AFB/PPRC.24-25/3
10 June, 2019

Adaptation Fund Board
Project and Programme Review Committee

PROPOSAL FOR INDONESIA (2)

Background

1. The Operational Policies and Guidelines (OPG) for Parties to Access Resources from the Adaptation Fund (the Fund), adopted by the Adaptation Fund Board (the Board), state in paragraph 45 that regular adaptation project and programme proposals, i.e. those that request funding exceeding US$ 1 million, would undergo either a one-step, or a two-step approval process. In case of the one-step process, the proponent would directly submit a fully-developed project proposal. In the two-step process, the proponent would first submit a brief project concept, which would be reviewed by the Project and Programme Review Committee (PPRC) and would have to receive the endorsement of the Board. In the second step, the fully-developed project/programme document would be reviewed by the PPRC, and would ultimately require the Board's approval.

2. The Templates approved by the Board (Annex 5 of the OPG, as amended in March 2016) do not include a separate template for project and programme concepts but provide that these are to be submitted using the project and programme proposal template. The section on Adaptation Fund Project Review Criteria states:

> *For regular projects using the two-step approval process, only the first four criteria will be applied when reviewing the 1st step for regular project concept. In addition, the information provided in the 1st step approval process with respect to the review criteria for the regular project concept could be less detailed than the information in the request for approval template submitted at the 2nd step approval process. Furthermore, a final project document is required for regular projects for the 2nd step approval, in addition to the approval template.*

3. The first four criteria mentioned above are:
   (i) Country Eligibility,
   (ii) Project Eligibility,
   (iii) Resource Availability, and
   (iv) Eligibility of NIE/MIE.

4. The fifth criterion, applied when reviewing a fully-developed project document, is:
   (v) Implementation Arrangements.

5. It is worth noting that at the twenty-second Board meeting, the Environmental and Social Policy (ESP) of the Fund was approved and at the twenty-seventh Board meeting, the Gender Policy (GP) of the Fund was also approved. Consequently, compliance with both the ESP and the GP has been included in the review criteria both for concept documents and fully-developed project documents. The proposal template was revised as well, to include sections requesting demonstration of compliance of the project/programme with the ESP and the GP.

6. At its seventeenth meeting, the Board decided (Decision B.17/7) to approve "Instructions for preparing a request for project or programme funding from the Adaptation Fund", contained in the Annex to document AFB/PPRC.8/4, which further outlines applicable review criteria for both concepts and fully-developed proposals. The latest version of this document was launched in conjunction with the revision of the Operational Policies and Guidelines in November 2013.

7. Based on the Board Decision B.9/2, the first call for project and programme proposals was issued and an invitation letter to eligible Parties to submit project and programme proposals to the Fund was sent out on April 8, 2010.

8. According to the Board Decision B.12/10, a project or programme proposal needs to be received by the secretariat no less than nine weeks before a Board meeting, in order to be considered by the Board in that meeting.

9. The following fully-developed programme document titled “Building Coastal City Resilience to Climate Change Impacts and Natural Disasters in Pekalongan City, Central Java Province” was submitted for Indonesia by the Partnership for Governance Reform in Indonesia (Kemitraan), which is the National Implementing Entity of the Adaptation Fund.

10. This is the fourth submission of the proposal using the two-step submission process. It was first submitted in the thirtieth meeting and was endorsed by the Board.

11. It was resubmitted in the thirty-third meeting as a fully-developed programme and the Board decided to:

(a) Not approve the fully-developed project, as supplemented by the clarification responses provided by the Partnership for Governance Reform in Indonesia (Kemitraan) to the request made by the technical review;

(b) Suggest that Kemitraan reformulate the proposal taking into account the observations in the review sheet annexed to the notification of the Board’s decision, as well as the following issues:

(i) The proposal should provide the necessary assessments for compliance with the Environmental and Social Policy (ESP) of the Fund;

(ii) The proposal should further demonstrate how the program interventions would meet national legislation regarding Environmental Impact Assessments (EIAs), since program activities do not appear to be “cultivation” activities in substance and are thus not likely to benefit from national EIAs exemptions;

(iii) The proposal should include evidences of consultations with local communities, financial institutions and land-owners that will be targeted by mangrove restoration activities and demonstrate that the outcomes of such consultations (interests and concerns of stakeholders) are reflected in the design of the interventions;

(iv) The proposal should provide evidence of local governments’ commitments to maintain and finance the program outcomes (embankments, eco-tourism, latrines, mangroves) after program closure; and

(c) Request Kemitraan to transmit the observations under subparagraph b) to the Government of Indonesia.

(Decision B.33/16)

12. The current submission was received by the secretariat in time to be considered in the thirty-third/thirty-fourth Board meeting. The secretariat carried out a technical review of the project proposal, assigned it the diary number IDN/NIE/Multi/2017/1, and completed a review sheet.

13. In accordance with a request to the secretariat made by the Board in its 10th meeting, the secretariat shared this review sheet with Kemitraan, and offered it the opportunity of providing responses before the review sheet was sent to the PPRC.

14. The secretariat is submitting to the PPRC the summary and, pursuant to decision B.17/15, the final technical review of the project, both prepared by the secretariat, along with the final submission of the proposal in the following section. In accordance with decision B.25.15, the proposal is submitted with changes between the initial submission and the revised version highlighted.

Project Summary

Indonesia – Building Coastal City Resilience to Climate Change Impacts and Natural Disasters in Pekalongan City, Central Java Province

Implementing Entity: Partnership for Governance Reform in Indonesia (Kemitraan)
Project/Programme Execution Cost: US$ 390,295
Total Project/Programme Cost: US$ 3,718,077
Implementing Fee: US$ 61,626
Financing Requested: US$ 4,169,998

Programme Background and Context

With 18,000 islands and a coastline that stretches over 18,000 km and that hosts almost 60% of the country population, Indonesia is vulnerable to the impacts of climate change. Among such impacts, it is expected that the average surface temperature will increase by 0.8°C-1°C by 2050, that the sea surface temperature will increase by 1-1.2°C by 2050, that rainfall will increase in wet season and decrease in transition months, and that the sea level rise will reach 35-40 cm in 2050 relative to the value of 2000. Because of its rapid urban development, high population density and role in rice production, the North Coast of Java, where Pekalongan city is located, is seen as highly vulnerable to climate change impacts.

The objective of the proposed project is to build coastal resilience to climate change impacts and natural disasters with a particular focus on pro-poor adaptation actions that involve and benefit the most vulnerable communities of the city. It plans to reach this objective through a combination of hard and soft adaptation measures, distilled along different governance level (national, provincial, city and village level), reflected respectively in each of the four program components. Adaptation interventions remains to be precisely determined, but information provided include developing alternative livelihoods (such as shrimp and fish production), constructing coastal embankments structures, developing eco-tourism, and building capacity of different stakeholders to integrated climate chance adaptation into various planning processes. The project proposal is structured around four components.

Component 1: Village level - Enhancing coastal community capacity in developing and implementing Climate change adaptation actions and village information system including developing livelihood strategies, by also taking into account relevant local wisdom (USD 948,173)

This component will undertake various scoping and feasibility studies in order to define activities that the proposed program could implement following which activities will be implemented in target villages. Examples of activities include mangrove restoration, support in rice and fish production, promotion of rainwater harvesting techniques, ecotourism, among others.

Component 2: City Level - Enhancing local government and other city stakeholders' capacity in developing local climate change adaptation action plan (RAD API) and implement Climate smart (USD 2,615,545)
Under this component, the program would perform scoping and feasibility studies for Pekalongan city in order to define and assess the interventions that could be implemented in that city. The program would notably build geo-tube embankments in two villages, for a total length of 1.5 km. It would also build individual and communal sanitation facilities in some villages. Other activities would include the construction of shrimp and fish ponds, mangrove

restoration, promotion of ecotourism, among others. The program would also establish a citywide knowledge management platform.

Component 3: Province Level - Strengthening vertical coordination by enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan, which in turn could foster better climate-related policy on climate financing and bottom-up planning (USD 31,074)

In this component, trainings would be provided to enhance the capacity of the provincial government to integrate climate change adaptation into local climate change adaptation action plans.

Component 4: National Level - Strengthening vertical coordination and collaboration between national and local government in climate adaptation context and Enriching knowledge, toolkits and methodologies coastal resilience for the national government (USD 123,285)

Under this component, the program would promote the use of a free web-based tool that calculates climate risk indexes that could be used by local governments to assess their risk indexes in a user-friendly way. The program would also provide inputs to the National Action Plan on Climate Change Adaptation.

ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Full Proposal

Country/Region: **Indonesia**
Project Title: **Building Coastal City Resilience to Climate Change Impacts and Natural Disasters in Pekalongan City, Central Java Province**
Thematic Focal Area: **Multi-sectors**
Implementing Entity: **Partnership for Governance Reform in Indonesia (Kemitraan)**
AF Project ID: **IDN/NIE/Multi/2017/1**
IE Project ID:
Requested Financing from Adaptation Fund (US Dollars): **4,169,998**
Reviewer and contact person: **Hugo Remaury**
Co-reviewer(s): **Saliha Dobardzic**
IE Contact Person: **Ms. Dewi Rizki**

Review Criteria	Questions	Comments 1st May 2019	Comments 20th May 2019
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 length of the proposal amount to no more than Fifty pages for the project/programme concept, including its annexes; or One hundred pages for the fully-developed project document, and one hundred	No. CAR1: Please reduce the length of the proposal annexes to 100 pages maximum.	CAR1: Not addressed. Please reduce the length of the fully-developed project document and the annexes to 100 pages maximum each.

	pages for its annexes?		
	3. 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 resilience?	Potentially. CR1: No initial scoping nor feasibility studies for the proposed concrete activities have been provided, thus hindering the assessment of their relevance and not ruling out potential maladaptation that might arise from the implementation of these activities (a possibility that was acknowledged in previous versions of the proposal). Please provide initial scoping and feasibility studies to validate the adequateness of the proposed activities for the identified climate threats and to assess hypothetical maladaptation that might arise from the interventions. CR2: Activities planned under outputs 1.2 and 2.2, which represent more than half of the requested funding, are not yet identified, bringing the case of unidentified sub-projects (USPs). In accordance with AFB.B.32-33.7, please i) provide an acceptable and justifiable justification on why such activities could not be identified prior to the submission of the funding application; ii) describe the process that will be applied during program implementation to ensure ESP compliance for the USPs; and iii) update the Environmental and Social Management Plan (ESMP). The ESMP	CR1: Not addressed. Please provide initial scoping and feasibility studies to validate the adequateness of the proposed activities for the identified climate threats and to assess whether maladaptation might arise from some of the proposed interventions. Such studies should weigh alternatives ecosystem-based adaptation approaches to tackle the observed impacts of climate change, notably for the proposed dredging activities. CR2: Not addressed. Please i) provide an acceptable and justifiable justification on why such activities could not be identified prior to the submission of the funding application; ii) explain in detail the process that will be applied during program implementation to ensure ESP compliance for the USPs; iii) describe this process implication in terms of budget, allocate clear roles and responsibilities and explain how Kemitraan will work with the executing entities to implement the ESMP.

		should describe the review process that will ensure that ESP-related risks are identified among USPs. It should i) include a detailed, budgeted process for ESP and GP compliance for each USP, ii) allocate clear roles and responsibilities for applying ESP and GP compliance processes to the USPs and iii) explain how the IE will work with the Executing Entities to implement the ESMP. CR3: Please describe how the program will ensure that proposed built infrastructures (e.g. coastal embankments, fish farms, latrines, eco-tourism sites, among others) will be constructed or established considering the climate risks described in the response table.	CR3: Not addressed. Please elaborate on how the program will ensure that proposed built infrastructures (e.g. coastal embankments, fish farms, latrines, eco-tourism sites, among others) will be constructed or established considering the climate risks identified.
	4. 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?	Potentially. CR4: Please describe, for both village and city levels, the process through which funding will be prioritized among the proposals that were submitted to the Community/Village Working Group (CWGP/VWG) and demonstrate that these processes are in line with both the ESP and Gender Policy (GP) of the AF.	CR4: Not addressed. Please describe, for both village and city levels, the process through which funding will be prioritized among the proposals that were submitted to the Community/Village Working Group (CWGP/VWG) and demonstrate that these processes are in line with both the ESP and Gender Policy (GP) of the AF.
	5. Is the project / programme cost effective?	Yes.	

	6. 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?	Yes.	
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund??	Yet to be demonstrated. CR5: Please explain the extent to which the proposed eco-tourism sites are considered as “preserving the protected areas”, thus being granted from an EIA exemption. CR6: Please demonstrate that individual and communal latrines are not located within and/or directly adjacent to a protected area, hence allowing them to be granted from an EIA exemption. CR7: Please provide the list of activities for which AMDAL/EIA are mandatory according to Appendix I Permen LH No.5 year 2012, and demonstrate that the geo-tube construction does not fall under such list. CR8: Please explain why aquaculture activities of less than 50 ha are	CR5: Please explain the extent to which the proposed renovation/construction of eco-tourism sites are considered as “preserving the protected areas”, thus being granted from an EIA exemption. CR6: Addressed, as per information provided in the response sheet. Please include the information provided directly into the relevant section(s) of the proposal. CR7: Not addressed. Please provide the list of activities for which AMDAL/EIA are mandatory according to Appendix I Permen LH No.5 year 2012, and demonstrate that the geo-tube construction does not fall under such list. CR8: Not addressed. As requested on CR7 above, please provide the list of

		exempted from EIAs. CR9: Given the various USPs (see CR2 above), please describe in the ESMP how the program will ensure compliance with all relevant national technical standards once the activities will be identified. CR10: As acknowledged in para 139, land tenure issues are likely to materialize during program implementation. Such risks should be acknowledged in the ESP risk identification and appropriate mitigation measures should be included in the ESMP. In addition, and since the proposal has many USPs, the ESMP should include provision to allow USPs to be screened against land tenure risks and should include appropriate mitigation measures that should comply with applicable land tenure laws or regulations.	activities for which AMDAL/EIA are mandatory according to Appendix I Permen LH No.5 year 2012, and demonstrate that aquaculture activities of less than 50 ha does not fall under such list. CR9: Not addressed. Given the various USPs (see CR2 above), please describe in the ESMP how the program will ensure compliance with all relevant national technical standards once the activities will be identified. CR10: Not addressed. Since land tenure issue are likely to materialize during project implementation, please include appropriate risk identification and mitigation measures in the ESMP, notably for USPs.
	8. Is there duplication of project / programme with other funding sources?	No.	
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	Yes.	

	10. 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?	Yes. CR11: Please confirm whether consultations with land-owner(s) took place, provide the documentation requested in Annex 5 of the AF OPG and describe how the outcomes of such discussions are reflected in the program design. CR12: Please describe how the program will engage with stakeholders, especially local communities, during implementation. This description should clarify how information, especially ESP-related (e.g. ESMP etc.) will be disclosed in a culturally appropriate manner and how local communities will be consulted and will participate into the implementation of activities.	CR11: Not addressed. Please provide the provide the documentation requested in Annex 5 of the AF OPG with respect to land-owners and describe how the outcomes of such discussions are reflected in the program design. CR12: Not addressed. Please clarify how information, especially ESP-related (e.g. ESMP etc.), will be disclosed in a culturally appropriate manner during the project implementation.
	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	Yes.	
	12. Is the project / program aligned with AF's results framework?	Yes.	
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	Yes.	
	14. Does the project / programme provide an overview of environmental	Yes. However, adequate risk identification for the USPs at this stage is not possible (see CR2 above).	

	and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	CR13: Please demonstrate compliance of the proposal with the Guidance document for Implementing Entities on USPs https://www.adaptation-fund.org/wp-content/uploads/2019/04/AFB.B.32-33.7_Compliance-with-ESP_Update-of-PPR_and_Guidance-for-USPs_revised.pdf. CR14: The proposal includes contradictory information with respect to involuntary resettlement risk (principle 8). Given the acknowledged risk related to land tenure, please update the risk identification section and the ESMP to further demonstrate compliance of all program activities with ESP principle 8 (see section "Principle 8: Involuntary Resettlement" of the Guidance document for Implementing Entities on compliance with the AF ESP available at https://www.adaptation-fund.org/documents-publications/operational-policies-guidelines).	CR 13: Not addressed. Please demonstrate compliance of the proposal with the Guidance document for Implementing Entities on USPs https://www.adaptation-fund.org/wp-content/uploads/2019/04/AFB.B.32-33.7_Compliance-with-ESP_Update-of-PPR_and_Guidance-for-USPs_revised.pdf CR 14: Given the risk of involuntary resettlements related to land tenure, please update the risk identification section and the ESMP to further demonstrate compliance of the proposal with principle 8 of the ESP (see section "Principle 8: Involuntary Resettlement" of the Guidance document for Implementing Entities on compliance with the AF ESP available at https://www.adaptation-fund.org/documents-publications/operational-policies-guidelines).
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?	Yes.	

