responsibility to sustain the success obtained during the program, program implementer will conduct post-program monitoring. These activities will be regularly do of per 3 months with the involvement of local communities and officials. The involvement of local facilitators from the community is also a strategy to ensure the mentoring process is still running at the community level. Through this strategy is expected to maintain the success of the restoration has been done.

To ensure the sustainability of the program that can be replicated and scaled up after the end of the project, YML has developed M & E for a duration of 2 years. In addition YML with full support from DDPI has worked in building a green development agreement with the parties from 2017 to 2018 in Delta Mahakam which involves multi stakeholders from government, companies, NGOs and community leaders, which is the commitment of East Kalimantan province in reducing carbon emissions from 1,500 tons of CO2 eq in 2015, to be 1,000 tons of CO2 eq by 2030.

This green development cooperation agreement, can also be used as a tool to replicate other village programs by stakeholders in addition to being a program learning media. Furthermore, the sustainability process of M & E designed by YML, by optimizing the results of agreements that have been built, will involve directly KPHP institutions, dipterocarfa research, DDPI and the community for 2 years with joint financing within the framework of collaboration and sustainable management of the Delta Mahakam area in adapting to climate change..

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Commented [CR20]: Please provide more details on the arrangements through which project activities will be replicated and scaled up and what mechanisms will be formulated by the project and how these eventually will be supported by other means. (e.g. how will the village policies be implemented and replicated in other villages, how will the monitoring activities continue once the project funds have ended, etc.)

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

In terms of environmental impacts, this programme would clearly brings positive benefits for the recovery of ecological function of mangrove ecosystem in Mahakam Delta. Furthermore, it also supports biodiversity conservation by recovering natural habitat for wildlife and climate mitigation action by increasing carbon sequestration capacity in mangrove ecosystem. This programme also gives direct social impacts by providing alternative sustainable livelihoods for local communities and promotes gender equality by involving women in the programme. The risks that may occur is community resistance to the programme. This can be mitigated by seeking approval in the early phase of proposal development and programme preparation.

Checklist of environmental and social Principles		No further assessment required for Compliance	Potential impact and risks – further assessment and management required for compliance
1	Compliance with the Law		
2	Access and Equity		
3	Marginalized and Vulnerable Groups		
4	Human Rights		
5	Gender Equity and Women's Empowerment		
6	Core Labor Rights		
7	Indigenous Peoples		
8	Involuntary Resettlement		
9	Protection of Natural Habitats		
10	Conservation of Biological Diversity		
11	Climate Change		
12	Pollution Prevention and Resource Efficiency		
13	Public Health		
14	Physical and Cultural Heritage		
15	Lands and Soil Conservation		

Table 7. To Explanation about potential impact of environmental and social principles and identification of risk and handling steps can be seen in the following table:

Commented [CR21]: Please provide a more robust assessment and overview of potential risks of the project, such as land tenure, access rights to coastal resources, gender considerations, ecosystem services, use of potential pollutants (polybag, plastic packaging…) etc. When a risk is deemed not applicable, please provide a brief justification as to why.

No.	Environmental and social Principles	Potential Impact and Risks	Further assessment procedure and potential prevention and mitigation measures
1.	Compliance with the Law	Not Applicable	-
2.	Access and Equity	• Unbalanced access to utilization and access to	• To Provide access information to stakeholders in the Mahakam delta in the form of advocacy

		mangrove conservation in the Mahakam delta will be minimized through component 1 and component 2, such as : 1. Excessive logging of mangroves for fish FADs, resulting in decreased carrying capacity of mangroves as a provider of coastal environmental services. 2. Management of ponds that are not environmentally friendly and use of fish poisons, have a direct impact on reducing the carrying capacity of ponds.	media, as well as activities in providing community capacity building and assistance (component 1); • To facilitate of village rules related to the conservation and utilization of mangroves, Through FGD, M & E, and workshop activities (component 2) will open the same access for local communities in the sustainable use of SDA in Delta Mahakam; • Opening balanced access to sustainable development of silvofishery activities and developing alternative livelihoods through sustainable non-timber mangrove products (component 3).
3.	Marginal and Vulnerable Group	• The lack of participation at the level of marginal groups will increase vulnerability and poverty due to the effects of climate change. • The low level of human resources, especially women and other vulnerable groups, will hamper the development of food diversification.	• The Persuasive approach and discussion to vulnerable groups in the stages of project preparation; • To Assessment of vulnerable and marginalized groups in the delta region, and formulated in local level policies (component 2); • To Provide special assistance to the marginalized and vulnerable groups so that they are benefit from the programme being, (component 3).
4.	Human Right	Not Applicable	-
5.	Gender Equality and Women Empowerment	• The lack of gender equality at every stage of activities that have taken place in the Mahakam Delta • The lack of facilitation of Capacity building and women empowerment with of attention to low Human resources factors in the transformation of the sustainable natural resource management.	• To Conduct gender analysis previous to implementation of activities at the project preparation stage. • To Provide special the strengthening and assistance to improve women's roles and improve gender equality through the involvement of environmental management training (component 1, output 1.1.1. and 1.1.2.) and than development of alternative livelihood (component 3, output 3.1.2.).

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Deleted: To Development of food diversification by make use the mangrove fruit, in the future will be provide additional income for target communities / groups, especially women and other vulnerable groups

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		• The absence of the development of non-timber mangrove products that are productive as alternative livelihoods for women's groups will exclude these women's groups.	• To Facilitate mangrove promotion product and awaken partnerships with other parties such as KPH, and Tourism Department, to through FGDs and workshops at village, district and provincial level (Component 2, output 2.1.1.); • To Strengthening technical assistance for mangrove products of non-timber and mentoring (component 3, output 3.1.2. and 3.2.2.); • To monitoring and evaluation program regularly
6.	Core Labor Right	• In this project even though the community is not a freelance worker, but they are the beneficiaries who have the responsibility and contribute in the form of inkind, the risk aspects in the implementation of activities must or remain protected.	• safety first prioritized in every activity in the field • Ensuring that the community working in this project is at least equipped with health insurance
7.	Indigenous Peoples	Not Applicable	-
8.	Involuntary Resettlement	Not Applicable	-
9.	Protection of natural habitat	• The decline of mangrove resources as a provider of ecological services, will reduce the proliferation of aquatic biota including protected waters such as natural shrimp, “Pesut” (local dolphin), and primate animals such as "Bekantan" (long noses monkey) *nasalis larvatus.*	• To socialization and awareness activities on The mangrove ecological functions for existence of natural biota; • Planting mangroves as many as 600,000 trees, especially in critical areas, to integrate coastal green belts in the Mahakam Delta and 28,800 trees in the fishpond (component 1); • To monitoring and evaluation program regularly (component 2, output 2.1.1.); • Limited and sustainable utilization on the activities of non-timber mangrove products, does not exceed 30% of the potential of the fruit that is in the delta area (component 3, output 3.2.2.).
10.	Conservation of Biological Diversity	Not Applicable	-
11.	Climate Change	• • Reforestation activities will have a positive impact on the region for the future, as a natural protection for local communities and natural	• To socialization and training as well as planting by applying priority scale of planting in critical land in coastal areas. To assist local communities, other vulnerable

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		habitats • The less fishermen catch, the activity in component 1 is expected to increase the catch of traditional fishermen which will directly affect their income	groups and village government in the planning and implementation of reforestation appropriate strategies each year (component 1, output 1.1.1. and 1.1.2.), including provision of reforestation strategy guidebooks and monitoring periodic of mangrove growth (output 1.2.2.); • Monitoring and evaluation with stakeholder relevant to ensure the sustainability of the restoration of mangrove ecosystems as ecological service providers of the area that can have a positive impact in maintaining sustainable livelihoods for fishermen. (component 2, output 2.1.1.); • To increasing the capacity of vulnerable groups to alternative and sustainable livelihoods in adaptation to climate change (component 3, output 3.1.1.).
12.	Pollution Prevention and resources efficiency	• Potential mangrove resources that have declined, as the provider of ecological services in maintaining the sustainability of local livelihoods.	• The application of SOP Nursery, on standardizing the use of seeds / propagules in accordance with predetermined quality standards, will avoid the use of unsuitable / ineffective seeds; To provides a guide book of reforestation, silvofihery and of mangrove products non-timber (component 1, output 1.2.1.); • The formulate in village-level policies in the utilization of natural resources that are efficient and effective for the sustainability of mangrove ecosystems in coastal areas (component 2, output 2.1.1.).
		• Not using chemical or inorganic production facilities, but using only organic production means, which can to increase the carrying capacity of the land and stimulate the growth of microorganism which is a natural food of shrimp and fish in silvofishery ponds with no pollution impact;	• To strengthening capacity with the socialization, mentoring and training (component 3, output 3.1.1. and 3.2.1.); • To build "demonstration plots" of silvofishery and regularly mentoring of technical Aquaculture;

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		• The guarantee in the development of sustainable livelihood alternatives by developing sustainable non-timber mangrove products for vulnerable groups in the Mahakam Delta by utilizing mangrove fruits resources (maximum 30% of mangrove fruiting) that are efficient and effective.	• To built and develop to mangrove product non-timber with in limited way utilization of mangrove fruit (maximum 30% of the fruits in the tree), but still effective and sustainable; (4) • Monitoring and Evaluation with beneficiaries regularly;
13.	Public Health	• Health insurance from mangrove fruit processed products • Waste polybags from the mangrove nursery	• Maintain sanitation of the products produced and register them in the health department • To choose and collect, the condition of a good polybag will be reused and the damaged one is transferred to a waste treatment facility in the sub-district area, besides that it can also be recycled
14.	Physical and Cultural Heritage	Not Applicable	-
15.	Lands and Soil Conservation	Not Applicable	-
	(4) *The observation by the team in the field, mangrove fruit contained in the trees, more than 50% is not utilized by the natural habitat or the system of regenerative growth of mangroves, fruit that fell, many were swept away and carried away by the tide.*		

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Table 8. Adherence between the components and results associated with the ESP Adaptation Fund

NO.	Component and Outcomes	ESP Adaptation Fund	
1	Restoration of Mangrove ecosystems from the impacts of climate change as a sources to support economics development;		
	1.1. Formed communities and local governments awareness in the conservation natural resources.	2 3 5 9 11	Access and Equity Marginalized and Vulnerable Groups Gender Equity and Women's Empowerment Protection of Natural Habitats Climate Change
	1.2. Strengthened awareness and ownership of local communities and groups of students related to conservation of Mangrove ecosystem as an effort to overcome the impact of climate Change.	2 3 5 9 11 12	Access and Equity Marginalized and Vulnerable Groups Gender Equity and Women's Empowerment Protection of Natural Habitats Climate Change Pollution Prevention and Resource Efficiency
2	Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation;		
	2.1. Encouraging the institutional of policy	2	Access and Equity

	in the conservation mangrove Ecosystems.	3 5 9 11 12	Marginalized and Vulnerable Groups Gender Equity and Women's Empowerment Protection of Natural Habitats Climate Change Pollution Prevention and Resource Efficiency
3	Promoting and to develop of alternative economics development for local community.		
	3.1. Enhance the capacity of local communities in the development of alternative economies;	2 3 5 11 12	Access and Equity Marginalized and Vulnerable Groups Gender Equity and Women's Empowerment Climate Change Pollution Prevention and Resource Efficiency
	3.2: Increased local community income by means the promotion of sustainable alternative economics development	2 3 5 9 12	Access and Equity Marginalized and Vulnerable Groups Gender Equity and Women's Empowerment Protection of Natural Habitats Pollution Prevention and Resource Efficiency

Generally, the series of components to be implemented in this project certainly does not give a negative impact on climate change, the activities that will be done have the positive potential to improve the environmental and social security system, the including mitigation measures. The program will be classified into **category C** or it can be said that the program does not have any adverse social and environmental impacts.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project / programme implementation.