	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	Yes.	
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?	Yes.	
	2. Are there measures for financial and project/programme risk management?	Yes.	
	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?	Yes. However, the ESMP needs to be updated at per the outcomes of the above CRs, notably CR2. CR15: Please note that according to the AF OPG, "*The results of the environmental and social screening and a draft environmental and social assessment, including any proposed management plan, shall be made available for public consultations that are timely, effective, inclusive, and held free of coercion and in an appropriate way for communities that are directly affected by the proposed project/programme.*". Please ensure compliance with such requirement.	CR 15: Not addressed. Please ensure compliance with the AF OPG that require that "*The results of the environmental and social screening and a draft environmental and social assessment, including any proposed management plan, shall be made available for public consultations that are timely, effective, inclusive, and held free of coercion and in an appropriate way for communities that are directly affected by the proposed project/programme.*"

		CR16: Please clarify the grievance mechanism to include that grievances that may also be addressed directly to the AFB Secretariat at the address mentioned in the ESP (para 34).	CR 16: Addressed, as per information provided on page 83.
	4. Is a budget on the Implementing Entity Management Fee use included?	Yes.	
	5. Is an explanation and a breakdown of the execution costs included?	Yes.	
	6. Is a detailed budget including budget notes included?	Yes. CR17: Please fill in the total amounts for each outcome and output. CR18: As per AF guidance on costs and fees (https://www.adaptation-fund.org/generic/costs-and-fees/) , please charge activities 2.1.1.1, 2.2.1.1., 2.2.1.6 under the project execution costs.	CR 17: Addressed, as per information provided on page 109-115. CR 18: Not addressed. Please ensure full compliance with AF guidance on costs and fees and rectify inconsistencies regarding IE fees (different amounts are provided).
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	Not yet. CR19: Although the proposal remains vague with respect to the exact number of women participating into the program activities, p.93 indicates that only 10% of the total direct beneficiaries will be women. Please provide an initial gender assessment to comply with the AF GP (see Guidance document for Implementing Entities on compliance with the Adaptation Fund	CR19: Not addressed. Please provide an initial gender assessment to comply with the AF GP (see Guidance document for Implementing Entities on compliance with the Adaptation Fund gender policy available at: https://www.adaptation-fund.org/documents-publications/operational-policies-guidelines) and explain how the targets

		gender policy available at: https://www.adaptation-fund.org/documents-publications/operational-policies-guidelines) and explain how the targets set in the program are reducing unequal participation and representation of men and women compared to the baseline described in the initial gender assessment. CR20: Some of the gender-sensitive indicators do not have corresponding targets. Please set targets for gender-sensitive indicators.	set in the program are reducing unequal participation and representation of men and women compared to the baseline described in the initial gender assessment. CR 20: Not addressed. Please set targets for gender-sensitive indicators.
	8. Does the M&E Framework include a break-down of how implementing entity fees will be utilized in the supervision of the M&E function?	Yes. CR21: Please describe where each of the "type of M&E activities" listed p.73 and 74 will be charged in the program budget, fees and costs and ensure compliance with AF guidance on fees and costs (https://www.adaptation-fund.org/generic/costs-and-fees/).	CR21: Not addressed. Please ensure compliance of M&E-related costs with AF guidance on fees and costs (https://www.adaptation-fund.org/generic/costs-and-fees/).
	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?	Yes.	
	10. Is a disbursement schedule with time-bound milestones included?	Yes.	

Technical Summary	The program objective is to build coastal resilience to climate change impacts and natural disasters with a particular focus on pro-poor adaptation actions that involve and benefit the most vulnerable communities of the target area. It plans to reach this objective through a combination of hard and soft adaptation measures, distilled along different governance level (national, provincial, city and village level), reflected respectively in each of the four program components. Adaptation interventions will include constructions of embankments, restoration of mangroves, aquaculture activities, renovating eco-tourism infrastructures, and construction of latrines. The project will build capacity of different stakeholders to integrate climate chance adaptation into various planning processes. The initial review raised several issues related to the provision of initial scoping and feasibility studies to validate the adequateness of the proposed activities and assess hypothetical maladaptation and to address issues related to the presence of unidentified sub-projects (USPs) and to compliance with both the AF ESP and GP. The final review finds that the fully-developed proposal document has not addressed most of the requests and does not provided sufficient information at this stage. The following observations are made: 1. The proposal should ensure compliance with AF guidance on unidentified sub-projects; 2. The proposal should further demonstrate how the program interventions would meet national legislation regarding Environmental Impact Assessments (EIAs); 3. The proposal should further comply with AF ESP and GP, and AF guidance on costs and fees.
Date:	5/20/2019

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:	REGULAR Project/Programme
Country/ies:	INDONESIA
Title of Project/Programme:	*Building Coastal City Resilience to Climate Change Impacts and Natural Disasters in Pekalongan City, Central Java Province*
Type of Implementing Entity:	National Implementing Entity
Implementing Entity:	Kemitraan (The Partnership for Governance Reform)
Executing Entity/ies:	Kemitraan (The Partnership for Governance Reform)
Amount of Financing Requested:	4,127,065 (in U.S Dollars Equivalent)

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.

Indonesia and Climate Change Impact

1. Indonesia is among the largest archipelago in the world which constituted of over 18,000 islands (both populated and not populated islands) with around 230 million populations. Its vast coastline that stretches over 18,000 km (in total) is the home for almost 60% of Indonesian population[1]. Scientists had observed changes in climate indicators in Indonesia over the past several decades, and concurrently made projection using AR-4 IPCC model to assess the future changes with results as below[2]:
    - Average surface temperature increases will reach 0.8°C-1°C until 2020-2050 relative to the final climate period in the 20th century.
    - Sea surface temperature increases will reach 1-1.2°C by 2050 relative to 2000.
    - In the period of 2001-2100, there will be significant changes (especially in 2080s period) with a tendency of rainfall increase in wet season and a decrease in transition months.
    - Sea level rise (SLR) is projected to reach 35-40 cm in 2050 relative to the value of 2000. The maximum SLR may reach 175 cm in 2100.

2. Considering its geographic traits as an archipelagic country that consists of not only large but also great numbers of small islands, changes in the above indicators could potentially bring a significant impact and affect diverse development sectors in Indonesia, and consequently affecting the area's

[1] Akhmadi et.al., 2012, *Impact of Climate Change on Households in the Indonesia CBMS Area*, SMERU Research Institute
[2] Bappenas, 2010, *Indonesia Climate Change Sectoral Roadmap*

sustainability. The risks are deemed as higher for coastal area and population as a result of close exposure to coastal-related climate change impacts in the forms of climate-related disaster events, coupled with their low socio-economic capacity.

3. In March 2015, Indonesian poverty rate reaches 11.22%[3]. Poverty is claimed as rural phenomenon considering that 60% of the poor are living in rural areas; where most of the poor were identified as living in Java Island[4]. Research conducted by the Ministry of Marine and Fishery shows that from a total of around 41 million poor population of Indonesia, over 13.5% of them are living in coastal area; they live in poverty level with minimum services to basic infrastructure[5]. Exposed to sea level rise, high tide, extreme weather and also the subsequent impact such as salt water intrusion; the coastal population often does not have adequate resources to face those risks, leaving them highly vulnerable to climate change impacts.

Climate Change Impact Affects the Economic Sustainability of North Coast of Java

4. North Coast of Java is one region that have repeatedly affected by climate change impact. Sea level in this region is rising between 6-10 mm/year[6]. Despite SLR projection in this region is not the highest in Indonesia, but its high population density and rapid urban development in comparison to other coastal area has placed North Coast of Java as highly vulnerable to climate change impact. As the major and busiest corridor for human and logistics mobilization in Java as well as one of the largest rice producer regions in Indonesia, disruption to this region will hinder economic activity in the island. For instance, flash flood and coastal flooding in 2014 (in Central and East Java region of North Coast Java) had inundated over 40,000 Ha of paddy field and damaging thousands of hectares of brackish water fish pond, causing failed harvesting in those land; imposing significant economic cost to the farmers and fishermen[7]. Another coastal flooding in mid-2016 (in Central Java area of North Coast Java) have caused 50-120 cm inundation in the major road access, leads to a significant delay in logistics distribution to several industrial area in central and eastern Java; crippling the industrial activity[8].

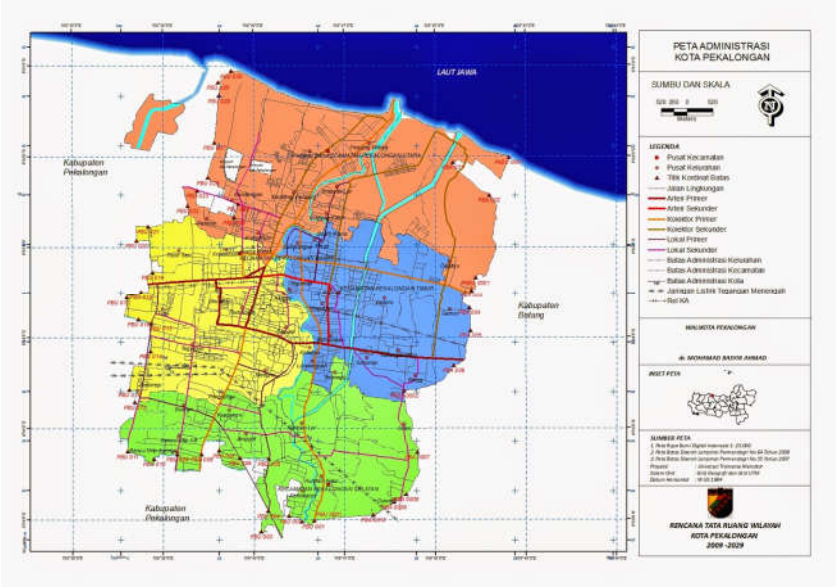


Figure 1. Administrative Map of Pekalongan City

[3] Indonesia Central Bureau of Statistics, 2015
[4] Akhmadi et.al., 2012
[5] Secretariat of Republic of Indonesia Vice President, 2011, *Presentation on Inventory on Poor Household in Coastal Area/Fishermen*
[6] Suhelmi, 2012, *Assessment on the Vulnerability of Semarang Coastal Area to Sea Level Rise by Utilizing Composite Vulnerability Index*
[7] Kompas, 2014, *Food Production is At Risk (online-reading)*
[8] Kompas, 2016, *When Nature Responds to Human Greed (online-reading)*

Geographical, Social and Economic Condition of Pekalongan City

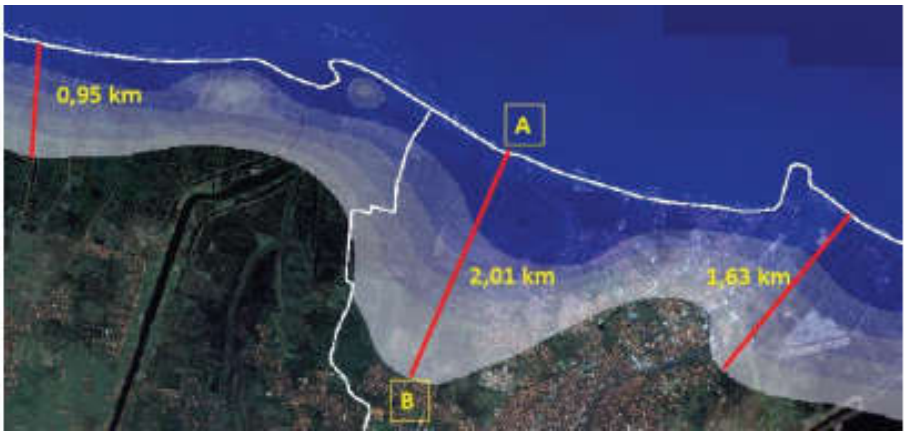
5. The City of Pekalongan comprises of 4 sub-districts with a total administrative area of 45.25 km^2 and a total population of 296,533 people, where 31.3% of the population lives in Pekalongan Barat sub-district[9]. In 2015, 8.09% of Pekalongan population lives below poverty level, which in this particular city is set at Rp. 352,717 (27.13 USD)/capita/month. This is a slight increase in comparison to 2014, where the poor population was accounted for 8.02% of the population[10]. Geographically, the city is located in lowland plain with an average height of 1 m above sea level (a.s.l) and highest point within the city at 6.5 m a.s.l.

6. Seven rivers flow through the city and disembogue into the Java Sea, with Pekalongan River as the main river. There are several rivers that often overflow during high intensity rain event, namely Pekalongan River, Bremi River and Bangger River; causing 50-100cm inundation in many communities, and at times forcing the population to be evacuated for several days. This flash flood is considered as a recurring disaster in Pekalongan City.

7. Its economic state in 2014 shows that Manufacturing Industry, Trading and Retail, and Construction are three economic sectors with the highest contribution for the city's Gross Regional Domestic Product (GRDP), with GRDP growth for each sector ranging between 4-6% from 2013. Looking at the GDRP contributor, it is suitable to see that 38.46% and 28.14% of the population works in Industrial and Trade sector respectively. This also attributed to the fact that Pekalongan City is one of the main 'Batik' producers in Indonesia that not only supply national but also international market. As part of the largest rice producer region, Agriculture, Forestry and Fisheries sector is also one of the main economic sectors in Pekalongan City; ranks 6th on the GDRP contribution in 2014 with over IDR 400 million of income, and attracts 4.65% of the population to work in the said sector[11].

Changes in Climate Change Indicators in Pekalongan City

8. **Historical trend shows that there is a 0.6-0.8 cm rise in sea level annually.** In 2030, this number is projected to increase up to 22.5±1.5 cm annually; and in 2100, sea level rise in Pekalongan City is projected to reach 0.8 m and consequently affect 913.8 Ha area within 1.63-2.01 km distance from the city coastline. According to Pekalongan City Agriculture and Marine Agency, the city coastal vulnerability index is at 2.4 from a maximum scale of 3[12]. The impact of coastal flooding will not only affect coastal-related sector such as fishery and tourism, but might also creating domino effect to other development sectors; posing an imminent threat to the sustainability of the city.



[9] Pekalongan Bureau of Statistics, 2015
[10] Pekalongan Bureau of Statistics, 2015
[11] Pekalongan Bureau of Statistics, 2015
[12] DKP, 2008 in Pekalongan City Government, 2011, *Pekalongan City Risk Profile*

Figure 2. Projected Inundation in Pekalongan City Coastal Area in 100 Years Period (Pekalongan City Government, 2011)

9. **The same study also shows how the precipitation pattern and level in Pekalongan City have change in 40 years period.** The peak rainy season is shifting and occuring in a shorter period but with an increasing intensity. In future time, the peak rainy period is projected to become shorter and occuring in November-January period, which could potentially leads to an increase in flooding intensity and frequency. Meanwhile dry season will occur in a longer period with a lower precipitation intensity that could cause prolong drought and water scarcity subsequently[13].

10. Other changes that was assessed is surface and sea surface temperature in North Coast of Java. Historically, there is only slight increase in the surface temperature, with 0.004-0.04ºC increase annually. Yet projection shows that in the next 100 years, there will be 0.4-4 ºC increases in surface temperature. This is believed to **then affect the sea surface temperature at coastal area** in a rate of 0.05-0.1ºC annually, prompting changes in the surrounding ecosystem[14].

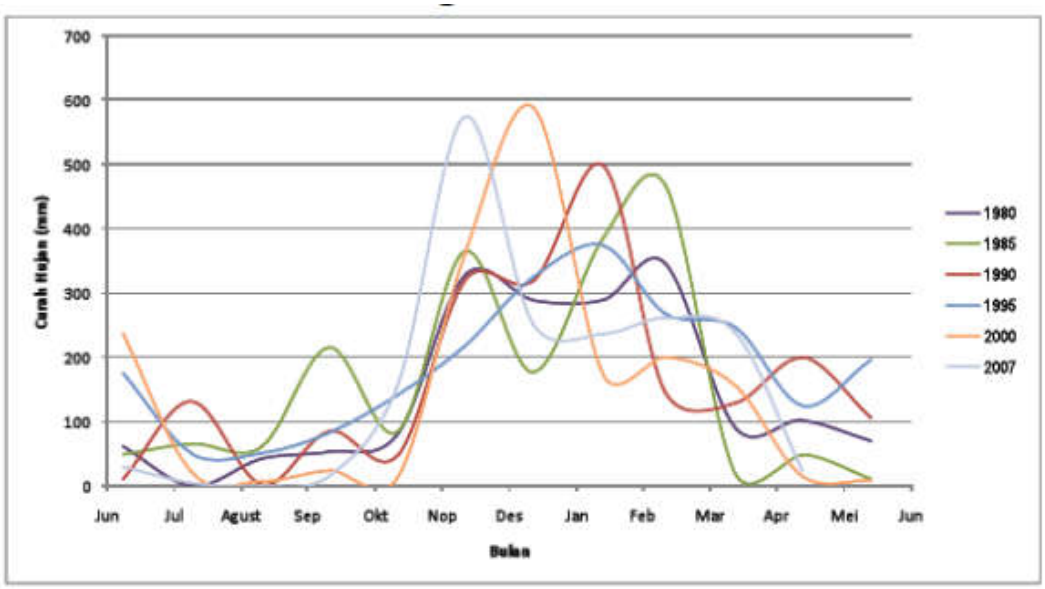


Figure 3. Precipitation Pattern in Pekalongan City in 1980-2007 Period (Pekalongan City Government, 2011)

What is The Problem: Pekalongan City is at Risks from Climate Change Impact

11. Considering its geographical and hydrological attributes, **Pekalongan City is no stranger to climate change impact in the forms of climate-disaster events.** The city has a history of recurring events of coastal flooding and flash flood. Added with extreme weather events and prolonged drought, Pekalongan population have suffered significant damage from this climate-disaster events that goes beyond physical structure damage and inundated productive land in the coastal area, but they also imposed by socio-economic cost.

12. **Coastal flooding is one of the most frequent risks faced by Pekalongan City.** The coastal community experiences daily coastal flooding for the past 10 years. During high tide, the affected communities will be inundated for a period of 2-4 hours. Houses, public facilities, roads and also paddy field are all overflowed by the flood. The flood intensity is deemed as increasing each year. In 2012, coastal flooding inundated 8 communities and causing significant damages to ports and settlement area (and the infrastructure within) with water level reaches 110 cm, while also affecting 100 Ha of

[13] DKP, 2008 in Pekalongan City Government, 2011, *Pekalongan City Risk Profile*
[14] DKP, 2008 in Pekalongan City Government, 2011, *Pekalongan City Risk Profile*

paddy field; whilst in 2016 the affected area is increasing to 10 communities and 197,5 Ha of paddy fields. Historical record shows that the height of coastal flooding in 2016 is considerably higher compared to the previous years; prompted the Mayor to declare Pekalongan City as in emergency state to coastal flooding[15].

Climate Change Vulnerability Index of Pekalongan City

13. To validate and further emphasize the correlation between the aforementioned risks to climate change impact, a study was conducted in 2012 on Pekalongan City Climate Vulnerability by SMERU Research Institute. The study assesses the exposure of Pekalongan City to three types of climate-related disasters frequently occurred in the city (flash flood, coastal flooding and landslides), the area's human and ecological sensitivity, and their adaptive capacity.

The result shows that more than 25% and 10% of Pekalongan City population are exposed to flash flood and coastal flooding due to SLR in that order. With respective climate exposure index to flash flood and coastal flooding of 0.39 and 0.31, **Pekalongan Utara sub-district is assessed as the most exposed area to both climate-related disaster events; putting them at a total Climate Change Exposure Index of 1[16].**

Table 1. Climate Change Exposure Index of Pekalongan City (SMERU, 2012)

Sub-district	Flash Flood	Coastal Flooding from SLR	Landslide	Exposure Index
Pekalongan Barat	0.2365	0.0067	0.0994	0.3426
Pekalongan Timur	0.0851	0.0303	0	0.1154
Pekalongan Selatan	0	0	0.2812	0.2812
Pekalongan Utara	0.3900	0.3100	0.300	1

14. **Pekalongan Selatan is the most sensitive sub-district with 0.60 sensitivity index**, due to the fact that the area is the center for batik industry and agricultural land in the city. Livelihood, ecology and population are three aspects that being considered in measuring Sensitivity Iindex. Based on the sensitivity assessment, As one of the major industries in Pekalongan, disruption to the sustainability of Batik industry could affect the economic condition of batik workers in particular and the city's income in general. Climate-related disaster could affect batik industry either by flooding the industrial area or contamination of immersion water from flood water. Meanwhile inundation from flash flood in agricultural area could leads to a severe failed harvesting. The second most sensitive sub-district is Pekalongan Utara with 0.48 sensitivity index attributed to the fact that majority of the sub-district's population works in fisheries sector, which at risk of economic losses from the loss of brackish water fish pond, damage to their house as well as changing fishing pattern and location[17].

Table 2. Climate Change Sensitivity Index of Pekalongan City (SMERU, 2012)

Sub-district	Livelihood at Risk	Ecology at Risk	Population at Risk	Sensitivity Index
Pekalongan Barat	0.06	0.00	0.16	0.21
Pekalongan Timur	0.02	0.14	0.22	0.38
Pekalongan Selatan	0.23	0.13	0.24	0.60
Pekalongan Utara	0.18	0.05	0.25	0.48

15. **Pekalongan Barat has the lowest Adaptive Capacity Index of 0.0010 which indicates the area is the most adaptive amongst other sub-districts[18].** For adaptive capacity index, the calculation take account of aspects that are deemed as most needed for facing and recovering from climate-related

[15] Marfai et.al., 2013, *Spatial Modelling of Coastal Flooding Inundation Based on Climate Scenario and Its Impact on Pekalongan Coastal Area*
[16] Akhmadi et.al., 2012
[17] Akhmadi et.al., 2012
[18] Akhmadi et.al., 2012

disaster events, comprising of infrastructure, technology, health facilities, institutions and economic conditions.

Table 3. Climate Change Adaptive Capacity Index of Pekalongan City (SMERU, 2012)

Sub-district	Infrastructure	Technological Information	Health	Institution	Economic	Adaptive Capacity Index
Pekalongan Barat	0.2600	0.1389	0.1900	0.2000	0.2100	0.0010
Pekalongan Timur	0	0.0883	0.0382	0.0363	0.0946	0.7426
Pekalongan Selatan	0.0469	0.0073	0	0.0557	0.1409	0.7492
Pekalongan Utara	0.2414	0.0315	0.0331	0.669	0	0.6270

16. **Pekalongan Utara** is **the most vulnerable sub-district** to climate change with 0.72 index. The high vulnerability of Pekalongan Utara is due to the fact that the area is highly exposed to climate change impact, particularly coastal flooding; while also has a relatively high sensitivity and low adaptive capacity. Meanwhile its high sensitivity and low adaptive capacity is the major factor for Pekalongan Selatan's vulnerability, despite the fact that the area has a relatively low exposure index.

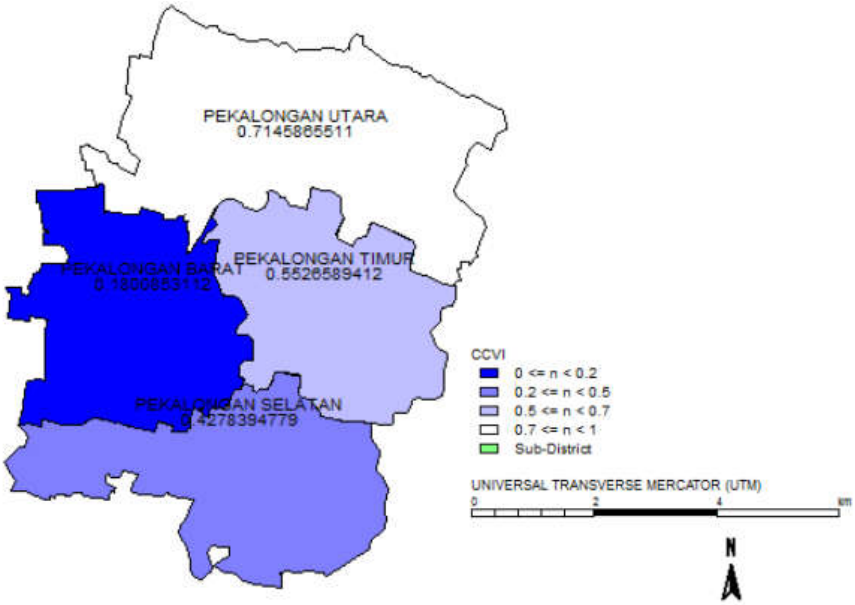


Figure 4. Climate Change Vulnerability Index of Pekalongan City (SMERU, 2012)

Climate Risks are Detrimental to Socio-Economic-Ecological State of Pekalongan City

17. **It was projected that in 2050, the maximum inundation water level could reach 135 cm.** This could cover up to 1,295 Ha of residential area, 507 Ha of paddy field and 230 Ha of wetland and fish pond; covering 51% of the Pekalongan administrative area[19], where Pekalongan Utara will experience the most severe impact from this event because of its geographical location in the coastline of Pekalongan City. The previously mentioned sea level rise projection in 2100 that would affect area up to 2.01 km from the city coastline further highlights the vulnerability of Pekalongan Utara[20]. Pekalongan Utara population that predominantly works in fishing industries will be highly affected economically from this; forcing them to alter their fishing practices (both those who fishes in the sea and cultivating fish pond) and adapting to recurring inundation in their neighbourhood. Overexploitation of groundwater further

[19] Marfai et.al., 2013, *Spatial Modelling of Coastal Flooding Inundation Based on Climate Scenario and Its Impact on Pekalongan Coastal Area*
[20] DKP, 2008 in Pekalongan City Government, 2011, *Pekalongan City Risk Profile*

exacerbated the flood intensity and impacts by causing land subsidence in the coastal area. Salt water intrusion have been experienced by those who rely on ground water for their daily needs, for instance in Panjang Wetan community (Pekalongan Utara Sub-district)[21].

18. As mentioned above, these climate-related risks will not only damaging the settlement and infrastructure but also pose a severe threat to the area's food security, as well as other area that depends on Pekalongan for their staple food supply. Losses from the inundation of the paddy field are predicted to extend between IDR 19.33 and 24.10 billion (USD 1.486.923 – 1.853.846) for a range of affected paddy field area between 945-1,339 Ha[22]. Another study conducted on loss and damage due to coastal flooding in Bandengan Community (Pekalongan Utara Sub-district) shows that the said community experience over IDR 188 billion (USD 14.461.5380 loss and damage over the period of 2000-2016. This number encompasses the loss of agricultural land productivity, infrastructure damage as well as loss of income and increasing household expenses due to the flooding events[23].

Figure 5. Pekalongan City Coastal Flooding-prone Map Year 2016 (Pekalongan City Government, 2017)

Figure 6. Permanently Inundated Agricultural Land in Pekalongan Utara (Site Observation, 2017)

[21] Akhmadi et.al., 2012
[22] Kasbullah&Marfai, 2014, *Spatial Modelling of Coastal Flooding Inundation and Assessment on Potential Loss on Paddy Field Agricultural Land, Case Study: Coastal Area of Pekalongan District*
[23] Bintari, 2016, *Loss and Damage – Climate Change Impact in Coastal Area of Pekalongan City*

Figure 7. Inundated Settlement Area in Pekalongan Utara (before Rainfall) (Site Observation, 2017)

What have been done: Pekalongan City Efforts to Address Climate Risks

19. Considering the above climate-related risks and their domino effect faced by Pekalongan, addressing the risks become of importance to the city. Diverse measures have been taken by local government of Pekalongan City to address this issue; both conducted self-sufficiently as well as with the assistance from third party. Self-sufficiently, the local government has developed evacuation plan annually for the purpose of community mobilization during flooding. They have also implemented short-term measures by providing economic assistance in the form of fish seed and fish nets, as well as physical assistance such as raising embankments and build productive roads in the embankments area. The local community have also implementing voluntary adaptive measures, albeit a simple one due to economic restraints; such as: raising their floor levels, changing livelihood, river cleaning etc. Yet these measures were conducted partially, without a comprehensive planning that could relate the root cause of the issue to the implemented activities, so that the results are slightly ineffective, especially when considering long-term perspective.

20. Pekalongan City had also cooperated with different local and international NGOs as well as development partners in this climate change issue. PAKLIM-GIZ had assisted the city in developing their GHG Emission Profile, Risk Profile and also deriving the relevant Integrated Climate Change Strategy (ICCS); in which the latter is claimed as successfully integrated to the existing Mid-Term Development Plan of Pekalongan City. However in actual, the integration is limited to inserting the actions into development plan matrix, without consideration of climate change as the strategic development issue for the city; losing the actual meaning of mainstreaming process. ACCCRN Indonesia (a program under Mercy Corps Indonesia) further assist the city in managing the issue by providing capacity building for both the community and local government to enhance their awareness and knowledge on this matter. By doing so, the program expected that the city could develop the corresponding adaptation activities.

21. During ACCCRN implementation period, a city climate working group was developed. The said group is a multi-stakeholder group, comprises of not only local government representative, but also academicians, community member and local NGOs. Throughout its lifetime, city climate working group was considered as had been able to provide local government with sound input and recommendation particularly in providing climate perspective when discussing development issue. However, one glaring weakness of the group is how the member was appointed by name, instead of institution thus their involvement in the group can somewhat diminish. These lessons learned are considered in developing the proposed program; boosting its strengths and tackle its weaknesses.

22. In 2014, the Government of Indonesia had published their National Action Plan on Climate Change Adaptation (RAN-API), a document outlining adaptation strategy and program that will be implemented nationally by the country for a 5-year period. RAN API is expected to be mainstreamed into provincial and local level, in which adaptation plan made at both level should reflect and in harmony with the content of RAN API, while at the same time aiming to address climate-related risks in the respective area.

23. At this moment, the RAN API Secretariat is in the process of tagging adaptation activities at national level, whereas the locus area for the said activities will be at city/district level. Ensuring a synchronize local-provincial-national adaptation plan would potentially assist the city in tapping adaptation-related funding that budgeted at the national level. Not to mention the fact that a synchronize activities will assist the national government in assessing the effectiveness of RAN API implementation. Planning can be made at national level, but the implementation would almost always be at local level, as the party that directly facing the risks. Hence developing an effective adaptation activity at local level is essential here.

24. In relation to RAN API, Pekalongan City also has the benefit being chosen as one among 15 pilot locations of RAN API; putting them at the forefront for adaptation-related activities. Pertinent to this matter, mainstreaming process that will be conducted under this program is expected to set an example on how to synchronize adaptation plan and program at four government levels, as well as mainstream the said plan to the local development plan. Lessons learned from the mainstreaming process can be disseminated to other pilot locations.

IDENTIFYING THE GAP

25. The inundated household has no access to adequate sanitation facilities since their latrine is also inundated. City government has limited budget to provide this access to the affected community, which then prompting open defecation practices (often to water body) in some communities. This unsanitary practices coupled with high frequency of coastal flooding have increase the potential of water-borne disease; leaving the community susceptible to health issue.

26. In addition, the dense coastal settlement area is not serviced by water piping from the state-owned water company, prompting the community to rely heavily on groundwater. The combination of this groundwater exploitation with land subsidence from significant coastal land use change over the years could exacerbate the impact of coastal flooding in coastal area. These aspects are among the identified non-climatic barrier for the program achievement. The design of the proposed program had considered this potential barrier by developing City Climate Risk Assessment and the subsequent action plan early in program implementation; while also involving BAPPEDA as the leading sector for development plan within the program. The Climate Risk Assessment and Action Plan will entail recommendation for climate-resilient development and spatial plan; to reduce massive land use change into built environment in coastal area. Meanwhile BAPPEDA and other relevant government institutions will be equipped with knowledge and information on the correlation between land use change, land subsidence and coastal flooding risk. At the moment, city officials that are involved in the proposal development had understood the connection between land subsidence and coastal flooding.

27. Adaptation measures taken in Pekalongan City to address climate change issue are somewhat lacking in evaluation, in which derives from the non-existent of a comprehensive climate risk assessment. A such-complex issue as climate change needs across-the-board measures to be able to address the issue effectively, and from its roots. Considering that most of the risks are deriving from changes in climate indicators, hence it is of importance to develop climate risk assessment prior to intervening with different projects, so that the projects results can be tracked back to the initial level of risk.

What need to be done?

28. It is this gap that this proposed program tries to bridge, by implementing comprehensive approach encompassing technical assessment, planning, intervention, and also monitoring and evaluation; which will be supported by framework and measures to fortify institutional mechanism on climate adaptation

and resilience issue. In practical the program components will be started with identifying the roots of the problem (climate risk assessment) and followed by developing and implementing the adaptation plan (in the form of intervention projects) which results can be track back to the problem; while simultaneously building stakeholders' capacity and advocating climate resilience policy along the course of the program.

Introducing our work

METHODS

29. This program will **focus on building resilience to climate change impacts in Pekalongan City**, one of the coastal cities in Central Java Province (in North Coast of Java region), by **employing interventions in the form of not only hard structure but also soft structure**; touching not only physical interventions but also building their socio-economic and institutional capacity.

30. This approach will be taken at **4 governance level; starting from community (community) level, city level, provincial level up to the national level**; to ensure the interlink of plan and actions across those different level. Capacity building and developing adaptation plan as well as implementing the corresponding plan will be the fundamental of the approach. Meanwhile at provincial and national level, mainstreaming and advocacy will be the primary component. **Synchronization of adaptation plan will be at the core of the approach at every level.**

31. Climate risk assessment process will be done at Pekalongan City utilizing **Vulnerability Index Data Information System (Sistem Informasi Data Indeks Kerentanan/SIDIK), a vulnerability assessment tool developed by the Ministry of Environment and Forestry**. SIDIK is a web-based data and information system that can be used to assess the vulnerability level of an area and/or sector to climate change impact. SIDIK has a standardized data and methodology which enable the user to compare vulnerability level across different areas in Indonesia. Despite its standardized character, SIDIK acknowledge that every region has different level of data, type and accuracy; thus the system provides space for adjustment. SIDIK user could use a more accurate data and indicator for the system that is available in their region.

32. For the purpose of this program, given that the system is initially built for land-based region, adjustment will be made to SIDIK. **To be able to capture the vulnerability of Pekalongan City with its coastal characteristics**, vulnerability indicator within SIDIK system need to incorporate coastal-related data. The adjustment will then provide input for SIDIK developer to improve their system by including coastal attributes. This future improvement will be essential seeing how coastal cities/districts are spread out across Indonesian coastline.

33. Furthermore, a **Participatory Climate Risk Assessment will also be applied**. The initial step of the program will be establishing community working groups delivering some series of trainings to build their knowledge on climate change adaptation and coastal resilience. This is expected to assist them in developing much sounder climate risk assessment. This two-tier risk assessment at community and city level will be done to ensure a synchronized adaptation planning at both level, which does not happen often in the past; the city government project at times did not fully serve the actual community needs.

34. Having taken into account the existing Climate Change Vulnerability Index, climate risks faced by the area, as well as losses imposed to the respective community, hence this program **will specifically address the risks of coastal flooding** (and its secondary impact such as loss of livelihood, health disease etc) in the coastal area of Pekalongan City which historically imposed by climate-related risk in the form of coastal flooding and abrasion. The coastal area falls under the administrative area of Pekalongan Utara sub-district. Pekalongan Utara is the largest sub-district in Pekalongan City with a

total administrative area of 14.88 km2 that inhabited by 78,470 population (in 2014), the second highest population number amongst sub-districts in Pekalongan City. From that number, 50.2% are women[24].

35. Pekalongan Utara constitutes of 7 Kampongs; in which Panjang Wetan Kampong is the most vulnerable to flash flood, while Krapyak Lor is the most vulnerable to coastal flooding[25]. In addition to 7 communities within Pekalongan Utara Sub-district, the community level scope for this program will also include Pasirkraton Kramat Kampong in Pekalongan Barat Sub-district that assessed as prone to coastal flooding. The significance of addressing coastal flooding risks in these communities further underlined by the city government publication of Pekalongan City Coastal Flooding-prone Map 2016 (Figure 5) which shows how the **all of the Kampongs targeted in this particular program are categorized as highly prone to coastal flooding**.

36. Seeing these risks faced by the area, resilience building process in this proposed program will be **focusing its work in strengthening food security, enhancing community livelihood while simultaneously preserving the environment**; touching not only practical aspect but also promoting policy. Sustainable development principle will be held at core here to ensure efforts being done at one sector will not create negative impact and incremental losses in the other.

37. In view of this multifaceted issue, the proposed program framework will be instilled by **multidisciplinary and iterative process**, with a series of assessment, study and activities to be derived from. Accordingly, the program will **not only emphasizing on building hard structure, but also strengthen soft structure** (institutional realms, including capacity building) in addressing the issue; creating a paradigm shift from the conventional approach that mostly revolving around building infrastructure that could only serve short-term purposes to newer perspective that allow for continual development and evaluation. At the core of this framework is participatory and collaborative approach by fostering multi-stakeholder involvement, to bring about different interest on the issue and resolve it amicably to achieve common goals.

Project / Programme Objectives:

List the main objectives of the project/programme.

Goal

38. This project is specifically designed to **Building Coastal City Resilience to Climate Change Impacts and Natural Disasters**, with a particular focus on pro-poor adaptation actions that involve and benefit the most vulnerable communities in the city. We believe that the key to do so is to **enhance the capacity of coastal community** in implementing climate change adaptation actions.