The programs will be implemented starting January 2019 until December 2020 with details are as follows:

The arrangements of program implementation is divisible for 4 stages: Preparation, Implementation, Monitoring and Evaluation, and closing project stage / delivery adaptation.

a. **Preparation stage**

This a supporting activity in order to prepare the process of program implementation. At this stage YML will be responsible for ensuring all sub activities are implemented. To implement this activity YML will partner with several other parties, namely:

- Village Government: through consultation and assessment processes with the team, the village government will recommend of villages area that will target program areas, other than can provide recommendations in determining prospective communities' groups including considering representation of vulnerable groups and gender equality.
- Forestry Taskforce Unit (KPH), Environmental Department, Forestry Department, Maritime and Fisheries Department this stage of preparation the parties will provide

policy-related information about the management of the Mahakam delta area and build future program synergy and collaboration, especially on the principles of environment, social and economics.

- Sub National Board of Climate Change (DDPI): it's an institution of established through the governor regulation no.9 of 2017 to coordinate the implementation of climate change control in East Kalimantan; this preparation process to obtain information on the management of the Mahakam Delta in an integrated manner with the involvement of non-government stakeholders.
- Regional Development Planning Agency as responsible for the planning of the regional program at the district and provincial level through the consultation process is expected to coordinate the existing programs at the district or regional work unit level associated with the Mahakam Delta region.

b. Implementation stage

This stage is divisible into 3 components namely restoration of mangrove ecosystems from the impacts of climate change as a sources of support economics development, Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation, and Promoting and to develop of alternative economics development for local community. Where to ensure the implementation of activities on each component, YML will be partner with:

- Village Government: To support and ensure the implementation of programs at the village level, provide village facilities that can be utilized for the implementation of activities and awareness of the importance of mangroves and facilitate the preparation of related to the management of mangrove ecosystems at the village level.
- Forestry Taskforce Unit (KPH): To providing information on the ecology of mangrove area it's management in accordance with existing regulation, providing assistance to village government in drafting village regulation. And then YML will be collaborate with forestry taskforce unit in the development Silfovishery and non-timber mangrove product as a sustainable livelihood.
- Sub National Board of Climate Change (DDPI): support to implementation of program activities such as raised awareness, disseminating learning, policy advocacy and facilitating collaboration and synergy between programs at both local government and non-government.
- Marine and Fisheries of Department, and environment of department: conducting guidance to coastal community groups in the development of businesses that are destructive and non-chemical.
- Dipterocarps research team will be involved in the implementation of component 1 and component 2, which will undertake permanent carbon establishment, assaying impacts and vulnerability in The Mahakam Delta.

c. Monitoring and evaluation stage

this activity stage is a very important to ensure the program according to the design that has been agreed. In the monitoring and evaluation stage YML will partner with related parties:

- Village government and stakeholders: Routinely conduct CO joint monitoring at the village level on the implementation of activities;
- Dipterocarps research team: with field teams to monitor mangrove growth rates in the sample plots, and estimate carbon uptake from the mangrove planting results;

- Forestry Taskforce Unit KPH: The Monitoring implementation of program activities in order to conform to the existing rules and policies, especially in the management of mangrove areas;
- Maritime and Fisheries of Department (DKP): ensuring silvofishery activities are in line with the utilization of coastal space through integration of aquaculture activities with coastal ecosystems;
- The Environment of Department: monitoring the implementation of program activities with the use of environmentally friendly materials and do not do the area exploitation;
- Regional Development Planning Agency (BAPPEDA): facilitate synergy of results of monitoring and evaluation of projects with other programs that are also in the Mahakam delta area to become a joint learning;
- Sub National Board of Climate Change: Facilitate project monitoring and evaluation in the context of climate change control in East Kalimantan.

d. Project Closing/ Delivery adaptation

Delivery Adaptation / project closing stage is the final stage of the program to distribute the learning and ensure the sustainability of success through synergy and collaboration with local government and other programs. In the implementation of this stage YML will build partnerships with related parties such as:

- Village Government: disseminates lessons learned from the program to village government and other village communities located in the Mahakam delta area so as to jointly adopt the successes achieved;
- Forestry Taskforce Unit (KPH): facilitate and adopt project success to become one of the future KPH program strategies;
- Sub National Board of Climate Change (DDPI): Facilitate project learning outcomes for policy advocation materials, program strategies related to climate change control;
- Regional Development Planning Agency: Facilitate the success of project learning to get government program support in the following years, so that what has been a success can continue because of the support and support of the local government;
- Private Sector: Support Capacity Building to local community and stakeholder relevant in The Mahakam Delta especially to rehabilitation of mangrove

The arrangements of program implementation based on the project cycle, responsible for each activity, contribution of fund, the strategic partners involved at each level are described in ***annex 01***.

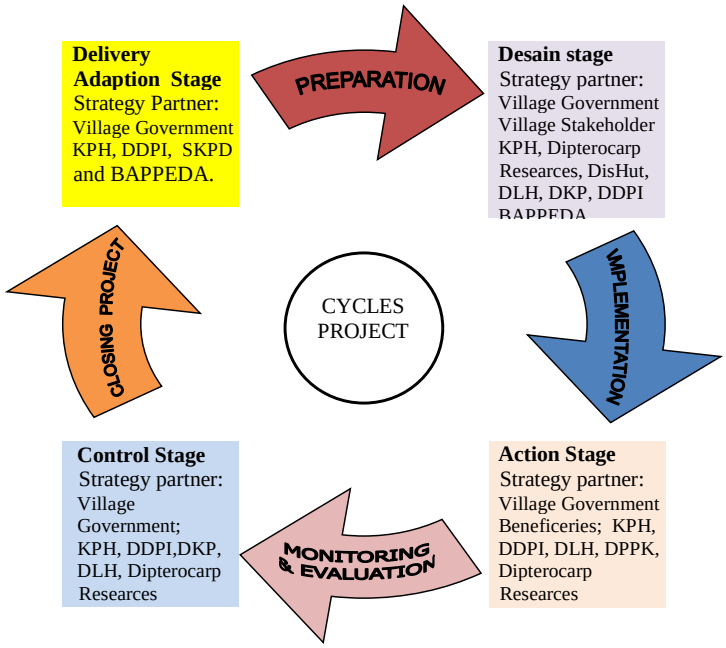

Fig. 10. The Implementation of Project Cycles

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

Create cooperation agreement between the parties with adhere the anti-corruption laws, customize between the things that need to be achieved in a given time period with budget availability, and provide understanding to the community about budget disbursement process.

YML will focus on financial risk management by conducting audit and monitoring program together by using financial accounting tools in the form of institutional financial SOP. Prior to program implementation, YML would develop agreement on budget management internally as well as with communities based on Indonesian corruption law. Furthermore, YML would also deliver information to communities regarding funding, installments, and the use of programme supporting asset.

KPH : Forest Management Unit; DisHut : Forestry Department; DLH : Environment Department;
DKP : Marine and Fisheries Department; BAPPEDA : Regional development and planning agency;
SKPD : Regional Work Unit; DDPI : Sub-National Board of Climate Change

The success one key of the program is the ability to management of maximize the opportunities and at same time reduce risks / challenges faced in implementing the program to a minimum.

Table 9. Financial and programme risk management

No.	ASPECT	RISK POTENTIAL	RISK HANDLING STRATEGIES
1	Financial	Changes in the exchange rate will affect the budget	• Adjustment exchange rate of fluctuations IDR against US $ at the time of fund transactions in the bank by conducting an exchange rate gap within the activity budget detail of 5-6%; Logical consequences can the reduction funds from donors.
		delays in disbursement of funds	• Timeline revision, through the adjustment of available funds taking into account the priorities of the activity work plan for the period.
2	Communication network	50% of assisted areas that can't reach communication networks	• The Adjustment of timing arrangement with tidal surface. • Community Organizer is from a local person. • To Establish communication system in empty area using 2 meter band frequency (*VHF*) provided by YML.
3	Community socio-culture	The habit of the community using mangrove wood to make FADs.	• The Community awareness activities of fishermen related ecological functions of mangrove as spawning ground, nursery ground, and natural fish feeding ground. • To Direct involvement of fishermen's representatives in activities. • To used Persuasive approach.
		Assistance of social group vulnerability in business development mangrove product of non-timber	• To developing and assisting business diversification in the vulnerable groups. • To accompany the newly vulnerable groups intensively, in developing non-timber mangrove business.
4	Institutional	Differences in perceptions between local stakeholders (LPM, BPD, Village government) on sustainable environment	• To Conducting persuasive dialogue with local actors. • To Conducting awareness and understanding to local actors related the importance of sustainable environment
		Increasing capacity of community groups with low human resources	• To conducting ongoing guidance and assistance to improve self-help groups in running their business • The Synergize with local volunteers to improve the group's capacity in the local community
		Nothingness of standard rules on sustainable natural resource	• To Encourage and assist the Village Government to draft PERDES on sustainable natural resource management

		management	
5	Environment	The use of polybag from plastic material	• To choose and collect, the condition of a good polybag will be reused and the damaged one is transferred to a waste treatment facility in the sub-district area, besides that it can also be recycled.
		Plastic packaging materials from consumption of socialization and training activities	• To collect and all plastic materials are transferred to waste processing facilities in the sub-district area, besides that they can also be used as recycling. • The use prevented of beverages with plastic packaging and replace with a non-packaged drink

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

As described in Part II-D II-E and II-K about an overview of the environmental and social impacts and risks identified as being relevant to the project / programme..
To ensure that remaining risks are well managed the project management, fully take the management of environmental and social risks into The Environmental and Social Management Plan (ESMP), developed for this project. identifies measures and actions that reduce potentially adverse environmental and social impacts. describes mitigation measures, both from the perspective of mitigating risks at each activity in line with the Environmental and Social Policy of the Adaptation Fund.
Project compliance with relevant rules, regulation, standards and ESP principles – in line with the Environmental and Social Policy of the Adaptation Fund, detailed in the following table :

Table 10. Environment and social risk management in line with ESP Adaptation Fund and than national and sub national policy

Outcomes / Output	**Part II-D**	**Part II – E**	**ESP Adaptation Fund**		**Further assessment procedure and potential prevention and mitigation measures.**
Formed communities and local governments awareness in the conservation natural resources	<u>National</u> - First Nationally Determined Contribution (NDC) Republic of Indonesia, 2016 - Presidential	- Presidential Decree No. 121, of 2012 - Regulation of the Minister of Marine and Fisheries No.16, of 2008	**2** **3** **5**	Access and Equity Marginal and Vulnerable Groups Gender Equality and Women	• To socialization and awareness activities on The mangrove ecological functions for existence of natural biota; • To strengthening capacity with Assistance, mentoring and training; • Training of seeds collection, nursery and