Objectives:

39. We understand that one of the important keys for successful climate change adaptation is the availability of reliable information which is derived from accurate and high-precision data. Therefore, this program aims at **developing Climate Change Information System** based on the various datasets related to climate change indicators at various areas in Pekalongan City. The aim is to **develop resilient livelihood strategies**, by combining formal scientific data and **relevant local knowledge and wisdoms**.
40. This program also sees the importance of **involving and engaging local government and city stakeholders in developing Local Climate Adaptation Action Plan** and **implement climate smart actions**. The proposed program will conduct capacity building activities for local government and city stakeholders to develop the Plan and to implement climate smart actions.
41. The program will strengthen vertical coordination by enhancing provincial government's capacity in **mainstreaming climate change adaptation and resilience into Central Java Province**

[24] Pekalongan Bureau of Statistics, 2014
[25] Akhmadi et.al., 2012

development plan, which in turn could foster better climate-related policy on climate financing and bottom-up planning.

42. The program will also strengthen vertical coordination and collaboration between national and local government in climate adaptation context and Enriching knowledge, toolkits and methodologies coastal resilience for the national government

Table 4. Alignment with the Adaptation Fund Results Framework

Project/Programme Components	Expected Outputs	Expected Outcomes	Alignment with the Adaptation Fund Results Framework	Amount (US$)
1. Enhancing coastal community capacity in developing and implementing Climate change adaptation actions and climate change information system	1.1.1. Climate working group established and functioning in each of the 8 target *kelurahan* 1.1.2. Enhancing coastal community capacity in developing *kelurahan's* information system and implementing the ensuing climate change adaptation actions	1.1. Enhanced capacity of local actors in identifying, initiating, strengthening, and escalating community-based actions to address climate risk and natural disaster; including capacity in integrating the actions into *kelurahan* development plan	AF Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	**112.200** **129.635**
	1.2.1 Agreed adaptation action in each *kelurahan* implemented (i.e. mangrove restorationsupporting farmers group in implementing vennamei shrimp and *bandeng* (milkfish) aquaculture farming, and also individual and communal latrine)	1.2. Enhanced local community adaptive capacity, including developed livelihood strategies to face climate change impacts and natural disasters	AF Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level local level AF Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	706,.338
2. Enhancing local government and other city stakeholders' capacity in developing Local Climate Change Adaptation Action Plan (RAD API) and implement Climate Smart Initiatives	2.1.1. City climate working group reactivated 2.1.2. RAD API developed based on City Climate Risk Assessment and Climate Coastal Impact 2.1.3. Strategy to integrate CCA into local government planning processes (annual work plan or	2.1. Enhanced local government and other city stakeholders' capacity in developing climate risk assessment and in utilizing the results to develop RAD API	AF Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	**50.384**

	mid-term development plan of city) is developer		AF Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors AF Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	**29.092**
	2.2.1 Innovative and collaboration adaptation actions are implemented in collaboration with private sector, Government bodies and NGO (i.e. technology for main productive sectors, model on collaborative CCA program across coastal communities/ upstream and downstream communities); and also evaluated for future reference	2.2. Climate smart initiatives implemented, including those fostering sustainable utilization of natural resources, with implementation and financing scheme that can be replicated and disseminated to broader audience		**2.172.539**
	2.3.1 Climate change training and knowledge sharing conducted 2.3.2 Local knowledge sharing platform established and developed Knowledge product, Advocay material (i.e. lessons learned, research paper, newsletter) published and shared	2.3. Knowledge management platform established at city level	AF Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	**47.692** **200.384**
3. Strengthening vertical coordination by enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan which in turn could	3.1.1 Enhanced provincial capacity to develop RAD API 3.1.2 Appropriate strategy to integrate CCA into Provincial government planning processes (annual work plan or mid-term development plan of city) is developed	3.1 Enhanced provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan	AF Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	**15.308** **15.766**

foster better climate-related policy on climate financing and bottom-up planning				
4. Strengthening vertical coordination and collaboration between national and local government in climate adaptation context and Enriching knowledge, toolkits and methodologies coastal resilience for the national government	4.1.1 Knowledge product in the form Handbook on how to use SIDIK for risk assessment at coastal city is published and shared. This handbook is targeted to be used by local government, NGOs and civil society organizations	4.1 Enriching SIDIK as risk assessment tools for coastal area based on local experience	AF Outcome1, Output 1: Risk and vulnerability assessments conducted and updated at a national level	**31.638**
	4.2.1 Strengthened vertical coordination and collaboration between national and local government in climate adaptation context	4.2. Vertical coordination and collaboration between national and local government in climate adaptation context is strengthened	AF Outcome 7: Improved policies and regulations that promote and enforce resilience measures	**91.647**
5.Total Project/Programme Cost				3.718.077
6.Project/Programme Execution cost and ME cost				353.217
7.Project/Programme Cycle Management Fee charged by the Implementing Entity				55.771
Amount of Financing Requested				**4.127.065**

Projected Calendar:

Project Duration: *3 years (36 months)*

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

Milestones	Expected Dates
Start of Project/Programme Implementation	November 2018
Mid-term Review (if planned)	Juni 2020
Project/Programme Closing	September 2021
Terminal Evaluation	October 2021

PART II: PROJECT / PROGRAMME JUSTIFICATION

How will the Program assist the City of Pekalongan in Effectively Addressing Climate Risks

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.

43. **Climate change has led to the rise of sea level and changes in rainfall patterns in Pekalongan City.** The rainfall pattern in recent years has become more intense and occurs in a shorter period, which then leads to flooding. Flooding in northern part of Pekalongan City, either those caused by increased rainfall or sea level rise, have contributed to many interconnected problems. Extreme climate events like heavy rains, combined with sea-level rise have resulted in more frequent and more unpredictable floods that threaten populations' security and goods. Climate change is thus impeding Pekalongan City development. One example of this impediment is the decrease of agricultural land area in nine communities of Pekalongan city that reaches 73% between the period 2007-2016 due to the land being submerged in sea water and also high salinity level of the irrigation water. This condition has threatened Pekalongan City food security by reducing rice and other agricultural production.

44. This program is specifically **designed to *Building Coastal City Resilience to Climate Change Impacts and Natural Disasters***, with a **particular focus economic/livelihood, food security and environmental issues**. The development of local climate change adaptation plans required scientific basis to corroborate and better understand the pattern of current and future of climate risk. This information is essential to create and develop an effective adaptation. Effective adaptation action should also be built on existing actions; adjusting and leveraging practices that are socially- and environmentally-friendly, while leaving practices that potentially cause adverse impact.

45. Another **key** to **effective adaptation** is it needs to be **locally driven and to involve those most at risk**. This notion thus highlights the importance of two key actors, the local government and community-based organizations (Satterthwaite, 2010). Having considered the above, employing a combined bottom-up and top-down approach, while simultaneously taking into account the current and future climate risk pattern, is considered as important for this program in developing an effective local adaptation action plan.

46. **Bottom-up approach** means that the development of **local action plan should meet local needs** and involve diverse actors by taking into account the local condition (human capacity, resource availability, local knowledge and practices, etc.). Top-down approach means that national actors play role in providing direction, guidance and resources for supporting local government in developing adaptation action plan that is in line with national development goals. This program will combine two approaches and facilitate interaction between national and local actors, in order to achieve better overall results. Combined approach is expected to become best practice and set out example on how to synergize national policies (RAN API) into all level of government (Province, City and Community). Following this approach, activities under this project will then be designed and implemented at four governance level (National, Province, City and Community).

47. Building city's and community's resilience is **not merely** equipping them with **hard structure and soft structure** to address climate impact, but **also by building their awareness and capacity in responding to the impact.** Collaborative and participatory approach is the core for this program. Participatory approach is not only going to be implemented during program implementation phase, but also in program design, where the said approach is already applied during the development process of this full proposal. All the interventions to be imeplemented in this proposal are the result of Focus Group Discussions and Consultation with Local Stakeholders including communities and municipal government of Pekalongan City. The process of these activities could be seen in the Annex 5.

48. The interventions approach to different level of government administration are meant to be in-line with the Law No.23 Year 2014 about Regional Government. This is the sustainability approach on adapting the climate change through local livelihood and economy improvement. This proposed program will be focusing its work on economic/livelihood, food security and environmental issues. From legal perspective, these 3 issues are in line with resilience sectors in RAN API (specifically Cluster 1, 2 and 3) and with direction for improvement of communities' resilience in 2015-2019 National Mid-Term Development Plan (RPJMN). As mentioned above, the combined approach at four governance level is in line with Law Number 23 year 2014 on Regional Government. Activities to be implemented at each level are explained below.

Community Level

49. **The main focus at community level** is to **strengthen the capacity** of **coastal community** in **developing community profile/climate-change information system** and adaptation action plan, on top of implementing the derived climate change adaptation action. The profile itself will be built upon participatory climate risk assessment conducted by the community. The project in community level will also stimulate the implementation of community-based adaptation actions that will be focusing mostly on livelihood context; how the community can adjust their conventional livelihood practices to be able to face climate change impact. The other focus will be on impact from climate-related disaster faced by the community, namely coastal flooding and erosion and sea level rise. Activities that will be undertaken at community level and their reasoning are provided in table below.

City Level

50. **At city level**, more **emphasis** is placed on **increasing the capacity of local government bodies, universities and local NGOs** to have the ability to **develop local climate-change adaptation action plan** (RAD API). The development process will be facilitated by the Project Management Unit (PMU). The core steps in developing RAD API document will be translation and adjustment of RAN API content into local context. To provide scientific basis to the document, training on utilizing SIDIK to assess climate vulnerability and risk of the city will be conducted. The assessment result will then be a part of local context in RAD API and among the key considerations to develop the list of adaptation actions. Training will also be given on mainstreaming process of adaptation plan to local development plan. The training participants at city level will also involve community representatives. This is to ensure that all stakeholders will have the ability to evaluate and find synergy between RAD API and other relevant regional/local development plans. Furthermore, approach at city level would not only encourage community, but also private sector participation in implementing adaptation action, by exploring the potential of private sector cooperation in supporting local adaptation action. Promoting collaborative climate change adaptation actions, not only within program timeframe, but also in future time.

51. The collaborative adaptation actions that will be implemented in city level will be designed with implementation and financing scheme for selected actions that will **allow for replication and wider implementation**, so that benefit derived from the program can be further shared after the program is ended, not only relying from program funding. It is this existence of such financing scheme that will be the main difference between adaptation actions at community level and city level. Whilst in community level the activities will be conducted in an area with one-off AF grant, in city level a financing scheme in the form of revolving fund (utilizing AF grant as the initial fund) specifically for for aquaculture and innovative latrine will be introduced. This scheme is considered as would allow and attract wider replication of activities in Pekalongan City area. The financing scheme will not be implemented at community level since activities at the said level will be focusing in creating a sound technical and institutional aspect for the implementation that can be replicated in wider area.

52. Adaptation actions that will be implemented at city level will be focusing on:
    (1). **Enhancing the resilience of main productive sectors** through (i) aquaculture development (vennamei shrimp and bandeng fish) by introducing new technology and cooperate with financial institution in developing aquaculture scheme (ii) construction of coastal embankment with geo-tube system. Aside from financial resources, one of the biggest challenges for aquaculture implementation in the targeted area is coastal flooding. Inundated aquaculture pond during coastal flooding had been a recurring event for the community; resulting in significant economic losses. Hence at city level, the construction of geo-tube will not only serve the purpose of reducing inundated area by protecting the coastal part of Pekalongan City, but also protecting aquaculture location from flooding; reducing the potential of economic losses and maintaining the sustainability economic activity from aquaculture. The built embankment will complement national government (BBWS) initiatives that at the moment are constructing dam in Bandengan area. .
    (2). **Introducing innovative latrine in flood prone area** to reduce impact from water-borne disease that complemented with financing scheme

(3). **Developing and promoting community-based ecotourism**. Despite its nature will be community-based, this ecotourism activity will falls under the responsibility of Pekalongan City Government considering that community does not have jurisdictional authority in the city administrative area. Yet the community will be the main actor in implementation and will work closely with city government officials on this matter.

53. Although the activities at City Level and Community Level appear similar, the financial mechanism is different between Community and City levels. At the **Community level**, the **AF fund is being used for direct implementation of interventions planned**. While in the **City level**, the AF fund is **channelled through local Financial Institution to become the revolving fund for wider beneficiaries**.

54. **The financial Institution to be involved in the project has been proposed by The Local Government of Pekalongan City**. Since it is a City-owned Institution, the involvement was consulted during the First consultation meetings and FGDs documented in Annex 5. The source of Fund to be used to generate the revolving fund has been requested to the Adaptation Fund that can be seen in the Project Budget.

55. Additionally, **knowledge management platform will be established at city level**; enabling information sharing between stakeholders and creating a transparent program implementation. Among knowledge product that will be produced are documentation of lessons learned, training materials, research paper, and advocacy materials.

A more detailed information on the proposed activities at community level and city level is presented in **in Annex 6.**

Provincial Level

56. Activities at **provincial level** are more **focus in assisting the provincial team** to **develop climate risk assessment** with community level as the smallest level of analysis, in which the assessment results will be the **basis to develop RAD API**. The provincial will undergo a series of training to equip them with the following technical skill and knowledge: SIDIK utilization, RAD API development by considering RAN API and city adaptation plan, translate and integrate RAD API into provincial development plan. These will be the basis to build **a synchronize adaptation action between city, province and national.** A total of 6 trainings (3 trainings for RAD API development, and 3 trainings for its integration into provincial development plan) will be received by province government officials on the aforementioned aspects. From this training, Central Java Province RAD API document and strategic document outlining its integration into Provincial Development Plan will be generated.

National Level

57. At **national level**, the team will **be focusing in strengthening vertical coordination** and **advocacy** process by **working closely with 2 national government bodies and secretariats** in issue that will be elaborated as follows:
    (1). The Ministry of Environment and Foresty (MoEF) has developed a free web-based tool to calculate climate risk index known as SIDIK. This tool is highly beneficial for local government to assess their area risk index in an easy and user friendly manner. Yet the tool has a drawback in its inability to accurately calculating climate risks in coastal areas. Therefore, **this program will support MoEF in refining the tool in order to improve its effectiveness and accuracy of its utilisation in coastal area**. Building upon experience of using SIDIK at city level, a handbook will be developed on how to use SIDIK for risk assessment at coastal city area, where it will contain coastal-related criteria to generate a more appropriate vulnerability index for coastal city. This handbook will be communicated to MoEF and broader audience through dissemination activity. Concurrently, 300 handbooks will be produced and made available for local government, NGOs and civil society organizations.

(2). Secretariat of RAN API had developed **gap analysis of RAN API** document. Building upon experience in translating RAN API at provincial and city level, the **team will provide input to the secretariat on gaps identified during the translation process.** This input will be beneficial for RAN API review process that is planned to be conducted in 2017-2018. Cooperation with Secretariat of RAN API will also be done to explore potential synergy between the national (RAN API) and regional adaptation actions (RAD API), that could prompt vertical collaboration between line ministries/government agencies and local governments for implementing adaptation actions that can be implemented at the provincial, city or community level. Seeing Pekalongan City position as one of the pilot areas of RAN API, this such synergy and collaboration is seen as highly potential to be implemented.

58. In order to explore the potential vertical collaboration in implementing adaptation action, there will be a **series of national dialogue (3 events) as a consultative meeting/forum among national, province and city representatives**. In the national dialogue, based on the existing national dialogue method and scheme, community representative might not be involved. However lessons learned from community implementation will be shared and communicated by PMU during the event. Furthermore, Pekalongan City representatives will represent community community's (as well as wider city stakeholders) voice and interests during the dialogue. To further strengthen the need for collaboration as well as highlighting the role of local level in climate adaptation context, a set of policy advocacy materials (including 3 policy papers on: gaps in national policy, fiscal, regulatory and legal framework that built upon experience and findings at local level; 1 lessons learned documentation, research paper) will be developed and communicated to relevant stakeholders. This communication can be done through the program regular involvement in national knowledge platform meetings (at least 9 meetings). Engagement with national platform that advocating the same interest is believed to provide assistance to this advocacy process, and thus the team will actively engage and communicate with Indonesia Climate Alliance (ICA); a national platform comprises of different national institutions, research institutes and NGOs with interest on climate resilience issue. Policy advocacy will be a continuous and interconnected activity at 4 governance level; and it will be the main content of vertical approach. Lessons learned obtained at community and city level will be utilized to build research paper and policy brief as bottom-up advocacy material that will also be communicated at province and national level.

Interconnection of Program Implementation at 4 Governance Level

59. **Combination of bottom-up and top-down approach will be implemented within the proposed program** to ensure a cohesive climate adaptation plan/program/policy and its implementation at all governance level. In general, the program will focus on 4 aspects, which are capacity development, adaptation action, knowledge management and policy advocacy. Figure 8 below shows the interconnection between actions at different governance level within the program, with brief information on each aspect.

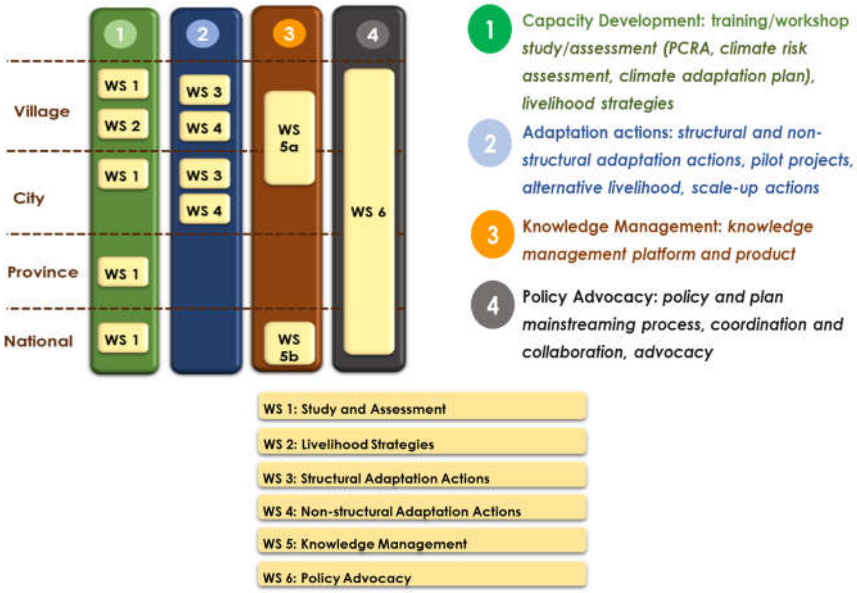
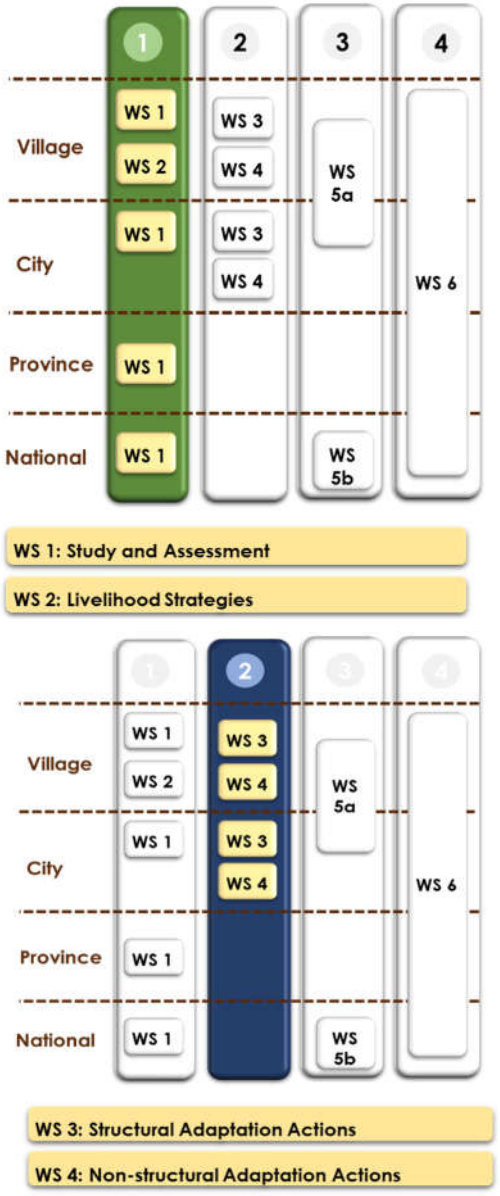


Figure 8. Interconnection of 4 Aspects at 4 Governance Level



Capacity Development

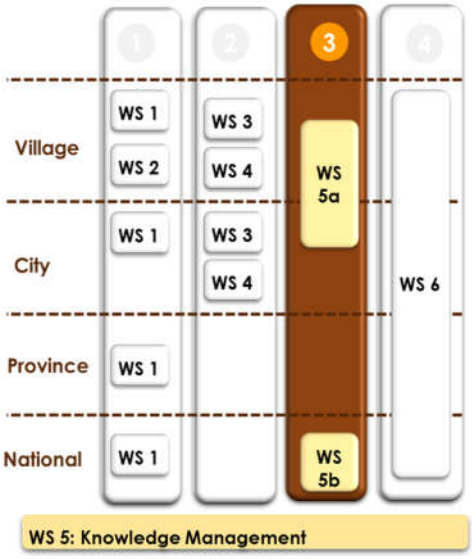
60. Focusing in equipping implementer and beneficiaries with sufficient knowledge and skill to address climate-related issue. **Capacity development activities will be done at all governance level**, with materials including how to develop, use and integrate climate risk assessment at lower governance level into risk assessment process at higher governance level and its relevant policy-making process. At community level, capacity development process will also include participatory assessment in determining the most suitable and appropriate alternative livelihood strategies for their area. This particular strategy will also be advocated to the city government for broader replication that complemented with financing scheme.

Adaptation Actions

61. **Focusing in implementing physical and non-physical interventions** that are expected to assist Pekalongan City in reducing coastal-related climate risk. Considering the scope of program implementation as well as the fact that local autonomy in Indonesia falls under city government (instead of province/state government) and its lower governance level, hence adaptation actions for this proposed program will only be implemented at community and city level. Adaptation actions that will be implemented at both level will be depending on the corresponding climate risk assessment results. At city level, the content of climate adaptation plan (and subsequent adaptation actions) will not only consider city climate risk assessment results, but also input from participatory climate risk assessment at community level.

Knowledge Management

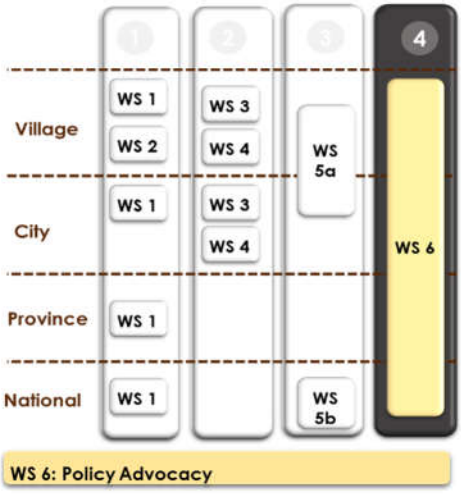
62. **Focusing in platform development for information dissemination and knowledge products development**. This aspect is aiming to ensure an effective horizontal and vertical information sharing on climate-related issue. For the purpose of this program, knowledge management aspect is embedded in each of 4 governance level. Hence the relevant knowledge management activities are located scattered in each level.



63. At community level, **knowledge management aspect will be focusing on collecting and documenting lessons learned at local level** and also two-way vertical communication with city government on climate-related issue. Knowledge management platform will be developed at city level with information coming also from lessons learned at community level, in which the platform is deemed to allow a more effective information sharing process. Among knowledge products that will be developed at city level are research paper and policy brief that will support policy-making process at city and higher governance level. At national level, knowledge management activities will be focusing on refinement of SIDIK as risk assessment tools that can be utilized by coastal area. The refinement itself will be utilizing lessons learned obtained from activities conducted at community and city level. Knowledge management activities will not be implemented at province level since province government role in Indonesia governance system is mostly as the extension of national government, with no actual administrative area, since autonomy falls under the hand of city/district government. Yet, city government will continually feed climate-related information and the relevant adaptation plan to province government as key information for them to develop Central Java Province Climate Adaptation Plan which obligated to be developed by the national government.

Policy Advocacy

64. **Focusing in ensuring the integration of climate-related issue into government plan/program/policy**. Policy advocacy will be a continuous and interconnected activity at 4 governance level within this particular program. Adaptation plan at community level will be mainstreamed to community development plan, and then submitted and advocated during development plan meeting at sub-district level. This plan will continue to be advocated during the succeeding development meeting at city level. Furthermore, the results will also be synchronized with adaptation and development plan at province and national level. Aside from the plan, lessons learned obtained at community and city level will be utilized to build research paper and policy brief as bottom-up advocacy material.



65. To better illustrate how the advocacy process can be done throughout the program, figure 9 below shows the applicable

National Development Planning System in Indonesia. In figure 9, it can be seen that community level is not formally included in the framework of National Development Planning System. However in practice, the deliberation to formulate city development plan is started at community level. The agreed Community Adaptation and Development Plan will be discussed at deliberation meeting at sub-district level. The results then will provide an input to local adaptation plan at city level which will then be integrated to city development plan. Moving vertically, city adaptation plan and development plan will subsequently feed information to shape province adaptation and development plan. Considering their role as national government extension, provincial adaptation and development plan will also be influenced by policy at national level. On the other hand, city government also has the ability to directly feed information to national government by providing sound lessons learned in the form of policy brief. For this particular program, **the city government will provide policy brief which showcasing lessons learned from development and implementation process of coastal adaptation plan** that at the moment still lacking in Indonesia, including outlining how coastal characteristics can be integrated into SIDIK.

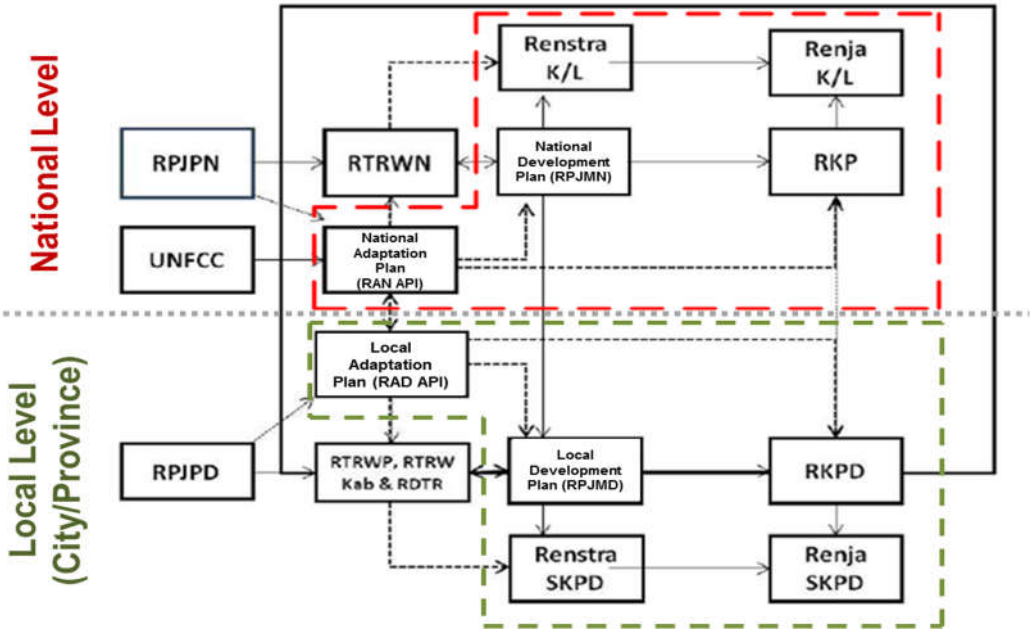


Figure 9. National Development Planning System

66. Meanwhile figure 10 shows how the local government (community, city and province government) could incorporate climate adaptation plan into their development plan. This scheme would inform the PMU on how to design the best approach for advocacy. **Climate adaptation strategy and plan would provide different perspective to local government in formulating their local development strategy and plan**, in addition to the conventional approach which often only considering local and regional economic perspective.

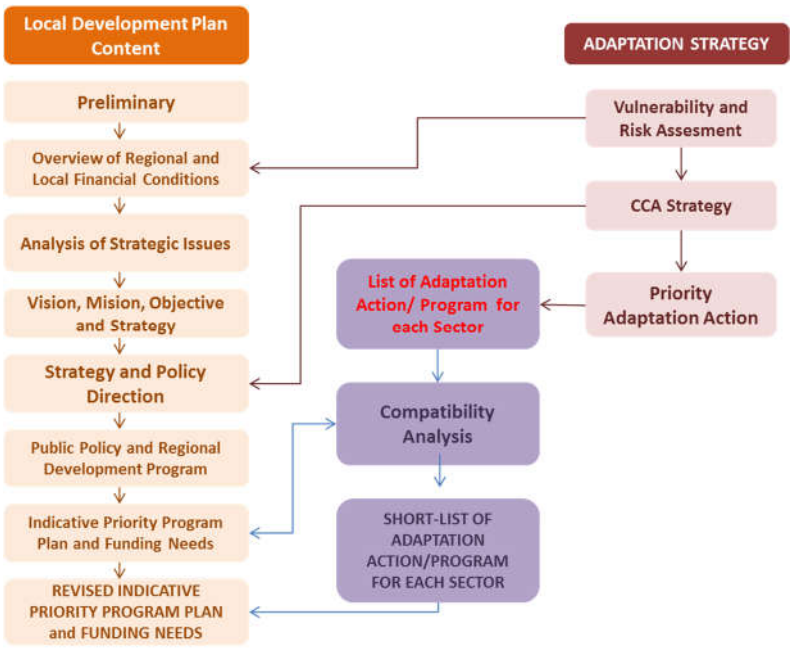


Figure 10. Potential Scheme to Integrate Climate Change Adaptation into Local Development Plan

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.

67. **The program implementation will generate economic, social and environmental benefits and contribute in improving gender equality, women's empowerment and meet the targeted adaptation needs of women and men**. This is marked by the implementation of various consultations with stakeholders at all stages of the project / program cycle in a gender responsive manner and paying attention to gender equality. Therefore, these benefits came not only from introducing alternative livelihoods and implementing adaptation actions, but also from implementing the whole course of the program and from various actions mainstreaming gender at every stage of program implementation. It will bring about and promote a set of innovations that will help improve the lives of the most vulnerable communities and encourage the empowerment of women. In general, benefits that can be obtained from this program including protection of the livelihood assets of coastal communities, sustainability of ecotourism, assist in increasing access to financial institution and reducing impact from water-borne disease.

Rob, flood, abrasion and siltation of rivers

68. Climate change has impact on the occurrence of Rob, flooding, abrasion and siltation of rivers at the program location. The following table details some of the causes and their impact on the environment and the communities around the program locations identified from the results of the discussion with the communities.

Causes	Impact
- Many development activities that not comply with the “AMDAL” [Environmental Impact Assessment] - Lots of artesian excavation - Many companies make water drill wells	**-Damaged roads** **- The difficulties of the transportation –** **- Daily activities are disturbed (ponds)** **- Home industry is paralyzed**

- There are still people who throw litter - Trash piles up and burns - Over capacity TPA (lack of waste management) - Many rice fields turn into houses - The amount of disposal of industrial waste into rivers (pollution) - There is no green land - The drainage channel is reduced	**- economic downturn** **- Many ships cannot dock, so raw material supply is disrupted** **- Slums (dirty and unhealthy)** **- Water quickly enters the settlement** **- The wind hit the settlement** **- Health issues (skin, tuberculosis, vomiting, dysentery, filariasis, leprosy, increased stress and emotions, mental disorders)** **- Sanitation is disrupted** **- Groundwater level reduction** **- Education is disrupted (children don't want to go to school, the school/study location were moved)** **- Increasing living costs (repairing motorbikes, houses, etc)** **- The property are damaged** **- Need more energy and people to clean the house affected by rob** **- There is no beach (as tourist spot)** **- Plants died** **- Loss of children's playground (open land is flooded)** **-Domestic violence**

Community proposal/suggestions

69. From a series of program preparation discussions, the Partnership team also explored community proposals/suggestions, especially among women, so that their problems could be resolved immediately, as follows:
    1. Grombyang Kali (river's dredging) in Degayu Community
    2. Provision of pumps for Degayu Community, because currently there is only one large suction pipe
    3. Dredging of Kupang River and Parapet Making (Tebing) and sluice gates in Panjang Wetan Community
    4. Controlling settlements (there are 11 houses) on the Kali Kupang side of Panjang Wetan Community
    5. Dredging of city rinse channel repair in Panjang Wetan Community, Padukuhan Kraton, Kandang Panjang
    6. Repair of public toilets for Panjang Wetan Community on the river bank (there are 4 locations)
    7. Elevation of roads and normalization of channels in Panjang Baru Community
    8. Normalization of Kali Bremi (dredging, cleaning of water hyacinth, raising of senderan) in Pasir Kraton Kramat Community
    9. Elevation of the talud and repair of the channel (so that water can come out) in Kandang Panjang Community
    10. Dredging of Meduri River and the construction of cliffs in the west, repairing canals and elevating roads in Tirto Community
    11. Improvement of public channels and household channels in the Padukuhan Kraton ex-Pabean community
    12. Normalization of the channel in Pasir Kraton Kramat Community because the sediment is already high.
    13. Repair of 'MCK' in Pasir Sari, Kelurahan Pasir Kraton Kramat
    14. Elevation of the road in Kramat Sari ('angkatan 66'). It is because the water overflows into the area.
    15. Training and provision of capital for residents whose jobs are affected by rob. Giving capital should be direct to individuals (not per group, because often it doesn't work if per group).
    16. Training: selling, convection and sewing, food (processed fish such as shredded meat), dressing
    17. Training on waste recycling to reduce waste generation while increasing income

18. Socialization regarding waste management
19. Optimization of waste banks, currently many garbage banks are flooded due to rob

Barriers / challenges faced by women in program participation:

70. To ensure women's participation in the entire program process, it is important to recognize the various potentials barriers that hinder their participation. From various discussions with them, the barriers/challenges encountered and need to be anticipated are:
    1. Generally, in everyday life, women and children suffer from the effects of rob, from waking up until they sleep at night.
    2. Women must do extra work because of the rob they and their families experience. Among others: cleaning the house (sweeping, mopping), clearing household items, maintaining and saving children, helping to provide consumption for the people who clean the environment due to rob.
    3. Female rest periods (including sleep) are few. The average woman in the beneficiary area wakes up at 2:30 in the morning and sleeps at night at 12.00 a.m. This has an impact on women's health conditions and prevents them from participating in programs.
    4. Meeting activities in the community are often held at night, but as mothers it is rather difficult to leave children at night.
    5. Climate change adaptation interventions focus more on road elevation, whereas according to them what is considered should be not only roads, but also waterways. In fact, if the road is elevated but the channel is not repaired, water will still be difficult to get out of the inundation area.
    6. Even if women submit proposals. Usually the proposal is only recorded, but it is not realized because it is not considered a priority scale. The priority is generally based on areas that are considered more severe.
    7. NUSP funds are directed to 'SK Kumuh (slum)'. But this 'SK Kumuh (slum)' is not in accordance with his visual condition. So that the really slum areas cannot be handled, even though the NUSP funds are quite high in value. Merged communities and non-demergers, obtaining same ammount of funds for handling, even though the extent of the environment and the severity are different.
    8. Due to limited funds while the location and need for handling is very high. Some women's proposals tend not to be a priority.

71. The program framework is formed in a way that could ensure **broader Pekalongan City community could reap the benefit from program implementation**. At community level, the program aims to **strengthen coastal community resilience and assist the community in addressing coastal flooding issue**. The specific targeted beneficiaries at this level will be the vulnerable coastal community in 8 coastal communities, which are: Degayu, Krapyak, Panjang Wetan, Panjang Baru, Kandang Panjang, Padukuhan Kraton, Bandengan, and Pasirkraton kramat. Different studies and assessments have pointed the aforementioned communities as area that considered as high risk to coastal flooding. Their geographical position as the coastal area of Pekalongan City have certainly place them front and centre to coastal flooding hazard.