1.1.1. Raised awareness of communities and local government in the mangrove ecosystems rehabilitation **1.1.2.** Mangrove reforestation activities about 628.800 plants	decree No. 2 of 2015 - RAN-API, 2014 - The Law RI Number 27 of 2007 <u>Sub-National</u> - The provincial government East Kalimantan of Governor Regulation No. 22 of 2011 - The Provincial Regulation of East Kalimantan No.1 of 2016	- Regulation of the Minister of Environment and Forestry No..33 of 2016	**9** **11**	empowerment Protaction of natural habitat Climate change	mangrove planting; • Training of reforestation strategic; • Planting mangroves as many 628,800 trees, especially in critical areas, collection and nursery activities; • the establish water wave barrier; • The Establish plot carbon stock; • Assessing impacts and vulnerability in Mahakam Delta.
Strengthened awareness and ownership of local communities and groups of students related to conservation of mangrove ecosystem as an effort to overcome the impact of climate change	<u>National</u> - First Nationally Determined Contribution (NDC) Republic of Indonesia, 2016 - Presidential Decree No. 2 of 2015 - RAN-API, 2014 - The Law RI Number 27 Year 2007	- Presidential Decree No. 121, of 2012 - Regulation of the Minister of Marine and Fisheries No.16 of 2008 - Regulation of the Minister of Environment and Forestry No.33 of 2016 - Minister Of Environment Regulation No.19 of 2012	**2** **3** **5** **9** **11**	Access and Equity Marginal and Vulnerable Groups Gender Equality and Women empowerment Protaction of natural habitat Climate change	• To Provide assistance and the capacity building related to conservation and utilization of mangroves, to local government and direct beneficiaries; • To Provide access information to stakeholders in the Mahakam delta of advocacy media and guidebook; • To accompany local communities, other vulnerable groups and village govenrment in the planning and implementation of reforestation appropriate strategies each year;

1.2.1. Increased knowledge among students about the importance of mangrove ecosystem as an effort to preserve natural resource (elementary and junior high school students); **1.2.2.** Disseminating learning and awareness about the development of mangrove ecosystem that support alternative sustainable livelihoods.	<u>Sub-National</u> - The provincial government East Kalimantan of Governor Regulation No. 22, of 2011 - Provincial regulation of east kalimantan no. 7, of 2014 - The Provincial Regulation of East Kalimantan No.1, of 2016		**12**	Polution Prevention and resources eficiency	• Monitoring and evaluation with stakeholder relevant to ensure the sustainability of the restoration of mangrove ecosystems as ecological service providers of the area that can have a positive impact in maintaining sustainable livelihoods for fishermen; • To facilitation "policy brief" as a media advocacy.
Encouraging the institutional of policy in the conservation mangrove Ecosystems **2.1.1.** Protected and conserve 100 hectares of mangrove planting in 3 villages, as well as mangrove ecosystem in the area, covering of 21,288 hectares.	<u>National</u> - First Nationally Determined Contribution (NDC) Republic of Indonesia, 2016 - Presidential Decree No. 2 of 2015 - RAN-API, 2014 - The Law RI Number 27 Year 2007 <u>Sub-National</u> - The provincial government East Kalimantan of Governor	- Presidential Decree No. 121, 2012 - Regulation of the Minister of Marine and Fisheries No.16 of 2008 - Regulation of the Minister of Environment and Forestry No.P.33 Year 2016 - Minister Of Environment Regulation No.19 of 2012	**2** **3** **5** **9** **11** **12**	Access and Equity Marginal and Vulnerable Group Gender Equality and Women empowerment Protaction of natural habitat Climate change Polution Prevention and resources eficiency	• To facilitate 9 x FGD in village level, 1x in district level, and 2 x FGD in province level; • To facilitate of village rules related to the conservation and utilization of mangroves; • To Provide special the strengthening and assistance to improve women's roles and improve gender equality, particularly in to protected and conservation of mangrove ecosystems in 3 villages.

	Regulation No. 22, of 2011 - Provincial regulation of east kalimantan no. 7, of 2014 - The Provincial Regulation of East Kalimantan No.1, of 2016				
Enhance the capacity of local communities to adapt with climate change impact in mangrove ecosystem; **3.1.1.** Increased knowledge and skills of local communities in the application and development of silvofishery Fishponds **3.1.2.** Increased knowledge and skills of local communities in the management of non- timber mangrove products as alternative income.	<u>National</u> - Presidential Decree No. 2 of 2015 - RAN-API, 2014 - The Law RI Number 27 Year 2007 <u>Sub-National</u> - The provincial government East Kalimantan of Governor Regulation No. 22, of 2011 - The Provincial Regulation of East Kalimantan No.1, of 2016	- Regulation of the Minister of Marine and Fisheries No.16 of 2008 - Minister Of Environment Regulation No.19 of 2012	**2** **3** **5** **11** **12**	Access and Equity Marginal and Vulnerable Groups Gender Equality and Women empowerment Climate change Polution Prevention and resources eficiency	• To Provide assistance and the capacity building related to conservation and utilization of mangroves, to local government and direct beneficiaries; • To Provide special assistance to the marginalized and vulnerable groups so that they are benefit from the programme being; • To mentoring of technical Aquaculture and training of mangrove product non timber for women groups.

Increased local community income by means the promotion of sustainable alternative economics Development **3.2.1.** Demonstration plots Development of silvofishery ponds in 3 villages **3.2.2.** Business development of non-timber mangrove product for 6 CBOs of women in 3 villages	National - Presidential Decree No. 2 of 2015 - RAN-API, 2014 - The Law RI Number 27 Year 2007 Sub-National - The provincial government East Kalimantan of Governor Regulation No. 22, of 2011 - The Provincial Regulation of East Kalimantan No.1, of 2016	- Minister of Marine and Fisheries No.16 of 2008 - Minister Of Environment Regulation No.19 of 2012	**2** **3** **5** **9** **12**	Access and Equity Marginal and Vulnerable Groups Gender Equality and Women empowerment Protaction of natural habitat Polution Prevention and resources eficiency	• To facilitated Dike and sluice gate renovation in 9 ponds demplots; • Procurement of organic fishery production facilities; • To provide Kit monitoring of water quality for silvofishery demplots; • To mentoring tehnical implementation silfovishery; • To Strengthening technical assistance of mangrove non-timber, which effectively utilizes the mangrove fruit which will be at maximum of 30% of the available fruits in the trees to maintain the balancing of the mangrove ecosystem; • To facilitate Procurement of non timber mangrove products processing equipment; • Mentoring production and marketing non-timber mangrove product •

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.

Monitoring and evaluation is an important, to monitor the extent to which changes occur during program implementation and the impact of the program on climate change (output, outcome and impact), with reference to the established framework / framework.
Monitoring and evaluation activities will be conducted every six months by using “Monitoring and evaluation tool”, which will be developed by YML. Monitoring will also be conducted for each programme component by involving internal team of programme implementation. The results of monitoring and evaluation will be used as learning process to improve programme management and ensure that programme implementation is on the right track. External monitoring and evaluation will also be conducted twice during programme implementation involving relevant stakeholders. These stakeholders are expected to be able to assess as well as advice programme implementation. Moreover, this process is also important for data collection to develop policy brief in relation to the conservation of mangrove ecosystem and sustainable livelihood. The cost needed for this activity is US $ 11,011.20.

Table 11. The monitoring and evaluation arrangements

NO.	Activity	INTERNAL	EKSTERNAL	REMARKS
1	Monthly Monitoring	Performed by program Team (Program Officer/PO)	-	To Used Work plan and Timeline
2	Three Monthly Monitoring and Finance Audit	Performed by PO and Project Coordinator with beneficiaries;	-	To Used Monitoring Tools
3	Six Monthly Monitoring 6/partner progress review (PPR)	-	Performed by Project Team and AF Team with stakeholder Delta Mahakam.	To Used PPR Tool
4	Six Monthly Audit	-	Performed by Project Team and AF Team; To check the effectiveness of fund used	To Used AF Finance form
5	Evaluation	-	Performed by Project team, Multi stakeholder Delta Mahakam with Beneficiaries.	To use an evaluation tools that has been agreed (Funding, Implementation, outcome progress and impact progress)

- **Reporting**

  To present the results of the activity, the change then, program managers will provide information about the results of monitoring and evaluation into the report / report. The form of a report to be submitted to the relevant parties are:

  1. The activity report: describes the results obtained from activities and changes began to occur, the reporting is done every month and report the use of the funds have been used;
  2. Quarterly report: Delivering summary results facilitation and implementation of the program is done every 3 months. This report is also intended to monitor whether the activities carried out are still on the track nor the use of funds;
  3. Partner progress review report (PPRR): 6-monthly report on the monitoring that includes the development of output, put come and program goals. The report will be submitted to donors and stakeholders.
  4. Annual Progress Report : The report contains information about changes and developments in the program (output and outcome) or progress in the achievement of planned results during the first years . The report will also be distributed to donors and stakeholders.
  5. Final Project Report : The report presents the results / progress goals, output, outcome, and the findings of indicator of impact that began to emerge, problems, challenges / obstacles and recommendations to the parties to sustain and replicate the success obtained during the program. This evaluation report will also be decimated to become learning materials Together with the parties that have an interest in the Mahakam delta.

Described the monitoring and evaluation arrangements detail into ***annex 02*****.**

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

Expected Results	Indicators	Milestones
Goal: Providing technical assistance as well as building the capacity of Local communities to adapt with climate change impacts in mangrove ecosystem in Mahakam Delta		
Impact: Increased resiliency at the community level to cope with climate change impacts in mangrove ecosystems.		
Outcome 1.1: Formed communities and local governments awareness in the conservation natural resources	415 people consisting of 135 communities and local governments, as well as 400 students and teachers in 3 villages have increased their awareness of the importance sustainable natural resource conservation	
Output 1.1.1. Raised awareness of communities and local government in the mangrove ecosystems rehabilitation.	1.1.1.1. 135 local people have understand the benefits of mangrove ecosystems for sustainable livelihoods	1st quarter of 2019 2nd quarter of 2019
	1.1.1.2. 60 local people understand about the reforestation stage starting from seed collection, nursery up to mangroves planting	2nd quarter of 2019
	1.1.1.3. 60 local people understand about the arrange and establish the reforestation strategies based on implementation time and planting area priority	3rd quarter of 2019
Output 1.1.2. Mangrove reforestation activities about 628.800 plants in 3 villages;	1.1.2.1. Identified of natural stockiest for local mangrove seeds that were carried out before planting	2nd quarter of 2019 2nd quarter of 2020
	1.1.2.2. 276 local people directly involved in the collection of mangrove seeds, nursery and mangroves planting	The 2nd to 3rd quarter of 2019 The 2nd to 3rd quarter of 2020

	1.1.2.3. 30 local people handle 6 nurseries, consisting of 12 people who build 6 nursery constructions and 18 people handling nursery care; 48 local people carry out the filling of soil and propagule into polybags in nursery	The 2nd to 4th quarter of 2019 The 2nd to 3rd quarter of 2020
	1.1.2.4. 138 local people planted 628,800 mangroves for 2 years, consisting of 111 men and 27 women	4th quarter of 2019 The 3rd to 4th quarter of 2020
	1.1.2.5. The making of water wave barrier by 3 groups of vulnerable, as a safeguard of mangrove trees planted in coastal areas in the three locations of activities.	4th quarter of 2019
	1.1.2.6. Monitored growth rate and percentage of mangrove life that has been planted in 3 Villages	1st quarter of 2020 4th quarter of 2020
	1.1.2.7. Establishment of 12 carbon measurement plots in 3 villages	4th quarter of 2019 2nd quarter of 2020 4th quarter of 2020
	1.1.2.8. Identified the biophysical, socio-economic and cultural attributes and forcing factors	2nd quarter of 2019 3rd quarter of 2019 1st quarter of 2020 2nd quarter of 2020
Outcome 1.2. : Strengthened awareness and ownership of local communities and groups of students related to conservation of mangrove ecosystem as an effort to overcome the impact of climate change	Increased capacity 400 student and teachers related to conservation of mangrove ecosystem and; Distribution the lesson learned program to stakeholder, like as the form of reports, guidebooks and documentary film programs, used as campaign and awareness materials.	
Output 1.2.1. Increased knowledge among students about the importance of mangrove ecosystem as an effort to preserve natural resources (elementary and junior high school students);	1.2.1.1. 400 students and teachers understand the importance of conservation the environment and mangrove ecosystems	The 2nd until 3rd quarter of 2019 The 2nd until 3rd quarter of 2020
Output 1.2.2. Disseminating learning and awareness about the development of mangrove Ecosystem	1.2.2.1. Writing of 4 guidebook (reforestation strategy, technical Silvofishery, Non-timber mangrove product and carbon stock establishment)	2nd quarter of 2019 1st quarter of 2020
	1.2.2.2. Duplication of guidebook and publication (4x100 expl)	The 2nd until 3rd quarter of 2019 1st quarter of 2020

		3rd quarter of 2020
	1.2.2.3. Writing of report per semester, 20 documents and duplicated	2nd quarter of 2019 1st quarter of 2020 3rd quarter of 2020 The end of December 2020
	1.2.2.4. Writing of policy brief documents	3rd quarter of 2020
	1.2.2.5. Writing of final report, 1 document and duplicated	The end of December 2020
	1.2.2.6. Compiled and established the documentary film	4th quarter of 2020
Outcome 2.1. : Encouraging the institutional of policy in the conservation mangrove Ecosystems	There are 3 draft of the village regulation and 1 policy brief in the conservation of mangrove ecosystems	
Output 2.1.1. Protected and conserve 100 hectares of mangrove planting in 3 villages, as well as mangrove ecosystem in the area, covering of 21,288 hectares.	2.1.1.1. Implemented of 9 times FGDs at village level (3 x 3 villages) with final input of the village regulation draft concerning balance between social economic activity with Environment	2nd quarter of 2019 1st quarter of 2020 2nd quarter of 2020
	2.1.1.2. Implemented of 1 time FGD at district level for programmes and policy support	3rd quarter of 2019
	2.1.1.3. Implemented of 2 times FGDs at provincial level for policy alignment in Delta Mahakam and recommendation for compile policy brief	3rd quarter of 2019 1st quarter of 2020
	2.1.1.4. Implemented of 12 times internal monitoring and evaluation in 3 villages	2nd quarter of 2019 3rd quarter of 2019 4th quarter of 2019 1st quarter of 2020 2nd quarter of 2020 3rd quarter of 2020 4th quarter of 2020
	2.1.1.5. Implemented of 6 times external monitoring, evaluation and learning (MEL) in 3 villages with relevant stakeholders at provincial level during programmes duration	2nd quarter of 2019 1st quarter of 2020 3rd quarter of 2020
	2.1.1.6. Implemented of 2 times provincial workshops, the commitment of inter actor for the programmes and the joint recommendation on the sustainability of mangrove ecosystems in Delta Mahakam	4th quarter of 2019 3rd quarter of 2020

Outcome 3.1. : Enhance the capacity of local communities to adapt with climate change impact in mangrove ecosystem;	Increased capacity 201 local community to adapt with climate change impacts in mangrove ecosystem.	
Output 3.1.1 Increased knowledge and skills of local communities in the application and development of silvofishery Fishponds	105 local people understand that environmentally friendly aquaculture will ensure the sustainability and development of their aquaculture.	The 1st until 3rd quarter of 2019 1st quarter of 2020
Output 3.1.2 Increased knowledge and skills of local communities in the management of non-timber mangrove products as alternative income	90 women understood about non timber mangrove products in the form of processed mangrove fruits products as their alternative business.	The 3rd until 4th quarter of 2019
Outcome 3.2. : Increased local community income by means the promotion of sustainable alternative economics development	Existence of support the development of alternatives sustainable livelihood for local communities in 3 villages	
Output 3.2.1. Development of silvofishery ponds in 3 villages	3.2.1.1. 9 silvofishery demonstration plots belong to the community with total area 36 hectares in 3 locations have been done Improvements	The 2nd until 4th quarter of 2019
	3.2.1.2. Mangrove planting in the ponds as many as 800 plants / hectares; Procurement of non-chemical organic fishery production facilities such as organic fertilizers, non-pesticide poisons (saponins), dolomite lime, fermentation of fine rice bran, seeds of tiger prawn and milkfish	3rd quarter of 2019 until 1st quarter of 2020
	3.2.1.3. Procurement of 9 packages of water quality monitoring kits and accessories for 9 demonstration plots.	The 2nd until 3rd quarter of 2019
	3.2.1.4. The carry out mentoring within train 18 aquaculture farmers who are directly involved in the implementation and development of silvofishery Fishponds	2nd quarter of 2019 until 4th quarter of 2020
Output 3.2.2. Business development of non-timber mangrove product for 6 CBOs of women in 3 villages	3.2.2.1. Procurement of 6 packages of mangrove processing tools and procurement of 6 packages of packing tools (hand sealer and vacuum sealer) for 6 CBOs of women	4th quarter of 2019

	3.2.2.2. Mentoring 6 groups of women in maintaining the production quality of mangrove fruit products; market opportunities and marketing strategy	3rd quarter of 2019 until 4th quarter of 2020

PMF matrix and logic model are present in ***annex 3.***

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)
1. Restoration of Mangrove ecosystems from the impacts of climate change as a sources of Support Economics development;	• 75,012 person (Male= 39,012 and Female= 14,052) or 22% from total communities in 3 sub-district namely Muara Badak, Anggana and Muara Jawa have direct and non direct beneficiaries and impact from Mangrove ecosystems conservation	Formed communities and local governments awareness in the conservation natural resources	415 people consisting of 135 communities and local governments as well as 400 students and teachers in 3 villages have increased their awareness of the importance sustainable natural resource conservation	**261,332.40**
	• Communities and local governments to getting lessons learned in restoring mangrove ecosystems as an effort to overcome the impacts of climate change	Strengthened awareness and ownership of local communities and groups of students related to conservation of Mangrove ecosystem as an effort to overcome the impact of climate change	- Increased capacity 400 student and teachers related to conservation of mangrove ecosystem and; - Distribution the lesson learned program to stakeholder, like as the form of reports, guidebooks and documentary film programs, used as campaign and awareness materials	

2. Strengthening The institutionalization of policy and sustainability of mangrove ecosystem conservation;	3 villages government and local communities in three villages successfully drafted village regulation as an effort to preserve mangrove Ecosystem sustainability	Encouraging the institutional of policy in the conservation mangrove ecosystems	There are 3 draft of the village regulation and 1 policy brief in the conservation of mangrove ecosystems	**62,147.10**
3. Promoting and to develop of alternative economics development for local community	• 201 local community in 3 villages have increased their capacity of sustainable livelihood	Enhance the the capacity of local communities to adapt with climate change impact in mangrove ecosystem;	Increased capacity 201 local community to adapt with climate change impacts in Mangrove ecosystem.	**183,283.50**
	• 270 local community (female and male) in 3 villages successfully to developed economic (Silvofishery, and mangrove product development non-timber).	Increased local Community income by means the promotion of sustainable alternative economics development	Existence of support the development of Alternatives sustainable livelihood for local communities in 3 villages	

Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
Outcome 1.1: Formed communities and local governments awareness in the conservation natural resources	515 people consisting of 135 communities and local governments, as well as 400 students and teachers in 3 villages have increased their awareness of the importance sustainable natural resource conservation	**Output 1.1.1:** Raised awareness of communities and local government in the mangrove Ecosystems rehabilitation	Target 515 local communities, students, and local government have received capacity building to conservation of mangrove ecosystem.	**216,433.40**
		Output 1.1.2: Mangrove reforestation activities about 628.800 plants in 3 villages;	Reforestation activities, carbon accounting and vulnerability impact analysis in 3 assisted villages have been Conducted	

Outcome 1.2: Strengthened awareness and ownership of local communities and groups of students related to conservation of mangrove ecosystem as an effort to overcome the impact of climate change	• Increased capacity 400 student and teachers related to conservation of mangrove ecosystem and;	**Output 1.2.1:** Increased knowledge among students about the importance of mangrove ecosystem as an effort to preserve natural resources (elementary and junior high school students);	400 students and teachers understand the importance of conservation the environment and mangrove ecosystems	**44,899.00**
	• Distribution the lesson learned program to stakeholder, like as the form of reports, guidebooks and documentary film programs, used as campaign and awareness materials	**Output 1.2.2:** Disseminating learning and awareness about the development of mangrove ecosystem	Distribution media learning like as: 4 progress report, 1 final report, 4 guidebook, and 1 documenter film, used as awareness and campaign material	
Outcome 2.1: Encouraging the institutional of policy in the conservation mangrove ecosystems	There are 3 draft of the village regulation and 1 policy brief in the conservation of mangrove ecosystems	**Output 2.1.1:** Protected and conserve 100 hectares of mangrove planting in 3 villages, as well as mangrove ecosystem in the area, covering of 21,288 hectares.	2.1.1.1. Implemented of 9 times FGDs at village level (3 x 3 villages) with final input of the village regulation draft concerning balance between social economic activity with environment	**62,147.10**
			2.1.1.2. Implemented of 1 time FGD at district level for programmes and policy support	
			2.1.1.3. Implemented of 2 times FGDs at provincial level for policy alignment in Mahakam Delta and recommendation for compile policy brief	
			2.1.1.4. Implemented of 12 times internal monitoring and evaluation in 3 villages	

			2.1.1.5. Implemented of 6 times external monitoring, evaluation and learning (MEL) in 3 villages with relevant stakeholders at provincial level during programmes duration	
			2.1.1.6. Implemented of 2 times provincial workshops, the commitment of inter actor for the programmes and the joint recommendation on the sustainability of mangrove ecosystems in Mahakam Delta	
Outcome 3.1: Enhance the capacity of local communities to adapt with climate change impact in mangrove ecosystem	Increased capacity 201 local community to adapt with climate change impacts in mangrove ecosystem	**Output 3.1.1:** Increased knowledge and skills of local communities in the application and development of Silvofishery fishponds	105 local people understand that environmentally friendly aquaculture will ensure the sustainability and development of their aquaculture.	**37,655.10**
		Output 3.1.2: Increased knowledge and skills of local communities in the management of non-timber mangrove products as alternative income	90 women understood about non timber mangrove products in the form of processed mangrove fruits products as their alternative business	
Outcome 3.2: Increased local Community income by means the promotion of Sustainable	Existence of support the development of alternatives sustainable livelihood for local communities in 3 villages.	**Output 3.2.1:** Development of silvofishery ponds in 3Villages	3.2.1.1. 9 silvofishery Demonstration plots belong to the community with total area 36 hectares in 3 locations have been done improvements.	**145,628.40**

alternative Economics development.			3.2.1.2. Mangrove planting in the ponds as many as 800 plants / hectares; and Procurement of non-chemical organic fishery production facilities such as organic fertilizers, non-pesticide poisons (saponins), dolomite lime, fermentation of fine rice bran, seeds of tiger prawn and milkfish;	
			3.2.1.3. Procurement of 9 packages of water quality monitoring kits and accessories for 9 demonstration plots;	
			3.2.1.4. The carry out mentoring within train 18 aquaculture farmers who are directly involved in the implementation and development of silvofishery fishponds.	
		Output 3.2.2: Business development of non-timber mangrove product for 6 CBOs of women in 3 villages	3.2.2.1. Procurement of 6 packages of mangrove processing tools and procurement of 6 packages of packing tools (hand sealer and vacuum sealer) for 6 CBOs of women	
			3.2.2.2. Mentoring 6 groups of women in maintaining the production quality of mangrove fruit products; market opportunities and marketing strategy	

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.