72. **Participatory approach** being employed in the program **will ensure the fulfilment of representatives of both women and men in consultation at all stages of the project / program cycle and community's opinion and interests are taken into account**. The community working group will be comprised of representatives from women groups, most vulnerable groups (included here is community member that could represent the voice of elderly, children and disable groups) and community representative from different socio-economic level. The planned adaptation actions, including alternative livelihood will be designed by considering their needs and interests. Community Working Groups (VWG) act as institution that select those beneficiaries of the project at the community level. The criteria for beneficiaries are affected communities, the poor and vulnerable people, for farmer groups, VWG must ensure that at least 30% of the group members are women.

73. While **at city level**, the program tries to **provide a broader impact** by not only **targeting direct beneficiaries** in the forms of people that involve in pilot project implementation location, but **also indirect beneficiaries** which are the wider Pekalongan City community through advocating and fostering a climate-resilient development plan and action plan. The program will also focus in

strengthening local government's capacity in developing and mainstreaming climate change adaptation plan to local development plan and spatial plan by paying attention to the gender aspects in it.

74. **Revolving fund distribution**, financial institutions cannot determine the **benefeciaries/recipient** of the financing themselves. There are several **selection processes to determine** namely:
    1. The proposed financing proposal must be **approved by the Community working group**, set up, approved and monitored by Pekalongan City Planning Agency.
    2. Proposals were submitted to CWG and financial institutions approved by Pekalongan City Planning Agency.. **City working group** and Financial institutions will conduct a **series of discussions to determine who can receive funding**. The financial institution focuses on assessing potential returns, while CWG focuses more on the eligibility prerequisites of benefecieries/recipients.
    3. **Criteria for revolving fund** are: a) people **affected by climate change**, b) **poor and vulnerable** people, c) for groups subject to a **minimum requirement of 30% of group members are women**.
    4. at the time of disbursement of financing, the husband and wife must sign the agreement file, except for single parents

75. **Revolving fund management,** Financial Institution, in this case is BKM Sukses Ikhlas, will monitor directly together with Project Management Unit the implementation of Vanamei shrimp pond as well as the harvesting stage and profit sharing mechanism implemented by the WGC. In this way, the implementation of revolving fund will be conducted as planned and will minimize the risk of unpaid installment.

Capacity Development

Community Level

76. **Capacity development** activity at **community level** will be mostly done in the form of **training and awareness building** that are focusing on strengthening coastal community's capacity in climate-related knowledge as well as planning, implementing and monitoring community adaptation plan. These activities will introduce new knowledge that intending to stimulate behaviour changes. For the local environment this would mean less adverse environmental impact from anthropogenic activity as well as an opportunity for promoting new ecosystem services (e.g. coastal conservation activity) and increasing social capital. The community thus will obtain social benefit in the form of improved knowledge and capacity to better address climate-related issue which in turn will increase their adaptive capacity to climate risks; and also environmental benefit that derived from behavioural changes. Meanwhile the economic benefit comes as an indirect impact of capacity development at community level, particularly from alternative livelihood training that is aimed to increase the coastal population income. The training and awareness building will also raise some gender issues related with the climate change such as gender mainstreaming on climate action into community development plans, , including the impacts of climate change on women. Accordingly, the vulnerable groups (including women) will be trained and equipped with new skills; and open up new employment opportunities for them. The total target of training and workshop participants at the community level will be attended by 360 participants where 100 participants are women. Furthermore, **women representative** will also be the member of community climate working group (**20% member of community working groups is women champion** in all communities).

City and Provincial Level

77. This program will **provide social benefit to the local government** by enhancing their capacity to **develop** a **participatory gender responsive and sustainable local development plan** that incorporate climate change context; fostering a better institutional framework for climate-related planning and thus creating a ripple effect in building a more resilient coastal city. The existence and implementation of this plan will assist them in better allocating resources (both in terms of monetary, physical and human resources), including improving public services to vulnerable people. Often, resources allocation done by the local government was not on target due to minimal information, especially when trying to synergize vertical planning between city and provincial government; resulting in an ineffective not on-target resource allocation. Implementation of this program is expected to remedy

these previous practices, fostering a better and more synergized planning, and also a more effective and on-target resource allocation.

78. At city level, social benefit will also be obtained from the **establishment of local knowledge management platform** that enable information sharing (including technical information and gender issues) between stakeholders. As one of the member of the knowledge platform, local NGO and community-based organizations will also gain social benefit from this program since they will receive technical training that will be useful for their future operational activity in the area.

Advocacy

79. Advocacy conducted at national level has the potential to promote economic benefit for the city by **synergizing city adaptation plan (that built upon community adaptation and development plan), provincial adaptation plan and national adaptation plan**; open-up city opportunity to tap funding access from the national government budget. City government will then be able to allocate the needed funding for implementation at community level. For national government itself, this synergy would enrich their existing information on climate-related issues at local level and also set example for vertical coordination mechanism to other RAN API pilot areas

Potential Adaptation Actions

Community Level

80. **Potential adaptation actions at community level** will be focusing on addressing impact from climate-related disaster faced by the community, namely coastal flooding, erosion, sea level rise and changes in sea water properties. Among the potential actions and their corresponding benefit are:

- **Promoting the cultivation of Vennamei shrimp** and its cultivating method to local fishermen in Degayu communities that have shrimp as their main commodities. The study of Culture White Shrimp (Litopenaeus Vannamei) at Sea Floating Net Cage show that the NPV is IDR 43,315,360.00; IRR is 21.47%; net B/C ratio is 5.11, gross B/C ratio is 3.71; PBP is 6 months and 9 days and BEP is 1,837.82 kg of shrimp biomass or IDR 147,025,891.18 of the value of sales. The final result of feasibility analysis of shrimp culture in sea floating net cage is feasible to run[26] This species is known for their high adaptability to changes in their environment and high tolerance to diseases so that they are deemed as suitable for Pekalongan City coastal area that is threatened from climate change impact. Altering from the existing species to Vennamei shrimp will provide economic benefit to the fishermen by reducing the potential losses from failed harvesting due to shrimp's inability to grow in the changing sea water properties; and thus increasing their income At the community level the action taken is in the form of 6 pilot projects that will expand at the city level. Cultivation of Vanamei will only be carried out in the community of Degayu, where the pilot project will be carried out by a group of fishermen / farmers consisting of 5-10 people and 20 percent of the members must be women. The minimum direct beneficiaries pilot project is 30 households.

- **9 pilots will be built Integrating mangrove into fish pond design** and development in order to increase the physical resilience of the coastline with natural and local-based structure intervention will be done in 8 targeted communities that are prone to coastal flooding. Mangrove in this design will generate environmental benefit by acting as sediment trap for coastal erosion protection (from prevailing wind) and water purifier; hence creating a more suitable environment for fish pond that will be located behind the mangrove layer. Additionally, mangrove will also act as a natural barrier to protect coastal environment and community from coastal flooding. All of this environmental benefit would in turn create economic benefit for the coastal community by increasing fish production from better water quality and also generate income from mangrove, as well as reducing economic losses

[26] http://journal.ipb.ac.id/index.php/jurnalmpi/ ; Vol. 13 No. 2 ISSN 2085-8418; EISSN 2622-9250 : Feasibility Analysis of Culture White Shrimp (Litopenaeus Vannamei) at Sea Floating Net Cage (FNC)

and burden due to physical (including damage to fish pond) and environmental damage from inundation/coastal flooding. The suitable fishpond are Bandeng/milkfish or Nila Salin (Tilapia), based on milkfish business feasibility in Pati (16 km from pekalongan), The evaluation result of business feasibility obtained was the average values of PP, NPV, B/C ratio and IRR were 5,74 years, Rp.68.064.730,-, then 1.07 and 29%. From the evaluation, it is concluded that Milkfish is feasible[27].

- **Installing individual/communal latrine to address sanitary issue, including reducing the risk of water-borne disease**. Due to permanent inundation, some household are suffering from inoperable latrine, hence open defecation in body of water can be found in some area. The open defecation habit also driven by the community's economic condition which majority at low level, and thus often do not have individual latrine. The community had indeed provided with communal latrine in the past. However these facilities are also deemed as inoperable due to inundation as well as low level of maintenance. The communal installation will be installed in public facilities/community offices to serve internal purposes and community purposes (if possible); while individual installation will be installed 25 individual laterine and 2 communal laterine (as pilot implementation) in 8 targeted communities with totally 200 individual dan 16 communal. To complement this latrine, a communal waste water management installation will also be built to prevent water pollution from latrine effluent. Both the latrine and waste water installation will be designed to suit with the area's characteristics that at risk from inundation, but still take account on the ease of access and maintenance for the community so that the facilities will be well maintained throughout the time and continually benefit the community.

City Level

81. Potential adaptation actions at **city level** will be **focusing on addressing climate change impact at city scale**, in which the potential actions will be designed with implementation and financing scheme that allow for replication. Among the potential actions and their corresponding benefit are:

- Based on successful story from pilot in community level aquaculture development by promoting new and more adaptive main commodity's species as well as fostering cooperation with financial institution for the said development. **Sustainable cultivation of Vennamei shrimp and its cultivating method** will be promoted to fishermen in Degayu communities with shrimp as their main commodities. This model can be Transferred in 20 fisherman groups in future time. by other coastal communities in Pekalongan City. From this action, the fishermen will not only gain economic benefit from the increases of shrimp production but also from the introduction of financing scheme that will provide them with soft loan to further develop their farm/pond. From city perspective, the increase of fish production will provide economic benefit in the form of the increases of City's Gross Domestic Product (GDP), particularly from fisheries sector; and also social benefit from stronger food security.

- **Construction of coastal embankment in 2 flood-prone communities** with sediment/sand trap system in combination with planting mangrove as coastal green belt will functioned as coastal protection from flooding, erosion and sea level rise. The mangrove will also be beneficial in creating a suitable environment for fish farming that will in turn increase fish production.

- **Develop eco-tourism development which will provide alternative livelihood** for the community who will be involved in the eco-tourism management and day to day activities, as well as fostering environmental protection within the site. Other economic benefit from this action is contributing to the increase of city's income from fisheries sector.

- **Building latrine in flood-prone area to reduce impact from water-borne disease**. Due to its low economic level, some part of coastal population in the 8 targeted flood-prone

[27] https://ejournal3.undip.ac.id/index.php/jamt/article/viewFile/20369/19201

communities is not equipped with adequate latrine, so that they often use body of water to serve these purposes and thus raise the potential for water pollution. This action will provide social and environmental benefit by providing the community with suitable individual and communal latrine that will in turn reduce the potential for environmental degradation. The difference between latrine construction at city level with those implemented at community level lies on the introduction of financing scheme at city level. The financing scheme will be in the form of micro loan managed by local financial institution. This such scheme has been implemented in Semarang City, so that the program PMU and Pekalongan City government could learn from their lessons learned.

Alternative Livelihood

82. **Alternative livelihood will be introduced** in this program to **reduce coastal community's high reliance to their existing livelihood** which has the potential to be **highly affected by climate change impact**, and also to provide additional income for those who currently live in low level economic income. Eco-tourism is the alternative livelihood that will be fostered by this program and will be implemented at city level.

City Level

83. This new livelihood relies heavily on the **existence of mangrove belt** which for city level has a high environmental value by **providing coastal protection**. Environmental benefit could also be obtained from the introduction and management of eco-tourism. To ensure the site is attractive enough for eco-tourism, protection of its condition is of essential; and hence the management will be driven to preserve environmental condition of the eco-tourism site and its surroundings. At the moment, the existing site can be considered as unkempt despite its potential as tourism site. Having the site dedicated for eco-tourism will drive the community and government officials to preserve its environmental condition. Other benefit arising from these new livelihoods is its potential to contribute in increasing Pekalongan city's income from fisheries and tourism sector as well as provide job opportunity for the community.

84. From the abovementioned activities and benefits, the **vulnerable groups that will gain benefits** from this program are encompassing:

(i) Flood-prone household

Data recorded in 2017 shows that 12,573 households p located in the targeted 8 communities are categorized as prone to coastal flooding. These households will receive direct socio-economic and environmental benefit from the program since they will be the core subject for project interventions; not to mention how they will receive knowledge enhancement from their involvement in series of trainings and workshops.

(ii) Fishermen, farmers and aquaculture farmers

In 2014, 4.65% Pekalongan City population works in Agriculture, Forestry and Fishery sector. This percentage represents over 13,700 people. For these people whose works are highly influenced by climate variability, this program will assist them in creating a livelihood strategy that is more resilient and sustainable; fostering a potential economic benefit for them. This program will build a pilot of 6 vanamei ponds in degayu community and 63 farms in 7 other communities, then this program will be multiplied with a funding scheme for revolving funds of 20 vanamei shrimp models and 80 others aquaculture (Bandeng fish)

(iii) Women-headed household, women, children and elderly

From approximately **109,011 population of 8 communities** that become the geographical **scope of the program**, around **49,1% of the population are women**, **including women who act as the head of their household**. This program will assist this specific women group by providing alternative livelihood to increase their income as well as possible adaptation actions they are able to implement themselves. Meanwhile children and elderly are accounted for around 29% of the total population of Pekalongan City. As vulnerable group with limited capacity, children and elderly will be benefited by the creation of a coastal resilient This program will build 200 individual latrines and 16 communal latrines. Prerequisites for the assistance of individual latrines are intended for poor families and

women headed households. The assessment will be carried out by the community working group as well as the Gender mainstreaming focal point. The direct beneficiaries from the latrine program are 2600 people vulnerable. Through the aquaculture program, building 171 fishermen groups with 885 household members will be helped through this program. Ecotourism activities are expected to support 400 households in Degayu Community.

Program Benefits		
Type of Benefit	**Baseline**	**With/at the project completion**
Social	• Poor adaptive capacities • Lack of mechanism for disseminating proven strategies to adapt to risks has led to relatively high fatality rates, disease incidence and food security, especially for vulnerable people (child, elderly and women-headed household) • High exposure to hazards can be considered as co-drivers of poverty and compounded social problems such as, disease, sanitation, food security issues, etc • Slow onset event such as sea level rise and droughts have affected the social well-being and cohesion of local communities and reduce their ability to cope	• New capacities acquired by populations on coastal protection and aquaculture • Improved food security • Leverage on lessons learnt on coastal management and adaptation to climate change • Improved adaptive capacity through a greater awareness of climate risks and adaptation options at the community and city level. • Strengthening social capital and capacity development to protect the community and surrounding area from disasters, fatality rates, diseases and food security threat • Increased resilience of coastal city and its communities, ecosystems and livelihood • Coastal city resilient planning, infrastructure and services contribute to social well-being
Economic	• Economic losses, physical infrastructure loss and also loss or disruption to livelihood options • Low cost-effectiveness of investments in the main productive sectors • Continuous decline in populations' revenue	• Improved institutional framework and aspect, improved communities and physical and natural assets, and also more resilient ecosystems and livelihoods • Revival of the economic activity • Improved food security and promotion of urban agriculture, changes to resource management, and identification of alternative livelihoods. • Capacity development of urban poor / women to gain new skills and employment opportunities.
Environment	• Abrasion/ coastal erosion • Mangrove degradation • Degradation of the vegetation • Land salinization/salt water intrusion • Ecosystem degradation and increased waste production lead to health issues	• Decreases in climate-induced environmental degradation and losses, and improved planning and preparation for disasters • Promotion of ecosystem-based adaptation in the urban environment, leading to environmental benefits

	especially in poor urban communities	• Rebuilding of coastal belt and protection against coastal erosion by sediment trap method • Rebuilding the vegetation • Protection of fishpond fields against salinity and flood by sediment trap method • Reduced adverse impact from anthropogenic activity through changes to coastal zoning and waste management e.g. community-based waste reduction and recycling schemes and energy efficient building construction techniques. • Enhanced resilience of urban poor communities

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

85. **Component 1 focuses on enhancing the knowledge and awareness of community communities** on **climate change**, environmental and gender issues. Community communities involved from the planning stage through Participatory Climate Risk Assessment, develop climate action plans into implement adaptation actions, that activities is expected to increase ownership of adaptation action program and guaranteeing the sustainability of the process after the program is closed.

86. **Component 2 focuses on two main activities on mainstreaming of climate change at the city level and implementing adaptation action for city scale** thus leveraging best practice adaptation action from community level through operationalizing the policy and planning processes for coastal adaptation action sush as coastal embankment, alternative livelihood, sanitation, latrine etc.

The **benefits of the activities** are expected to reach over **1,515 individuals across 8 communities** and the undirect beneficiaries will **reach 60.622 population in 8 communities** across the **6 selected atolls** during the course of the project. The impact of component 2, 3, 4 will have **indirect beneficiaries** for all Pekalongan citizens **301.870 populations**

87. **Component 3** will **focus on mainstreaming climate change at the province level**, the goals of this maintreaming in province level is linkage pekalongan city to get support both in the program and funding from the province while expanding adaptation planning in all cities and districts in the province of Central Java

88. **Component 4 Strengthening vertical coordination and collaboration between national and local government in climate adaptation** context and **enriching knowledge**, toolkits and methodologies coastal resilience for the national government Local government here is not only provincial government, but also city and community government.

89. Bintari Foundation had conducted Loss and damage studies by taking a sample of North Bandengan Community in Nort h Pekalongan, concluding that loos and damage per household in the Bandengan Community is USD 1,800 / year. The indicators for Loss used are: the loss of paddy field, Disable toilets, Unoccupied houses, Disable wells and indicators for damage are Decreased income, Increased domestic and services expenditure, Fragile Houses. The number of households in the 8 target communities (north pekalongan) of the project is 11,065 HH, so the potential loss if not doing anything

is 19,917.00 / years. The expected benefits after this project end is to prevent a L&D or decrease in income of no more than 10%.