DETAILED BUDGET					
ADAPTATION FUND PROJECT					
THE ADAPTATION CLIMATE CHANGE FOR SUSTAINABLE					
LIVELIHOODS WITH MANGROVE BASED IN MAHAKAM DELTA					
(24 MONTHS IN 3 VILLAGES)					
No	**Item**	**Vol.**	**Unit**	**Cost per unit (US$)**	**Total (US $)**
Component 1 : Restoration of mangrove ecosystems from the impacts of climate change as a sources of support economics development					**261,332.40**
Outcome 1.1. : Formed communities and local governments awareness in the conservation natural resources					**216,433.44**
Output 1.1.1.	**Raised awareness of communities and local government in the mangrove ecosystems rehabilitation;**				**20,449.90**
Input 1.1.1.1.	Socialization of coastal and mangrove Ecosystem	3	Package	1,243.30	3,729.90
1.1.1.2.	Training of seeds collection, nursery and mangrove planting	3	Package	866.66	2,600.00
1.1.1.3.	Training of reforestation strategic	3	Package	866.66	2,600.00
1.1.1.4.	Incentive CO in field (3 person x 3 x 24 month)	72	Month	160.00	11,520.00
Output 1.1.2.	**Mangrove reforestation activities about 628.800 plants in 3 villages**				**195,983.50**
Input 1.1.2.1.	Survey of seeds stocks by internal team	6	Days	198.31	1,189.90
1.1.2.2.	Propagules collection	628.800	Propagule		27,667.20
1.1.2.3.	Nursery activities	6	Nursery		60,364.80
1.1.2.4.	Mangrove planting 628,800 plants	628.800	Plants		62,880.00
1.1.2.5.	Water wave barrier	3	pack/village	2,800.00	8,400.00
1.1.2.6.	Growth Monitoring	12	Frequency	297.40	3,568.80
1.1.2.7.	Carbon Stock Establishment	3	Package	25,392.00	25,392.00
1.1.2.8.	Assessing impacts and vulnerability in Mahakam Delta	4	Package	6,520.80	6,520.80
Outcome 1.2. : Strengthened awareness and ownership of local communities and groups of students related to conservation of mangrove ecosystem					**44,899.00**
Output 1.2.1.	**Increased knowledge among students about the importance of mangrove ecosystem as an effort to preserve natural resources (elementary and junior high school students);**				**21,504.00**
Input 1.2.1.1.	Environment campaign in the schools	10	Package	2,150.40	21,504.00
Output 1.2.2.	**Disseminating learning and awareness about the development of mangrove ecosystem that support alternative sustainable livelihoods**				**23,395.00**
Input 1.2.2.1.	Guidebook writing	4	Books	400.00	1,600.00
1.2.2.2.	Duplication of guidebooks and	400	Copies	8.00	3,200.00

	Publication(4 guidebooks x 100 copies)				
1.2.2.3.	1. Writing of report per semester	20	Doc	103.20	2,064.00
	2. Duplicated of reports per semester	120	Copies	3.20	384.00
1.2.2.4.	Writing the policy brief documents	1	Doc	1,500.00	1,500.00
1.2.2.5.	1. Writing of Final report	1	Doc	344.00	344.00
	2. Duplicated of final report	30	Copies	12.00	360.00
1.2.2.6.	Compiled and established the documentary film of Adaptation Fund programmes Implementation	1	Doc	4,000.00	4,000.00
1.2.2.7.	Databased, leaning and publication officer	24	Month	336.00	8,064.00
Component 2: Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation					**62,147.10**
Outcome 2.1. : Encouraging the institutional of policy in the conservation mangrove Ecosystems					**62,147.10**
Output 2.1.1.	**Protected and conservation 100 hectares of mangrove ecosystems in 3 Villages**				**62,147.10**
Input 2.1.1.1.	FGDs in villages	12	Package	1,190.66	14,288.00
2.1.1.2.	FGD in district	1	Package	5,728.00	5,728.00
2.1.1.3.	FGDs in province for police brief Recommendation	2	Package	6,301.00	12,602.00
2.1.1.4.	Monitoring and evaluation internal	12	Frequency	528.00	6,336.00
2.1.1.5.	Monitoring and evaluation external with province stakeholder and act	6	Frequency	779.20	4,675.20
2.1.1.6.	Workshop in province	2	Package	7,338.95	14,677.90
2.1.1.7.	Coastal and spatial specialist	48	Frequency	80.00	3,840.00
Component 3: Promoting and to develop of alternative economics development for local community.					**183,283.50**
Outcome 3.1. : Enhance the capacity of local communities in the development of alternative economies;					**37,655.10**
Output 3.1.1.	**Increased knowledge and skills of local communities in the application and development of silvofishery fishponds**				**19,749.20**
Input 3.1.1.1.	Socialization	3	Package	1,202.60	3,608.00
3.1.1.2.	Training of silvofishery pond preparation	3	Package	673.10	2,019.30
3.1.1.3.	Training of silvofishery technic	9	Package	673.10	6,057.90
3.1.1.4.	Silvofishery officer	24	Month	336.00	8,064.00
Output 3.1.2.	**Increased knowledge and skills of local communities in the management of non-timber mangrove products as alternative income**				**17,905.90**
Input 3.1.2.1.	Socialization	3	Package	1,123.30	3,369.90
3.1.2.2.	Training of non-timber mangrove product	6	Package	669.30	4,015.90
3.1.2.3.	Training of processing tools with provide	3	Package	818.70	2,456.10
3.1.2.4.	Reforestation & mangrove product officer	24	Month	336.00	8,064.00
Outcome 3.2. : Increased local community income by means the promotion of sustainable alternative economics development					**145,628.40**

Output 3.2.1	**Development of silvofishery ponds in 3 villages**				**137,430.00**
Input 3.2 .1.1	Dike and sluice gate renovation for silvofihsery	36	Hectares	2,079.18	74,850.80
3.2.1.2	Procurement of fishery production facilities	9	Package	4,423.52	39,811.70
3.2.1.3	Kit monitoring procurement of water quality	9	Package	916.92	8,252.30
3.2.1.4	Mentoring in silvofishery demonstration plots	54	Frequency	268.80	14,515.20
Output 3.2.2	**Business development of non-timber mangrove product for 6 CBOs of women in 3 villages**				**8,198.40**
Input 3.2 .2.1	Procurement of non-timber mangrove products processing equipment	6	Package	560.00	3,360.00
3.2.2.2	Mentoring in production of non-timber mangrove product	18	Frequency	268.80	4,838.40
TOTAL PROJECT/PROGRAMME COST					**506,763.00**
Project/Programme Cycle Management Fee charged by the Implementing Entity					~~43,074.00~~
Project/Programme Execution Costs					**48,887.00**
Amount of Financing Requested (US $)					~~598,742.00~~

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Details of Project/Programme Execution Cost					
No	**Item**	**Vol.**	**Unit**	**@ unit (US$)**	**Total (US $)**
01	Programme Coordinator	24	Month	400.00	9,600.00
02	Financial officer	24	Month	368.00	8,832.00
03	Administration officer	24	Month	280.00	6,720.00
04	Local transport	24	Month	560.00	13,440.00
05	50% of office rent during the project [(1)]	2	Years	2,240.00	2,240.00
06	Office stationery	24	Month	40.00	960.00
07	Communication and internet	24	Month	80.00	1,920.00
08	Safety equipment	10	package	64.00	640.00
09	Projector	1	Unit	549.00	549.00
10	Portable printer	1	Unit	480.00	480.00
11	Laptop	1	Unit	850.00	850.00
12	GPS	1	Unit	256.00	256.00
13	Audit program	1	package	2,400.00	2,400.00
Total Project/Pogramme Execution Cost					**48,887.00**
[(1)]This financing each year is Rp 28,000,000. or (US$) 2,240 as a form of responsibility YML provides 50% for "office rent" allocation and is expected to support 50% Adaptation Fund so that Office Rent total support for 2 years (US$) 2,240 and contribution YML of (US$) 2,240					

- Based on the above calculation, The Amount of Financing Requested is US$ 598,742.00 This funding support will be felt by 137,626 residents so that the cost-per-life effectiveness is US$ 4.35 / person.

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

Disbursment schedule based on schedule of project/programme implementation as follows:

No	Time	Amount (US $)	Percentage
1	Early January 2019	239,490.00	40%
2	Early September 2019	239,490.00	40%
3	Early June 2020	119,762.00	20%
	Total Budget	**598,742.00**	**100%**

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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 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:

The endorsement letters are attached

Name, Position, Ministry	Date*: (Month, day, year)*
Ir. H. Riza Indra Riadi, M.Si. Director of East Kalimantan Provincial Environmental Department	4 April 2017
Drs. Tri Bangun Laksana Director Center of Development Control in Kalimantan Ecoregion, Ministry of Environment and Forestry	4 April 2017

(*) 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.

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 Adaptation Fund Board, and prevailing National Development and Adaptation Pl (President Decree No. 16 year 2015; P.13/Menlhk/Setjen/OTL.0/1/2(P.33/Menlhk/Setjen/Kum.1/3/2016; Indonesia Intended Nationally Determi Contribution/INDC; COP 21 Paris Agreement signed by Government of Indonesia; Book Map of Information System of Vulnerability Index Data (SIDIK); Permen-KP No. 2 year 2(Climate Change Adaptation National Action Plan) and subject to the approval by Adaptation Fund Board, commit to implementing the project/programme in compliance the Environmental and Social Policy of the Adaptation Fund and on the understanding the Implementing Entity will be fully (legally and financially) responsible for implementation of this project/programme.
 *Monica Tanuhandaru* *Executive Director of Partnership for Governance Reform in Indonesia (Kemitraan)* Implementing Entity Coordinator

Date: *August, 6, 2018*	Tel. and email: +62-21-22780580; Monica.Tanuhandaru@kemitraan.or.id
Project Contact Person:	Dewi Rizki
Tel. And Email:	+62-21-22780580; Dewi.Rizki@kemitraan.or.id

Deleted: 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 (The Adaptation Climate Change for Sustainable Livelihoods with Mangrove Based in Mahakam Delta) 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. ...

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PEMERINTAH PROVINSI KALIMANTAN TIMUR
DINAS LINGKUNGAN HIDUP
Jalan M.T Haryono Telepon (0541) 760304 – 760305 Fax. (0541) 760302
Samarinda 75124

Samarinda, 4 April 2017

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

Subject: Endorsement for The Adaptation and Mitigation Climate Change for Sustainable Livelihoods with Mangrove Based in Mahakam Delta Programme. In my capacity as designated authority for the Adaptation Fund in East Kalimantan Province, I confirm that the above project/programme proposal is in accordance with the government's East Kalimantan Province priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the Delta Mahakam area. Accordingly, I am pleased to endorse the above project/programme proposal with support from the Adaptation Fund. If approved, the project/programme will be implemented by East Kalimantan Province and executed by Yayasan Mangrove Lestari.

Sincerely,

PEMERINTAH PROVINSI KALIMANTAN TIMUR
DINAS LINGKUNGAN HIDUP

Ir. H. Riza Indra Riadi, M.Si
Pembina Utama Madya
NIP. 19641028 199003 1 009

KEMENTERIAN LINGKUNGAN HIDUP DAN KEHUTANAN
SEKRETARIAT JENDERAL
PUSAT PENGENDALIAN PEMBANGUNAN EKOREGION KALIMANTAN
Jln. Jend. Sudirman No. 19A Balikpapan - Kalimantan Timur
Telepon : (0542) 738375, 749206 - Fax : (0542) 749206, 749175

Letter of Endorsement by Government

Balikpapan, 4 April 2017

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

Subject: Endorsement for The Adaptation and Mitigation Climate Change for Sustainable Livelihoods with Mangrove Based in Mahakam Delta Programme

In my capacity as designated authority for the Adaptation Fund in East Kalimantan Province, I confirm that the above project/programme proposal is in accordance with the government's East Kalimantan Province priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the Delta Mahakam area

Accordingly, I am pleased to endorse the above project/programme proposal with support from the Adaptation Fund. If approved, the project/programme will be implemented inEast Kalimantan Province and executed by Yayasan Mangrove Lestari dan Dipterocarps Ecosystem Research and Development Center

Sincerely,

Ir. Tri Bangun Laksana
Director

ANNEX 01.

The arrangements for project
The Adaptation Measures to Support Sustainable Livelihoods for Local Communities in Mangrove Ecosystem in The Mahakam Delta, East Kalimantan

No.	Activity / Component	Result	Sub Activity	Contribution Of Fund	Responsibility Sub Activity	Implemented	Level	Strategy Partner	Quantity	Time
I. PREPARATION	Preparation of program	The establishment of commitment and understanding of the parties related to the implementation of the program to be conducted in the Delta Mahakam	Coordination and consultation with village government	YML	CO	YML team	Village	Fisheries and agriculture extension workers	3	Jan-Feb 2019
			Actor assessment and beneficiaries' groups	YML	CO	YML team	Village	Fisheries and agriculture extension workers	3	
			FGD with vulnerable groups and women groups	YML	CO	YML team	Village	Fisheries and agriculture extension workers	3	
			Socialization program in village	YML	PC	YML team	Village	Village government; Village Stakeholder.	3	
			Coordination and consultation with local government and stakeholder relevant;	YML	PC	YML team	Districh	Bappeda; DKP; DLH.	2	

			Coordination and consultation with local government and stakeholder relevant in provincial	YML	PC	YML team	Provincial	KPH; Dishut; DLH; DDPI.	2	
I. IMPLEMENTING	Component 1 Restoration of Mangrove ecosystems from the impacts of climate change as a sources to support economics development;	• Raised awareness of community and local government in the mangrove ecosystems rehabilitation; • Mangrove reforestation activities about 628.800 plant in 3 villages; • Increased knowledge among 400 students and teacher in 10 school about the importance of mangrove	Socialization of coastal and mangrove ecosystem	AF	CO	YML Team	Village	Village Government; Local community.	3	Feb-Apr 2019
			Training of seeds collection, nursery and mangrove planting, and training of reforestation strategy	AF	PO	YML Team	Village	Village Government; local community.	3	Mar-Jul 2019
			Survey of seeds stocks by internal team	AF	PO	YML Team	Village	Vulnerability people group	6	Apr-May 2019 Apr-May 2020

		ecosystem as an effort to preserve natural resources (elementary and junior high school students); • Disseminating learning and awareness about the development of mangrove ecosystem;	Collection of propagule seeds	AF	CO	YML Team	Village	Vulnerability people group	2 period	May-Aug 2019 May-Jul 2020
			Nursery activities	AF	CO	YML Team	Village	Vulnerability people group	2 period	May-Nov 2019 May-Oct 2020
			Mangrove planting 628,800 plants	AF	PO	YML Team	Village	Vulnerability people group	2	Oct-Dec 2019 Sep-Nov 2020
			Water wave barrier	AF	PO	YML Team	Village	Vulnerability people group	3	Oct-Dec 2019
			Growth Monitoring	AF	CO	YML Team	Village	Vulnerability people group; KPH; Dipterocarfa Research.	12	Jan-Feb 2020 Apr-May 2020 Oct-Dec 2020
			Carbon Stock Establishment	AF	Research Team	YML Team	Village	Dipterocarfa Research; KPH; DDPI.	3	Oct' 2019 Apr' 2020 Oct' 2020
			Assessing impacts and vulnerability in Mahakam Delta	AF	Research Team	YML Team	Village	Dipterocarfa Research; KPH; DDPI; DKP.	4	Apr' 2019 Aug' 2019 Jan' 2020 May' 2020

			Environment champagne in the schools	AF	PO	YML Team	Village, Sub District	SD; SMP, SMA; KPH; DDPI.	10	Jul-Sep 2019 Jul-Sep 2020
			Guidebook writing and preparation “Policy Brief”	AF	PC	YML Team	Program	KPH, DDPI, DKP	4 Guidebook	Mar-May 2019 Jan’ 2020
			Duplication of guidebooks and Publication (4 guidebooks x 100 expl)	AF	FO	YML Team	Village; District; Province	Women CBOs; Aquaculture CBOs; local communities ; Local government.	400 copies	Jun-Sep 2019 Feb-Mar 2019 Jul-Aug 2019
			Report of Adaptation Fund programmed implementation per semester and finally	AF	PC	YML Team	Program	Team	20 document; 120 copies	Jun’ 2019 Dec’2019 Jun’ 2020 Dec’2020
			Writing Policy brief as a document of recommendation for the actors / stakeholders local, district and provincial	AF	PO	YML Team	Village; District; Province	Beneficiaries ; Local community; Local government; Local NGO’s / CBO’s; Donor.	1 document; 30 copies	Jul-Sep 2019

			Compiled and established the documentary film	AF	PO	YML Team	Village; District; Province	Beneficiaries ; Local community; Local government; Local NGO's / CBO's; Donor.	1 document	During the program cycle; The final in Nov' 2020
	Component 2: Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation	Protected and conserve 100 hectares of mangrove planting in 3 villages, as well as mangrove ecosystem in the area, covering of 21,288 hectares.	FGDs in villages	AF	CO	YML Team	Village	Village government; Local stakeholder; KPH.	12	Apr-Jun 2019 Jan-Feb 2020 Jun-Jul 2020
			FGD in district	AF	PO	YML Team	District	BAPPEDA;, DKP; DLH; KPH.	1	Jul'2019
			FGDs in province for police brief recommendation	AF	PC	YML Team	Province	Dipterocarfa Research; KPH; DDPI; DLH; Dishut; DKP.	2	AugSep 2019 Mar-Apr 2020
			Workshop in province	AF	PC	YML Team	Province	Dipterocarfa Research; DDPI; KPH; DLH; Dishut; DKP; BAPPEDA.	2	Oct'2019 Sep'2020
	Component 3. Promoting and to develop an	• Increased knowledge and skills of	Socialization of sustainable aquaculture	AF	PO	YML Team	Village	DKP	3	Feb-Apr 2019

	alternative economics development for local community	local communities in the application and development of silvofishery fishponds and mangrove product non-timber as alternative income.	Training of silvofishery pond preparation	AF	PO	YML Team	Village	DKP	3	Apr-May 2019
			Training of silvofishery Technic	AF	PO	YML Team	Village	DKP	9	Jun-Jul 2019
			Socialization of sustainable alternative livelihood	AF	PO	YML Team	Village	KPH; Local NGO's	3	Jul-Aug 2019
			Training of non-timber mangrove product	AF	PO	YML Team	Village	3 Diva, East Java	6	Aug-Sep 2019
			Training of processing tools with provided	AF	PO	YML Team	Village	3 Diva, East Java	3	Oct-Nov 2019
			Dike and sluice gate renovation for silvofishery demonstration plot	AF	CO	YML Team	Village	DKP	36 hectares	Jul-Aug 2019 Nov-Dec 2019
			Procurement of organic fishery production facilities	AF	PO	YML Team	Village	DKP	9 ponds	Aug-Oct 2019 Jan-Mar 2020
			Kit monitoring procurement of water quality	AF	CO	YML Team	Village	DKP	9 ponds	May-Jul 2019
			Mentoring	AF	PO	YML Team	Village	DKP	54	Jul'2019 Until

										Dec'2020
			Post-Project Mentoring	YML	PC	YML Team	Village	DKP; KPH; Dipterocarfa Research.	8	Mar' 2021 Jun' 2021 Sep' 2021 Dec' 2021
			Procurement of non-timber mangrove products processing equipment	AF	PO	YML Team	Village	Perindagkop	6 packages	Sep-Nov 2019
			Mentoring	AF	PO	YML Team	Village	Local Community Local Government;	18	Nov' 2019 Jan'2020 Mar' 2020 May' 2020 Jul' 2020 Sep'2020 Dec'2020
III. M & E	Monitoring, Evaluation and Audit Program	To ensure the program according to the design that has been agreed. On the track or not.	M & E internal	AF	PC	YML Team	Program	Team	12	May'2019 Until Nov'2020
			M & E external	AF	PC	AF Project Team	Program	District and Provincial Government; Stakeholder in Mahakam Delta.	6	Jun'2019 Jan'2020 Aug'2020
			Post-Project Monitoring	YML	PC	YML Team	Program	Village Government; KPH; Dipterocarfa	6	Jun' 2021 Dec' 2021 Jun' 2022

								Research; Stakeholder relevant.		Dec' 2022
			Audit Program	AF	FO	AF and YML Team	Program	Project document input	2	Dec'2019 until Dec'2020
IV. Project Closing	Delivery Adaptation	To ensure the sustainability of program success and sustainability of learning that has been generated during the program,	Coordination and consultation	AF and YML	PC	YML Team and Local Government	Village; District; Province	Village Government; District Government; Provincial Government; KPH; DDPI.	4	Dec'2018 Feb'2019 Sep'2019 Jan 2020 Oct' 2019
			Consultation With private Sector	YML	PC	YML Team	District; Province	District Government; Provincial Government; Private Sector;	2	Oct'2019 Feb'2021
			Dissemination of learning	AF and YML	PC	YML Team	District; Province	KPH; Provincial Government; DDPI; Private Sector.	2	Jan'2020 Jan'2021
			To establish a synergy with private sector for the rehabilitation of mangrove vegetation	YML and Private Sector	YML KPH	YML Team	District; Province	Private Sector.	1	Jan'2021

Note:

AF	:	*Adaptation Fund*	*SD*	:	*Primary school*	*KPH*	: *Forestry Taskforce Unit*
YML	:	*Mangrove Lestari Foundation*	*SMP*	:	*Junior high school*	*DKP*	: *Marine and Fisheries Department*
CO	:	*Community organizing officer*	*SMA*	:	*Secondary school*	*DLH*	: *Environment Department*
PO	:	*Project officer*				*Dishut*	: *Forestry department*
FO	:	*Finance & admin officer*				*DDPI*	: *Sub National Board of Climate Change*
PC	:	*Programme coordinator*				*BAPPEDA*	: *Regional development and planning agency*
						Perindagkop	: *Department of Industry, Trade and Cooperatives*

Schedule of Programme Implementation
The Adaptation Measures to Support Sustainable Livelihoods for Local Communities in Mangrove Ecosystem in The Mahakam Delta, East Kalimantan, Indonesia

No.	Activity	Time of Implmentation (24 months)																							
		2019												2020											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	Programme Preparation	1/19	2/19																						
1.1.1.1.	Sosialization of costal and mangrove ecosystem		2/19	3/19																					
1.1.1.2.	Training of seeds collection, nursery and planting			3/19		5/19																			
1.1.1.3.	Training of reforestation strategic						6/19	7/19																	
1.1.2.1.	Survey of seeds stocks by internal team				4/19												4/20								
1.1.2.2.	Propagule collection					5/19	6/18	7/19									4/20	5/20	6/20	7/20					
1.1.2.3.	Nursery						6/19	7/19	8/19	9/19	10/19	11/19					4/20	5/20	6/20	7/20	8/20				
1.1.2.4.	Mangrove planting 628,800 plants										10/19	11/19									8/20	9/20	10/20		
1.1.2.5.	Water wave barrier										10/19	11/19													
1.1.2.6.	Growth Monitoring													1/20	2/20		4/20	5/20					10/20	11/20	
1.1.2.7.	Carbon Stock Establishment										10/19						4/20						10/20		
1.1.2.8.	Assessing impacts and vulnerability				4/19				8/19					1/20				5/20							
1.2.1.1.	Environment campaign in the schools						6/19		8/19										6/20		8/20				
1.2.2.1.	Guidebook writing			3/19	4/19	5/19								1/20											