Expected result	Output	Cost-effectiveness (assessment of alternative approaches)
1 Community Level 1.1 Enhanced capacity of local actors in identifying, initiating, strengthening, and escalating community-based actions to address climate risk and natural disaster; including capacity in integrating the actions to community development plan 1.2 Individual and community livelihood strategies strengthened to face climate change impacts, including variability 1.3 Increase adaptive capacity of local community, by also taking local wisdom into account	1.1.1 Community climate working group established and functioning in each of the 8 communities 1.1.2 Enhancing coastal community capacity in developing the community information system and implementing the ensuing climate change adaptation actions 1.1.3 Agreed adaptation action in each community implemented (i.e. mangrove restoration, aquaculture farming, geo-tube construction, eco-tourism and individual/communal latrine)	Project Management Unit (PMU) of this program will work closely with Pekalongan city team in program implementation at community level, in which the city team will play a major role at this level. As part of the city team, the local NGO that has been working in the targeted area will act as the spearhead for establishing community working group and delivering the series of training/workshop. This division of responsibility will ensure effective allocation of financial and human resources Drawing community support and involvement (in the form of community working group) in arranging community adaptation plan and development plan will reduce the costs since the proposed actions will be on-target and as needed. Thus will increasing the ownership of all planning document developed and implement adaptation actios Alternatively, if actions are implemented without calculating risk assessment and the implementer is not equipped with training, the end result can be more costly; unnecessary actions may be implemented which may not assist in addressing the targeted risk Planning arrangement without involving the local people will make the low level of community participation in implementing climate adaptation actions Drawing community support and involvement in selecting the adaptation actions will be a cost-effective mechanism since the proposed actions and its corresponding budget and man power allocation will be on-target and as needed. This approach, along with assigning the spearhead role to the local NGO will also ensure program ownership and subsequently the maintenance of the interventions after the program ended. Alternatively, actions that based solely on local climate wisdom or typical development may be selected and implemented as the actions, however it will not target the most vulnerable areas and

		people. Not to mention that the particular action will not be sustainable
2 City Level Enhancing local government and other city stakeholders' capacity in developing local climate change adaptation action plan (RAD API) and implement Climate smart initiatives	2.1.1 City climate working group reactivated 2.1.2 RAD API developed based on City Climate Risk Assessment and Climate Coastal Impact 2.1.3 Strategy to integrate CCA into local government planning processes (annual work plan or mid-term development plan of city) is developed 2.1.4 Innovative and collaboration adaptation actions are implemented in collaboration with private sector, Government bodies and NGO (i.e. technology for main productive sectors, model on collaborative CCA program across coastal communities/ upstream and downstream communities); and also evaluated for future reference 2.1.5 Climate change training and knowledge sharing conducted 2.1.6 Knowledge product, Advocay material (i.e. lessons learned, research paper, newsletter) published and shared 2.1.7 Local knowledge sharing platform established	The project pursues a participatory and integrated approach where community, local government, university, NGO, and private sector work together to develop adaptation action plan (RAD API) and integrate it into local development. This approach reflects a more sustainable way and will be more cost-effective especially if considering long-term time scale. A city climate working group that comprises of the abovementioned city stakeholders had previously formed in Pekalongan City, yet the said team is not active in the past year. The first action that will be conducted at city level under this program is reactivating the working group. Activating and optimizing the role of city team in this program is deemed as cost-effective since they already have basic knowledge on climate change and the relevant issues and assessment, so that the team does not has to be trained rigorously on basic matter. As part of the city team, local government will be equipped with skills to integrate adaptation action and planning to their city development plan (RPJMD/RKP). This integration is considered to be cost-effective measures since it will ensure that there will be budget allocation for adaptation actions that will not be funded under the program but included in the RPJMD /RKP (including integration of city-wide replication/scaling up of adaptation actions funded by the program); the program thus can focus in the most prioritized actions in the prioritized area. Furthermore, the integration would also allow M&E activity for actions undertaken under the program to be included in the city development plan. Hence this city-level engagement will ensure that local adaptation action will be adequately supported in long-term. From their experience and acquired knowledge and skill during risk assessment development process, the local government officials can use this approach for periodical M&E activity of the city development During proposal development process, by employing collaborative and participatory approach (on top of observation, interview

		and assessment), adaptation actions that will be implemented in the targeted area had been selected. Technical support will ensure that options with the highest resilience impact will be selected, as well as options that foster sustainable utilization of natural resources. The selected options should be complemented with implementation and financing scheme that can be replicated and disseminated to broader audience. This process of selecting on-target actions that have the highest impact will ensure the effectiveness of the selected actions in addressing climate change impact. The type of adaptation actions conducted in community level are similar to those that will be implemented at city level, particularly on aquaculture/farm pond, mangrove restoration and construction of sanitation facilities. This similarity is due to the fact that actions implemented at the targeted community will be treated as pilot measures for city-wide replication, allowing for evaluation on the implemented pilot scheme. This piloting approach is seen as cost-effective approach rather than implementing city-wide scale directly. This approach will assist in identifying weaknesses and strengths arise from the pilot process; where the weaknesses can be addressed and the strengths can be amplified for the purpose of city-wide replication. Alternatively, climate change adaptation and DRR planning activity can be implemented but in an unsustainable way and with a limited vulnerable target group (where the activity may not be suitable in future time since calculation will only be made on current risk)
3 Province Level Enhanced provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan, which fosters better climate-related policy on climate financing and bottom-up planning; and in turn driving cities and districts (particularly Pekalongan City) towards a more climate-resilient development	3.1.1 Enhanced provincial capacity to develop RAD API 3.2 appropriate strategy to integrate CCA into Provinciall government planning processes (annual work plan or mid-term development plan of city) is developed	Provincial government have limited authority on activities conducted at city level, yet they play significant role in vertical coordination and conveying national budget allocation for climate-related program/activity (provincial government responsible for one national budgeting channel to city). Considering this role, the program will not touch physical development at this level, merely capacity development and advocacy process. Thus activity at this level will be focusing on building provincial officials' knowledge on

		climate risk assessment so that they could develop risk assessment at province scale. This assessment and the corresponding RAD API will be the basis to build a synchronize adaptation action between city, province and national. Mainstreaming climate change adaptation and resilience into Central Java Province development plan could in turn foster better climate-related policy at provincial level and bottom-up planning. This approach is deemed as a cost-effective and resource-effective approach at provincial level to achieve the targeted objectives of the program Alternatively, climate change adaptation and DRR planning can be implemented without considering the city's/district's characteristics and needs, however the results will be most likely unsustainable
4 National 4.1 Strengthening vertical coordination and collaboration between national and local government in climate adaptation context and Enriching knowledge, toolkits and methodologies coastal resilience for the national government	1.1.1. Knowledge product in the form Handbook on how to use SIDIK for risk assessment at coastal city is published and shared. This handbook is targeted to be used by local government, NGOs and civil society organizations 1.1.2. Strengthened vertical coordination and collaboration between national and local government in climate adaptation context	SIDIK has significantly help cities and regencies in developing climate risk assessment. However SIDIK has drawbacks when being used to asses coastal city, resulting in an inaccurate assessment, which could consequently leads to the implementation of action that considered as maladaptation Since SIDIK cannot accurately assess the vulnerability and risk area with coastal characteristics, hence adjustment is needed when using SIDIK in Pekalongan City so as appropriate coastal resilience/adaptation actions are developed SIDIK adjustment for coastal area based on experience from Pekalongan City is expected to provide valuable lessons learned for other Indonesian coastal cities that intending to use SIDIK. Dissemination of this lessons learned is deemed as more efficient and cost-effective by developing SIDIK Handbook specifically for coastal city that accessible for coastal cities throughout Indonesia, rather than through knowledge sharing forum or training solely which often only attended by limited cities/representatives. Yet this handbook development does not necessarily means the materials will not be shared in such forum and trainings. This program will collaborate with national level platform in advocating climate resilience

		issue (ICA), including advocating lessons learned drawn from local experience, in which the handbook is amongst them. To date, adaptation action often implemented in silo manner by each level of government, so that the adaptation actions are not synchronized. At national level, the project is aiming to foster a stronger vertical coordination and collaboration between national and local government in climate adaptation context to make the local adaptation action synchronized with adaptation plan at the higher level of government. This objective is in sync with the line of work of the national platform that always thriving to foster bottom-up planning process in climate change context; connecting local experience with policy at different level of government. Having considered the similar objective, thus advocacy through national platform engine is deemed as the most cost-effective approach to foster vertical coordination. To date, the national platform itself is an active platform and had provided different climate resilience-related input to different line ministries in Indonesia. Riding on this platform is believed to more cost-effective in comparison to conducting the advocacy process on our own.

Proposed adaptive actions cost-effectiveness rationale

Adaptation Actions	Detailed activity	Alternative interventions and rationale why priority interventions/activities have been selected from a cost-effectiveness perspective
Community and City level	Individual and Communal Laterine	The alternative would be to construct drainage pipes in 8 communities in North. However, because of lower densities and other situations (i.e. , lower, land owneship) would not be cost effective. Moreover, possible drainage pipes channels considered would be less effective in addressing flash flood waters and sea level rise situations in North Pekalongan. Another alternative is to construct a sewerage system, but this is both not in the scope of the project and too ex-pensive. Moreover, with this approach, the most vulnera-ble / poor people will benefit.
	Coastal embankment by Geo-tube	Hard infrastructure embankment is too expensive. Geo-tube is less Ecosystem disruption from mobilization and construction process. And concept of sand traps from geo-tube system is part of natural development. However, we also realize that geo-tube construction is a risk-free solution. Geo-tube structure might face some structural challenges

		which stemmed from various sources, among others the climate change impact. Severe sea-level rise might cause the ineffectiveness of geo-tube structure.
	Aqualqulture (Vanamei Shrimp and fishpond/bandeng fish)	Another alternative is to do mangrove restoration and utilize mangrove products to become syrup products, but unfortunately the selling value is still low. The cultivation of crabs and tiger prawns has a high economic value, except that in 7 communities there are already no suitable conditions for the growth of shrimp and crabs. The selection of Bandeng (milkfish) or Nila (tilapia) saline cultivation which is still possible in accordance with the 7 communities. While for the community of Degayu, the water condition is still suitable for shrimp farming. current vanamei shrimp has a higher economic value than tiger shrimp and is suitable for water conditions in the community
	Integrated Mangrove plantation with fishpond and ecotourism	Planting mangroves along the coast is very good, but the challenges is in land ownership. More than 80% of the land is private land. the integration model of mangrove restoration with fishpond and ecotourism becomes attractive for private landowners to joint with the project, because they can have income from fishponds or ecotourism

90. **Activities proposed** in the proposal are **expected to be completed in three-year period.** The first year will be program preparation stage with activities that are mostly intended to strengthen local stakeholders' (including community) awareness and understanding on climate-related issue and also build their ownership on the program. Key studies and assessment conducted on this stage, not only will serve the purpose of building stakeholders' knowledge and awareness, but also ensuring that the proposed actions will not leads to mal-adaptation and further jeopardizing Pekalongan City sustainability. The studies and assessment is expected to be completed in 6-months time-frame. Afterwards, the program will focus in actions implementation. This arrangement is aimed to ensure the program to be completed in timely manner.

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.

I. This proposed program is consistent with the following institutional and policy framework and commitment at National Level:

1. First Nationally Determined Contributions (NDC) Republic of Indonesia

91. The document stated how the Government of Indonesia (GoI) will implement enhanced actions to study and map regional vulnerabilities as the basis of adaptation information system, and to strengthen institutional capacity and promulgation of climate change sensitive policies and regulations. It further emphasized the need for local capacity strengthening, improved knowledge management, convergent policy on climate change adaptation and disaster risks reduction, and also application of adaptive technology; in order to achieve the medium-term goal of Indonesia's climate change adaptation strategy which aiming to reduce risks on all development sectors. **The proposed approach of this program is in line with the NDC document by focusing on mapping area vulnerability and risk, fostering public and institutional capacity building and also advocating relevant policy**. Climate Risk Assessment and Climate Impact Assessment that will be conducted at community and city level will

provide vulnerability and risk map that will subsequently utilized to develop adaptation plan. This adaptation plan will then be integrated into local development plan and advocated to the higher governance level to ensure synergize climate-sensitive development plan from local to national. This sequence is in consistent with the First NDC of GoI where they see regional vulnerabilities as the basis of adaptation information system and foster climate-responsive policies.

2. National Action Plan for Climate Change Adaptation (RAN-API)

92. **Action Plan in RAN API is divided into 5 sectors** with Resilience of Special Areas as one of the sectors. This particular sector is further divided into 2 sub-sectors, one of which is Sub-sector of Coastal Area and Small Islands. There are 5 strategies developed for this sub-sector, which are:
    - Life stability of coastal and small islands communities against climate change threat;
    - Improvement of environmental quality of coastal areas and small islands;
    - Development of adaptation structures in coastal areas and small islands;
    - Adjustment of urban spatial plan by taking into account the risk of climate change;
    - Development and optimization of research and information system on climate change in coastal areas and small islands.

93. This proposed program aimed at delivering the abovementioned strategies in the form of different project components and outputs, including developing and implementing adaptation plan, mainstreaming process into local development plan and spatial plan, and also developing knowledge management platform. Pekalongan City is named as one of the pilot location of RAN API. A successful implementation of vertical approach within the program will set an example of synchronize planning to the other RAN API pilot area; in which RAN API also promote this vertical approach as part of their framework.

3. Law No. 32 Year 2009 on Environmental Protection and Management

94. Climate change issue was taken into account in 2 articles in Chapter 3 on The Development of Environmental Protection and Management Plan (RPPLH), which are:
    - Article 10 clause (2); which stating that climate change is one of the factors that need to be considered during the development of RPPLH
    - Article 10 clause (4); which stating that climate change adaptation and mitigation plan is among the contents of RPPLH

95. Considering that city and provincial government are obligated to develop their Environmental Protection and Management Plan, hence the **proposed program will assist the development process by providing and advocating the integration of climate risk assessment results** and the proposed adaptation actions into the plan.

4. Law No. 16 Year 2016 on Ratification of Paris Agreement to The United Nations Framework Convention On Climate Change

96. The ratification shows GOI commitment to its people as well as international community to address climate change issue, particularly considering Indonesia's characteristics as an archipelagic country that is vulnerable to climate change impact. Based on the global agreement, adaptation is aimed to increase adaptive capacity, strengthen resilience and reduce vulnerability to climate change. **This proposed program support the ratification by aiming to address climate change issue at city level while at the same time aiming to foster a better institutional framework for climate change realm**. Activities implemented under the program are aiming to build and strengthen coastal community resilience; by not only reducing their vulnerability (such as through mangrove restoration and geo-tube construction), but also increase their adaptive capacity (for instance by building latrine as sanitation facilities, developing vennamei shrimp aquaculture, and also developing ecotourism site and activities).

5. Government Regulation No. 2 Year 2015 on The National Midterm Development Plan (RPJMN) 2015 – 2019

97. In section 1.2.2-Climate Change and sub-section 1.2.2.1-Problems and strategic issues of the RPJMN, the decrease of Greenhouse Gas (GHG) emission (climate change mitigation) and improvement of

communities' resilience (climate change adaptation) were stated. The development of resilience coastal communities and communities that are aiming to be done by this program is in line with the RPJMN content. Furthermore, in RPJMN 2015-2019, the national government also set a target of Universal Access of Sanitation facilities in 2019; where the term Universal Access here means every population will be served with adequate sanitation facilities. **Construction of individual and communal latrine for coastal communities with no adequate access to sanitation facilities that will be done under the program will surely support the aforementioned government target.**

6. Presidential Decree No. 60 Year 2015 on Government Work Plan Year 2016

98. The general objective for the 2016 Work Plan is to "Accelerate Infrastructure Development to Strengthen the Qualitative Development" by focusing on 6 leading sectors, which are: food sovereignty, energy and electrical sovereignty, maritime, industry, tourism, and also innovation and technology. **The development of eco-tourism site in Degayu Community that complemented with geo-tube construction and mangrove restoration are amongst semi-hard and soft structures that will be developed during this program.** Not only contribute in the acceleration of infrastructure development on tourism sectors, the aforementioned actions will also assist in increasing the quality of life of the targeted coastal population in specific and Pekalongan City population in general.

7. Ministry of Environment and Forestry Regulation No. 33 Year 2016 on Guidance for the Development of Climate Change Adaptation Action

99. This regulation is the reference for national and local government to develop their climate change adaptation action plan and subsequently mainstreaming the plan into the corresponding development plan. The regulation states that identification of area/sector that will be the subject should be followed by climate vulnerability and risk assessment, prior to developing climate change adaptation actions and its implementation priorities. The actions then should be mainstreamed to the corresponding development plan, program and policy. As described on this proposal, **general approach and activities that are outlined for this program are referring to and in line with the abovementioned steps; ensuring program compliance to the said regulation.**

8. Ministry of Marine and Fisheries Regulation No. 23 Year 2016 on Management Plan of Coastal Area and Small Islands

100. This particular regulation was developed as a means to foster cross-level and cross-sector synergy in managing coastal area and small islands. The regulation states that the relevant strategic plan should consist of cross-sector policy directive for the dedicated development plan area through the development of objectives, targets, and broader strategy, as well as implementation targets that equipped with appropriate indicators to monitor the plan. It further states that the management plan should contain policy framework, procedure and responsibilities in the event of decision-making process among stakeholders regarding agreement on resource use or development activity in the designated zone. **The proposed program supports the regulation by fostering cross-level and cross-sector coordination in its approach**; involving not only government actors but also non-government institutions including lay public, driving multi-stakeholder involvement and coordination at any steps possible. Formation and operationalization of community and city climate working group as well as implementation of the arranged coordination line under the program is the example of this cross-level and cross-sector synergy. The development process of city development plan that take account of program's vertical approach and results further demonstrate how the city policy directive are made with a synergized process across different level and different sector.

9. Vulnerability Index Data Information System (2015) developed by Adaptation Directorate, Directorate General of Climate Change Control, Ministry of Environment and Forestry

101. Preliminary assessment by utilizing standardized data in SIDIK shows that there are 15 vulnerable communities located in the coastal area of Central Java Province (including Pekalongan City); where some of them are severely affected by sea level rise. The selection of Pekalongan City coastal area as the geographical scope is in line with this preliminary assessment. However at the moment, SIDIK is not compatible to be utilized by coastal area to assess their vulnerability, since coastal characteristics

had not been fully considered in SIDIK method. **Hence this program is aiming to refine SIDIK with recommendations on coastal indicator that can be included in SIDIK to better illustrate the vulnerability of coastal area**, so that local government of coastal city/district could utilize SIDIK results for their local plan and policy.