1.2.2.2.	Duplication of guidebooks and Publication						6/19	7/19	8/19	10/17					2/20	3/20				7/20	8/20				
1.2.2.3.	Writing of report per semester						6/19						12/19						6/20						12/20
1.2.2.4.	Writing the policy brief documents																			7/20	8/20	9/20			
1.2.2.5.	Writing of Final report																								12/20
1.2.2.6.	Compiled and established the documentary film																						10/20	11/20	
2.1.1.1.	FGDs in villages				4/19		6/19							1/20	2/20				6/20	7/20					
2.1.1.2.	FGD in District							7/19																	
2.1.1.3.	FGDs in Province									9/19							4/20								
2.1.1.4.	Monitoring and evaluation internal					5/19			8/19			11/19			2/20			5/20			8/20			11/20	
2.1.1.5.	Monitoring and evaluation external						6/19							1/20							8/20				
2.1.1.6.	Workshop in province										10/19											9/20			
3.1.1.1.	Socialization of sustainable aquaculture		2/19	3/19																					
3.1.1.2.	Training of silvofishery pond preparation				4/19																				
3.1.1.3.	Training of silvofishery Technic						6/19	7/19					12/19	1/208											
3.1.2.1.	Socialization of sustainable alternative livelihood								8/19																
3.1.2.2.	Training of mangrove product non-timber									9/19															
3.1.2.3.	Training of processing tools with provide										10/19														
3.2.1.1.	Dike and sluice gate renovation for silvofishery “demplots”							7/19	8/19			11/19	12/19												
3.2.1.2.	Procurement of fishery production facilities								8/19	9/19	10/19			1/20	2/20	3/20									

3.2.1.3.	Kit monitoring procurement of water quality					5/19	6/19																				
3.2.1.4.	Mentoring in silvofishery demonstration plots						7/19	7/19	8/19	9/19	10/19	11/19	12/19	1/20	2/20	3/20	4/208	5/20	6/20	7/20	8/20	9/20	10/20	11/20			
3.2.2.1.	Procurement of non-timber mangrove products processing equipment									9/19	10/19																
3.2.2.2.	Mentoring in production of non-timber mangrove product											11/19		1/20		3/20		5/20		7/20		9/20					
Annotation :			*Preparation*				*Implementation of activity*																				

ANNEX 02.

MONITORING, EVALUATION AND LEARNING FRAMEWORK
THE ADAPTATION MEASURES TO SUPPORT SUSTAINABLE LIVELIHOODS FOR LOCAL COMMUNITIES
IN MANGROVE ECOSYSTEM IN THE MAHAKAM DELTA, EAST KALIMANTAN

PROJECT RESULTS	INDICATOR	METHODS	VERIFICATION	RESPONSIBLE	PARTICIPANT/ BENEFICIARIES
GOAL	1. Restoration of mangrove ecosystems from the impacts of climate change as a sources to support economics development in 3 villages ; 2. Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation in Delta Mahakam; 3. Promoting and to develop an alternative economics development for local community in 3 villages;	FGD Deep Interview Observation Data Analysis Analysis Regulation	Finally Report	Project Team & AF	Local Government; Local Community; Students and teachers; District Government; Provincial Government; Stakeholder Relevant.
OUTCOME					
1.1. Formed communities and local governments awareness in the conservation natural resources;	415 people consisting of 135 communities and local governments, as well as 400 students and teachers in 3 villages have increased their awareness of the importance sustainable natural resource conservation;	FGD Deep interview	Annual Report Notulensi	Project Team & AF	Local Community; Students and teachers; Local Government.
1.2. Strengthened	Increased capacity 400	FGD	PPR Report	Project Team &	Local Government;

awareness and ownership of local communities and groups of students related to conservation of mangrove ecosystem as an effort to overcome the impact of climate change.	student and teachers related to preservation of mangrove ecosystem and; Distribution the lesson learned program to stakeholder, like as the form of reports, guidebooks and documentary film programs, used as campaign and awareness materials;	Deep Interview Observation		AF	Local Community; Students and teachers; Provincial Government; Stakeholder Relevant.
2.1. Encouraging the institutional of policy in the conservation mangrove ecosystems.	There are 3 draft of the village regulation and 1 policy brief in the conservation of mangrove ecosystem;	FGD Deep Interview Observation Analysis Regulation	Annual Report PPR Report	Project Team & AF	Local Government; Local Community; Students and teachers; District Government; Provincial Government; Stakeholder Relevant.
3.1 Enhance the the capacity of local communities to adapt with climate change impact in mangrove ecosystem;	Increased capacity 201 local community to adapt with climate change impacts in mangrove;	FGD Deep interview	PPR Report Annual Report	Project Team	Local Community; Local Government; Stakeholder Relevant.
3.2. Increased local community income by means the promotion of sustainable alternative economics development.	Existence of support the development of alternatives sustainable livelihood for local community in 3 villages;	FGD Deep Interview Observation	PPR Report	Project Team & AF	Local Community; Local Government; Stakeholder Relevant.
OUTPUT					
1.1.1. Raised awareness of community and local government in	535 people consisting of 135 communities and local governments, as well as 400	FGD Deep Interview	Quarterly Report	Project Team	Local Community; Students and teachers;

the mangrove ecosystems rehabilitation;	students and teachers have received capacity building to conservation of mangrove ecosystem;				Local Government.
1.1.2. Mangrove reforestation activities about 628.800 plant in 3 villages;	Reforestation activities, carbon accounting and vulnerability impact analysis in 3 assisted villages have been conducted;	FGD Observation	Activity Report	Project Team	Local Community; Students and teachers; Local Government.
1.2.1. Increased knowledge among students about the importance of mangrove ecosystem as an effort to preserve natural resources (elementary and junior high school students);	400 students and teachers understand the importance of conservation the environment and mangrove ecosystems;	FGD Deep Interview	Quarterly Report	Project Team	Students and teachers; Local Government.
1.2.2. Disseminating learning and awareness about the development of mangrove ecosystem.	Distribution media learning like as 4 progress report, 1 final report, 4 guidebook, and 1 documenter film, poster used as awareness and campaign material;	FGD Observation	Annual Report PPR Report	Project Team	Local Government; Local Community; Students and teachers; District Government; Provincial Government; Stakeholder Relevant.
2.1.1. Protected and conserve 100 hectares of mangrove planting in 3 villages, as well as mangrove ecosystem in the	There are 3 draft of the village regulation and 1 policy brief in the conservation of mangrove ecosystem.	FGD Observation	Annual Report	Project Team	Local Government; Local Community; Students and teachers; District Government; Provincial

area, covering of 21,288 hectares.					Government; Stakeholder Relevant.
3.1.1. Increased knowledge and skills of local communities in the application and development of silvofishery fishponds;	105 local people understand that environmentally friendly aquaculture will ensure the sustainability and development of their aquaculture;	FGD Deep Interview	Activity Report	Project Team	Local Community; Local Government.
3.1.2. Increased knowledge and skills of local community in the management of non timber mangrove product as alternative income;	90 women understood about non timber mangrove products in the form of processed mangrove fruits products as their alternative business;	FGD Deep Interview	Activity Report	Project Team	Local Community; Local Government.
3.2.1. Development of silvofishery pond in 3 villages;	Increased capacity 201 local community to adapt with climate change impact in mangrove ecosystem;	FGD Deep Interview Observation	Activity Report	Project Team	Local Community; Local Government; District Government.
3.2.2. Business development of non timber mangrove product for 6 CBO's of women in 3 villages.	Existence of support the development of alternatives sustainable livelihood for 270 local community in 3 villages.	FGD Deep Interview Observation	Quarterly Report	Project Team	Local Community; Local Government; District Government.

ANNEX 03

PERFORMANCE MEASUREMENT FRAMEWORK (PMF)
THE ADAPTATION MEASURES TO SUPPORT SUSTAINABLE LIVELIHOODS FOR LOCAL COMMUNITIES IN MANGROVE ECOSYSTEM IN THE MAHAKAM DELTA, EAST KALIMANTAN

NO.	OUTCOMES/ OUTPUT	INDICATORS	BASELINE	TARGET	DATA SOURCES	DATA COLLECTION METHODS	FREQUENCY	RESPONSIBILTY
Components 1.000: Restoration of mangrove ecosystems from the impacts of climate change as a sources to support economics development								
1	**1.1.** Formed communities and local governments awareness in the conservation natural resources;	745 people consisting of 210 beneficiaries, 135 communities and local government as well as 400 student and teachers in 3 villages have increased their awareness of the importance sustainable natural resource conservation	The slightingly of awareness and understanding the local community and local government for restoration of mangroves	Availability local communities and village governments have awareness of the maintaining and protect 21.288 hectares mangrove in the project intervention area or 18 % of the mangrove ecosystem area in the Mahakam Delta.	Project Report	Document Analysis FGD Deep interview	Annual	Project Team
	Output 1.1.1 Raised awareness of community and local government in the mangrove ecosystems	745 people consisting of 135 communities and local governments, 210 beneficiaries as well as 400 students and teachers have received capacity	0	**First year** 135 community and village government; 210 beneficiaries, have understand the benefits of mangrove ecosystems for the life and sustainability of the livelihoods of	Project Report	Document Analysis FGD Deep interview	Annual Mid term	Project Team

	rehabilitation;	building to conservation of mangrove ecosystem;		the community. **Second year** 345 communities receive knowledge of management sustainable mangrove ecosystem.				
	Output 1.1.2 Mangrove reforestation activities about 628.800 plant in 3 villages;	Reforestation activities, carbon accounting and vulnerability impact analysis in 3 assisted villages have been conducted; and 276 beneficiaries involved in the collection of mangrove seeds, nursery and mangroves planting;	0	**First year** - 60% of mangroves have been embedded in the coastal critical zone; - 100% of mangroves have been embedded in fish ponds; - Establishment of 6 permanent sample plots of Carbon Stock; - It has been doing M & E growth mangrove planting age of 3 months. **Second year** - 40% of mangroves have been embedded in the coastal critical zone; - Establishment of 3 permanent sample plots of Carbon	Project Report	Document Analysis FGD Deep interview	Annual Mid term	Project Team

				Stock; - It has been doing M & E growth mangrove planting age of 3 months, 6 months and 1 year.				
	1.2. Strengthened awareness and ownership of local communities and groups of students related to conservation of mangrove ecosystem as an effort to overcome the impact of climate change.	• Increased capacity 400 student and teachers related to conservation of mangrove ecosystem and; • Distribution the lesson learned program to stakeholder, like as the form of reports, guidebooks and documentary film programs, used as campaign and awareness materials;	The slightingly of awareness & knowledge of students and teachers about the importance of mangrove ecosystem for environmental sustainability	• 400 student and teachers from 10 School have increased related to conservation of mangrove ecosystem until the end of project; • There are 1 documentary film, 4 guidebooks, and poster used as awareness and campaign material until the end of project.	Project Report	Document Analysis FGD Deep interview	Annual	Poject Team
	Output 1.2.1 Increased knowledge among students about the importance of mangrove ecosystem as an effort to	400 students and teachers understand the importance of conservation the environment and mangrove ecosystems;	0	**<u>First year</u>** 240 students and teachers (6 schools) have understand the benefits of mangrove ecosystems for the life and sustainability of the livelihoods of the community.	Project Report	Document Analysis FGD Deep interview	Annual Mid term	Project Team

	preserve natural resources (elementary and junior high school students);			**Second year** 160 students and teachers (4 schools) have understand the benefits of mangrove ecosystems for the life and sustainability of the livelihoods of the community.				
	Output 1.2.2. Disseminating learning and awareness about the development of mangrove ecosystem;	Distribution media learning like as 4 progress report, 1 final report, 4 guidebook, and 1 documenter film, poster used as awareness and campaign material;	0	**First year** - There are 4 guidebooks and has been duplicated as many as 400 books (@ 100 books); - Distributed 200 guidebooks to the community and other inter-actor. **Second year** - There is 1 documentary film of project implementation; - Distributed 200 guidebooks to the community and other inter-actor; - There is a poster for environmental awareness campaigns.	Project Report	Document Analysis FGD Deep interview	Annual Mid term	Project Team

Component 2.000: Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation;								
2	**2.1** Encouraging the institutional of policy in the conservation mangrove ecosystems	There are 3 draft of the village regulation and 1 policy brief in the conservation of mangrove ecosystem;	Local institutional have not understanding of the importance local regulation for sustainable mangrove ecosystem	There are 3 draft of the village regulation and 1 policy brief in the conservation of mangrove ecosystem until the end of the project	Project Report	Document Analysis FGD Deep interview Regulation Analysis	Annual End the project	Project Team
	Output 2.1.1 Protected and conserve 100 hectares of mangrove planting in 3 villages, as well as mangrove ecosystem in the area, covering of 21,288 hectares.	There are 3 draft of the village regulation and 1 policy brief in the conservation of mangrove ecosystem; There are 3 draft of the village regulation and 1 policy brief in the conservation of mangrove ecosystem;	0	**First year** - The implementation of 9 times FGD; - The implementation of 1 workshop; - The implementation of 9 M & E times; - The publication of 2 draft of village regulations. **Second year** - The implementation of 4 times FGD; - The implementation of 1 workshop; - The implementation of 9 M & E times; - The publication of 1 draft of village	Project Report	Document Analysis FGD Deep interview	annual	Project Team

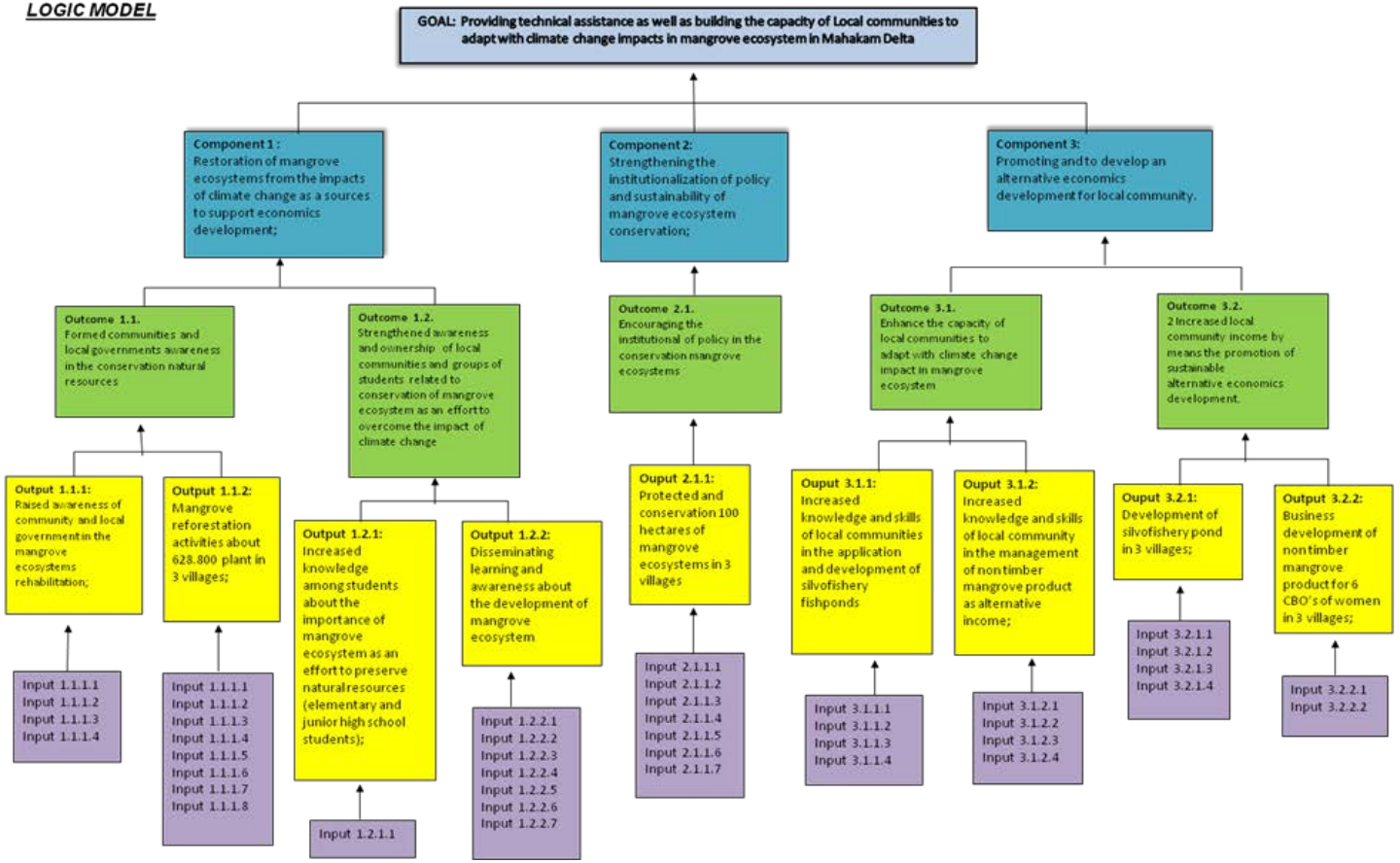
				regulations; - The publication of 1 policy brief.				
Component 3.000: Promoting and to develop of alternative economics development for Local Community								
3	**3.1** Enhance the capacity of local communities to adapt with climate change impact in mangrove ecosystem;	Increased capacity 201 local community to adapt with climate change impacts in mangrove;	210 local community have not capacity to adapt climate change impact in mangrove ecosystem	210 local community and local government have increased capacity to adapt with climate change impacts in mangrove ecosystem until the end of the project.	Project Report	FGD Deep Interview Observation Beneficiaries Satisfaction	Annual	Project Team
	Output 3.1.1. Increased knowledge and skills of local communities in the application and development of silvofishery fishponds;	111 local people understand that environmentally friendly aquaculture will ensure the sustainability and development of their aquaculture;	0	**First year** - There are 3 times socialization of the application of environmentally friendly ponds; - There are 9 times technical training of environmentally friendly aquaculture management (silvofishery); - 105 fish farmers and 6 people from the village administration in 3 villages have gained technical knowledge of environmentally friendly aquaculture	Project Report	Document Analysis FGD Deep interview	Annual Mid term	Project Team

				management. **Second year** - There are 3 times of advanced training on silvofishery technical management; - The existence of a complete annual report on the application of the silvofisery ponds.				
	Output 3.1.2 Increased knowledge and skills of local community in the management of non timber mangrove product as alternative income;	90 women understood about non timber mangrove products in the form of processed mangrove fruits products as their alternative business;	0	**First year** - 75% of non-timber mangrove product group members have understanding about mangrove processing process become economical product; - 6 groups of women in the 3 locations have been trained in non-timber mangrove processing. **Second year** - 6 groups of women have been trained in non-timber mangrove production.	Project Report	Document Analysis FGD Deep interview	Annual Mid term	Project Team
	3.2. Increased local	Existence of support the	Local communities	▪ Increased incomes of	Project Report	Document Analysis	Annual End the	Project Team

	community income by means the promotion of sustainable alternative economics development.	development of alternatives sustainable livelihood for local community in 3 villages;	do not understand the importance of managing the sustainable livelihood	aquaculture community by 33.3% or US $ 261.75 / month / family from previous income of 290.75 / month / family; ▪ The results of non-timber mangrove product activities will be increased the household income of 10 until 15 % per years.		FGD Deep interview	project	
	Output 3.2.1 Development of silvofishery pond in 3 villages;	Increased capacity 201 local community to adapt with climate change impact in mangrove ecosystem;	0	**First year** - 36 hectares (9 demonstration plots) have been repaired embankments and sluices (ponds inlet); - 9 silvofishery demonstration plots have been procurement of fishery production facilities; - 9 silvofishery demonstration plots have been received a monitoring kit of water quality;	Project Report	Document Analysis FGD Deep interview	Annual	Project Team

				- Has been done 18 times the assistance in 9 demonstration plots silvofishery (2 times the assistance per demonstration plot). **<u>Second year</u>** - 36 assistances were conducted in 9 demonstration plots of silvofishery (4 times per demonstration plots); - 201 local communities have been received practice and direct learning through 9 demonstration plots of silvofishery.				

LOGIC MODEL


GOAL: Providing technical assistance as well as building the capacity of Local communities to adapt with climate change impacts in mangrove ecosystem in Mahakam Delta
Component 1 : Restoration of mangrove ecosystems from the impacts of climate change as a sources to support economics development;
Component 2: Strengthening the institutionalization of policy and sustainability of mangrove ecosystem conservation;
Component 3: Promoting and to develop an alternative economics development for local community.
Outcome 1.1. Formed communities and local governments awareness in the conservation natural resources
Outcome 1.2. Strengthened awareness and ownership of local communities and groups of students related to conservation of mangrove ecosystem as an effort to overcome the impact of climate change
Outcome 2.1. Encouraging the institutional of policy in the conservation mangrove ecosystems
Outcome 3.1. Enhance the capacity of local communities to adapt with climate change impact in mangrove ecosystem
Outcome 3.2. 2 Increased local community income by means the promotion of sustainable alternative economics development.
Output 1.1.1: Raised awareness of community and local government in the mangrove ecosystems rehabilitation;
Output 1.1.2: Mangrove reforestation activities about 628.800 plant in 3 villages;
Output 1.2.1: Increased knowledge among students about the importance of mangrove ecosystem as an effort to preserve natural resources (elementary and junior high school students);
Output 1.2.2: Disseminating learning and awareness about the development of mangrove ecosystem
Ouput 2.1.1: Protected and conservation 100 hectares of mangrove ecosystems in 3 villages
Ouput 3.1.1: Increased knowledge and skills of local communities in the application and development of silvofishery fishponds
Ouput 3.1.2: Increased knowledge and skills of local community in the management of non timber mangrove product as alternative income;
Output 3.2.1: Development of silvofishery pond in 3 villages;
Output 3.2.2: Business development of non timber mangrove product for 6 CBO's of women in 3 villages;
Input 1.1.1.1 Input 1.1.1.2 Input 1.1.1.3 Input 1.1.1.4
Input 1.1.1.1 Input 1.1.1.2 Input 1.1.1.3 Input 1.1.1.4 Input 1.1.1.5 Input 1.1.1.6 Input 1.1.1.7 Input 1.1.1.8
Input 1.2.1.1
Input 1.2.2.1 Input 1.2.2.2 Input 1.2.2.3 Input 1.2.2.4 Input 1.2.2.5 Input 1.2.2.6 Input 1.2.2.7
Input 2.1.1.1 Input 2.1.1.2 Input 2.1.1.3 Input 2.1.1.4 Input 2.1.1.5 Input 2.1.1.6 Input 2.1.1.7
Input 3.1.1.1 Input 3.1.1.2 Input 3.1.1.3 Input 3.1.1.4
Input 3.1.2.1 Input 3.1.2.2 Input 3.1.2.3 Input 3.1.2.4
Input 3.2.1.1 Input 3.2.1.2 Input 3.2.1.3 Input 3.2.1.4
Input 3.2.2.1 Input 3.2.2.2