II. This proposed program is also consistent with the following institutional and policy framework and commitment at Provincial and City Level:

1. *Central Java Province Local Regulation No. 9 Year 2009 on Management of Coastal Area and Small Islands*
2. *Central Java Province Local Regulation No. 4 Year 2014 on 2014-2034 Zoning Plan of Central Java Province Coastal Area and Small Islands (RZWP3K)*
3. *Central Java Province Local Regulation No. 5 Year 2014 on 2013-2018 Mid-term Development Plan (RPJMD) of Central Java Province*
4. *Central Java Governor Regulation No. 1 Year 2011 on Strategic Plan of Central Java Province Coastal Area and Small Islands*

5. Pekalongan City Local Regulation No. 4 Year 2010 on Zoning Plan of Pekalongan City Coastal Area (RZWP)

102. **RZWP document is a long-term planning document that is aiming to create a balance between development needs and conservation efforts by creating a sound planning, management and development of coastal area**. Capacity building and community-based planning are amongst fundamental principle for this document. The geographical scope of this RZWP is 6 communities located within Pekalongan Utara sub-district that directly interfacing Java Sea or affected by activities conducted at coastal area and the sea. **These 6 communities are among 9 communities that are selected as the geographical scope for this proposed program**, and thus the program is consistent with the aforementioned Local Regulation.

6. Pekalongan City Local Regulation No. 4 Year 2016 on 2016-2021 Mid-Term Development Plan (RPJMD) of Pekalongan City

103. Improvement of environmental carrying capacity and infrastructure is among strategic issues stated in the RPJMD document, in which flash flood and coastal flood were acknowledged as issues that driven the need for the improvement. The local government is targeting a reduction of inundated area to 37.57% in 2018 by building and strengthening flood (both flash and coastal flood) prevention and control infrastructure. In the same year, the government is also targeting 37% of the generated solid waste to be managed at 3R facilities; reducing the volume that being disposed at drainage channel and/or river. **The proposed program will support this inundation reduction target by constructing semi-hard structure in the forms of geo-tube to protect coastal area from coastal flooding**. In addition to that, mangrove restoration is also deemed as the most suitable and feasible flood prevention action that can be implemented under the program.

7. Pekalongan City Local Regulation No. 7 Year 2012 on The Border

104. Articles 16 of city local regulation no 7/2012 states that the building boundary line to the coast is 100 meters from the highest tide point to the land and on article, and then articles 26 states that Reservoir, river and coast border areas can be utilized by the community / agency / institution / agency for the following activities: a. agricultural cultivation with types of perennials that function as protected; b. limited tourism activities; c. construction of water traffic infrastructure and water collection buildings; d. installation of billboards, extension boards and warnings, and job signs; e. utility network placement; f. the road to the location.; The utilization of the border area may not reduce its protected function and must obtain permission from the Mayor through the Office in accordance with the applicable laws and regulations. This in line with the project for mangrove restoration and aquaculture activities.

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.

1. Presidential Regulation No. 38 Year 2015 on Public Private Partnership (PPP)

105. Issued on 20 March 2015, the regulation revokes and replaces the Presidential Regulation No. 67 Year 2005. This regulation strengthens the role of GoI in providing Infrastructure Guarantee, and thus increasing the creditworthiness/bankability of PPP infrastructure; developing sound procedures for granting security over project finance; reducing financial risk for both investor and project proponent. GoI is continually driving the PPP scheme as the backbone for infrastructure financing.

106. For the pre-selected adaptation actions, **PPP will be implemented during implementation of vennamei shrimp aquaculture and bandeng pond farm at city level**. Revolving fund scheme that will be supplied in the form of micro loan to the community will be managed under private financial institutions. Financing scheme for these PPP measures, including one that will be implemented for the pre-selected adaptation actions will take account of the content of the abovementioned Presidential Regulation.

2. Ministry of Environment and Forestry Regulation No. 33 Year 2016 on Guidance for the Development of Climate Change Adaptation Action

107. Approach for the proposed program is designed by following steps elaborated in the particular regulation; from area and sector identification, developing climate risk assessment up to developing the corresponding adaptation plan and mainstreaming process to the relevant development and spatial plan, program and policy. Assessment during the full proposal development process shows that no adjustment will be made to the steps provided in the guideline since the local characteristics are in accordance with conditions that had been stated in the guidance.

3. Ministry of Marine and Fisheries Regulation No. 16 Year 2008 on Management Plan of Coastal Area and Small Islands

108. According to Chapter 2 Article 2 of the regulation, this particular regulation is the norm, standard, and guidance for local governments (provincial and district levels) to develop their areas management plan of coastal area and small islands. Steps taken in this proposed program have considered and been in line with the planning principle elaborated in the regulation, including:

- In accordance with and/or complementing the local development plan system
- Integrate different activities of diverse stakeholders, including private sector and community; as well as activities relevant to both land and sea ecosystem
- Undertaken in accordance with the area's characteristics and potential
- Involvement of local community and other stakeholders

109. **The approach and methodology for this proposed program are also designed by taking into consideration the abovementioned principles**. Activities and planning process will be undertaken in line with the applied development planning system at local, provincial and national level; with multi-stakeholders involvement at the core by involving lay public in the planning process and private sector in the future stage to create public-private partnership in implementing adaptation actions.

4. Strategic Environmental Assessment as Compulsory Assessment in Spatial Plan and Development Plan

110. **Climate vulnerability and risk assessment is one of 6 analysis options needed for the development of Strategic Environmental Assessment (SEA);** in which the SEA itself is a compulsory assessment in the development and/or evaluation process of Spatial Plan and Development Plan. To date, there is no standardized step in specific manner (only general approach available) to develop the SEA; the proponent could use only the CRA result to develop SEA and subsequently benchmark the contents of the proposed plan with the CRA. Relevant to this program, to advocate the integration of CRA into SEA process, the proposed program will follow the nationally standardized steps of SEA; from issue identification to adjustment recommendation for the benchmarked plan.

1. *Ministry of Environment Regulation No. 5 Year 2012 on Types of Activities that Require AMDAL*
2. *Ministry of Environment Regulation No. 16 Year 2012 on Guidance to Develop Environmental Document (AMDAL, UKL-UPL and SPPL)*
3. *Ministry of Environment Regulation No. 8 Year 2013 on Procedure for Assessment and Checking of Environmental Document, as well as Environmental Permit Issuance*

4. *Ministry of Public Works Regulation No. 10 Year 2008 on Types of Activities under Public Works Sector that Require UKL/UPL*

111. For Environmental Impact Assessment (EIA), Appendix 1 of the Ministry of Environment Regulation No. 5 Year 2012 (PermenLH 5/2012) listed types of activities that require AMDAL/EIA prior to its construction. Hence for this program, EIA will only need to be done for adaptation actions that included in the list; otherwise EIA is not compulsory to be undertaken and will be replaced by Environmental Management Measures and Environmental Monitoring Measures (UKL-UPL) document. Referring to PermenLH 5/2012 content, figure 11 illustrates environmental document screening process need to be done to any projects that will be implemented in Indonesia, including adaptation actions under the program.

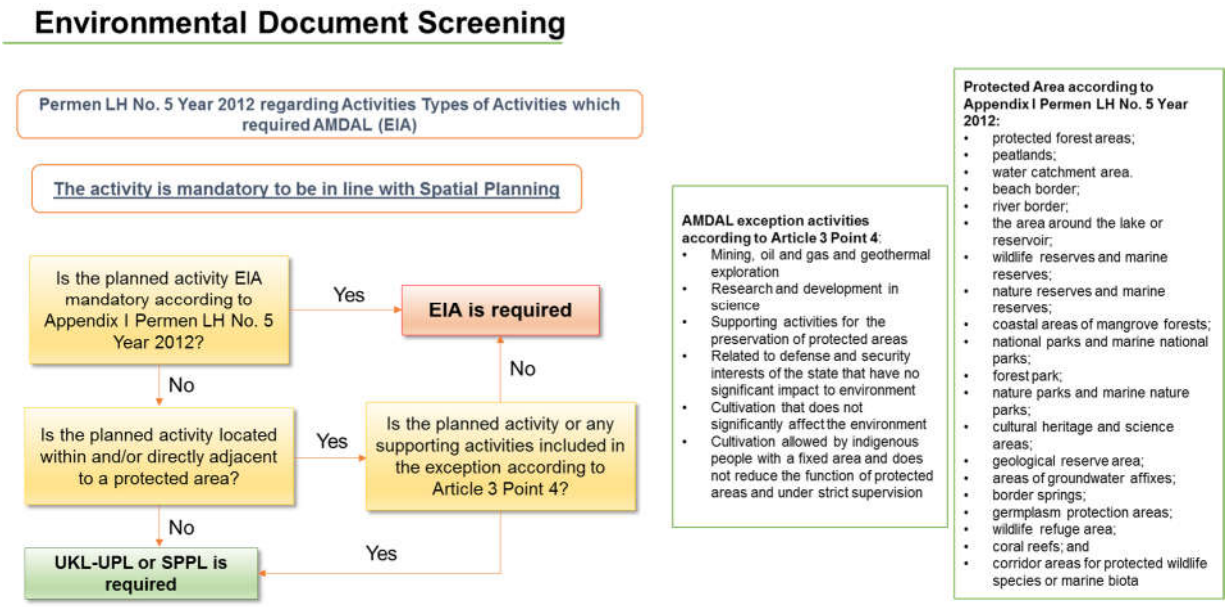


Figure 11. Environmental Document Screening Process

112. **Each of the selected adaptation action has been screened against the EIA-compulsory activities list** and the results show that the actions are not categorized as activities that need to be complemented by EIA. The next process then identified whether the actions are located within and/or directly adjacent to a protected area; where the term protected area here is define as different areas listed in Figure 11. Results from this screening process are;

- **Individual and communal latrine**; not included in the EIA compulsory list and not located within and/or directly adjacent to a protected area. Further benchmarking utilizing Ministry of Public Works Regulation 10/2008, the construction of individual and communal toilet is not categorized as project/activity that needs to develop UKL/UPL. Accordingly, the program implementer only needs to submit Environmental Management Statement Letter (SPPL).
- **Eco-tourism;** not included in the EIA compulsory list, but located within and/or directly adjacent to a protected area (coastal border). However, seeing how the eco-tourism site is aiming to protect the environment while at the same time provide natural tourism for the community, the activity is included in the exception listed in Article 3 Point 4 of PermenLH 5/2012 (preservation of protected area). Accordingly, the program implementer should submit UKL-UPL
- **Aquaculture (vennamei and bandeng) farm:** the proposed action will be implemented in an area less than 50Ha (for each site), hence the action is not categorized as requiring EIA. Despite the farm will be located within a protected area (coastal border), however the activity is included in the exception listed in Article 3 Point 4 of PermenLH 5/2012 (cultivation that does not significantly affect the environment); and thus according to the screening diagram, it should be followed by UKL-UPL.

- **Geo-tube construction;** the total length for geo-tube construction under the program will be 1400 m. However, this total length will not be constructed continuously along the coastal line of Degayu Community and Kandang Panjang Vilage, since some coastline section had been protected by concrete embankment and geo-tube, and other sections are river estuary. Geo-tube construction will be done in area within Degayu Community that has not been protected (such as in front of ecotourism site and potential aquaculture farm site); fill in the gap between government embankments and create a better coastal protection structure. Considering this non continuous manner, the particular option is thus not categorized as requiring EIA. Conducting further process under the screening diagram show that the construction will be located within a protected area (coastal border), however the activity is included in the exception listed in Article 3 Point 4 of PermenLH 5/2012 (supporting activities for the preservation of the protected areas); and thus according to the screening diagram, it should be followed by UKL-UPL.
- **Mangrove restoration:** the proposed action is not categorized as requiring EIA, but instead supports the preservation of protected area.

113. To conclude:

- **Aquaculture, eco-tourism and geo-tube construction are all located within and/or directly adjacent to protected area** but those activities are classified as EIA exception activities as per article 3 point 4 since they are considered as cultivation that does not significantly affect the environment and supporting activities to the preservation of protected area. As such, they do not need to submit EIA, instead replaced by UKL/UPL.
- The size of individual and communal latrine proposed in the program does not categorized as activities that need to be complemented by EIA.
- Mangrove restoration with a size that is proposed in this program is not included in PermenLH 5/2012 as activities that required to have EIA.

114. Despite the adaptation actions are not categorized as requiring EIA, **PMU will assure that all activities will not pose adverse impacts to the surrounding environment by implementing the needed mitigation measures**; including implement environmental rehabilitation if the activities contaminate the area.. As an initial assessment, this proposal document also contains initial findings on environmental and social risks from the program, which elaborated on Part II - Section K as well as on the Environmental and Social Management Plan (ESMP). PMU will also continue to monitor any potential risks that had not been identified at this moment and might arise during program implementation, and will carry out the necessary mitigation measures. The development of climate risk assessment, UKL-UPL, SPPL and ESMP within the program will ensure that environmental and social impacts and risks are being considered, assessed and addressed throughout the project.

1. *Indonesia National Standard on Design Procedure for Septic Tank with Infiltration System and Latrine*
2. *Housing Construction and Development Standard from Ministry of Public Works*

115. **Hard structure that will be constructed as part of the proposed program in future time will be ensured to conform with building codes**, especially since conformity to the codes is the primary requirements for granting the building license. For hard structure that serve as public facility, the construction and development will be ensured to follow infrastructure construction and development standard from Ministry of Public Works and Housing as well as Indonesia National Standard. Construction of sanitation facilities will be among the selected adaptation actions under this program. The facilities' design and construction process will adhere to the aforementioned applicable standard to prevent negative impacts to the surrounding environment.

116. **The construction of latrine and septic tank** (on-site waste water treatment system), both individual and communal facilities, **will follow the requirements stated in Indonesia National Standard on Design Procedure for Septic Tank with Infiltration System** (SNI 03-2398-2002) and Indonesia National Standard on Design Procedure for Latrine (SNI 03-2399-2002). Design approval and the corresponding environmental permit will be issued by the agency prior to facilities construction.

117. In comparison to the previous version of proposal, there are two regulatory frameworks/standards that omitted from this latest proposal version, which are the **Water Supply Regulatory Framework** and **Building Codes**. For Water Supply Regulatory Framework, the omission is due to the fact that based on discussion with city stakeholders (including local community), water supply facility will not be included as the selected adaptation actions; and thus this particular regulatory framework has no relevancy to the program. Meanwhile for building codes, the omission is due to its irrelevancy with the selected adaptation actions under this program. Indonesia National Standard (SNI) is deemed as more relevant to the actions in comparison to building codes standard. At the moment, Indonesia Building Codes and Indonesia National Standard only apply to some activies; and the proposed activities within the program (with the exception of latrines) are not among the activities that are regulated by building codes and national standard. The submission of UKL/UPL and SPPL are deemed as adequate to obtain relevant environmental permit

118. Furthermore, in relation to land-ownership issue mentioned in the earlier part of the proposal document, **land tenure policy** (Presidential Regulation No. 71 Year 2012 on Land Procurement for Development Purposes) will not take effect in this program since awareness buiding approach that will be taken under the program is expected to create land-owner willingness to allocate their land for mangrove restoration site. This decision for not conducting land procurement process had been discussed and agreed by the city government.

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

PAKLIM GIZ-ICLEI Oceania

119. Pekalongan City had collaborated with external parties in climate change issue. **In 2010, this city was among 8 pilot cities in Central and East Java Province that implement Integrated Climate Action approach that was developed by PAKLIM GIZ and ICLEI Oceania**. Based on this approach, the city was able to develop Climate Risk and Greenhouse Gas Emission Profile; in which the risk profile methodology employs a more qualitative approach, with participants perception became the basis for the profile. Following the profile, the city with assistance from PAKLIM GIZ thus developed Integrated City Climate Strategy which outlining climate mitigation and adaptation strategy that detailed into corresponding actions. Several actions in ICCS had been inserted into RPJMD of Pekalongan City, receiving funding from local government budget. PAKLIM GIZ does not provide further funding assistance for the city after ICCS development and their intervention in Pekalongan City had ended in 2014.

ACCCRN-Mercy Corps Indonesia

120. Other external party that works closely in Pekalongan City is **Mercy Corps Indonesia (MCI)**, where one of the organization's programs is run in the said city, which is **Asian Cities Climate Change Resilience Network (ACCCRN)**. This program is aiming to build climate change resilience knowledge in the city. Pekalongan City was selected as ACCCRN Replication City, and the program was commenced in 2013. ACCCRN in Pekalongan City was focusing on capacity building for community and local government on climate change issue. This capacity building process includes not only series of training and discussion in the city, but also involving Pekalongan City local officials and practitioners in different knowledge sharing event outside Pekalongan. Yet the trainings and discussions conducted were none on the topic of quantitative climate risk assessment. Starting last year, ACCCRN is in its closing phase and the program finished its implementation by the end of 2017, hence there is no more funding assistance given to the city. Pekalongan City Team was established as part of ACCCRN program with member comprises of representative from local government officials, academics, practitioners and local NGOs. This team's main role is building climate change awareness in the city and fostering the implementation of adaptation actions under the umbrella ACCCRN program. This program will reactivate the working group that will work closely with the program's PMU. Aside from the city team, this particular program will also draw upon lessons from the implementation of adaptation actions under ACCCRN program; where it fails and where it succeeded, including reflecting on the sustainability of the implemented actions.

JICA

121. At a higher government level, Central Java Province had work closely with **Japan International Cooperation Agency (JICA)**, specifically in implementing Project of **Capacity Development for Climate Change Strategies in Indonesia (2010-2015).** The main activity from the collaboration was mainstreaming adaptation/mitigation of climate change in National Development Planning, with Central Java as part of the scope. JICA had also developed study on Integrating Climate Change Adaptation into Spatial Planning Policies at 2 pilot sites which are 1) Java

Island and 2) South Sulawesi (West & South coastal area, Selayar). Among the output of the study is recommendation on integration mechanism of adaptation plan into spatial planning. The JICA program is completed in 2015, hence the proposed program will not overlap with JICA funding. Seeing that the mechanism is developed at a higher government level that has to cater to different city/regency characteristics in tis planning proves, but on the other hand considering the fact that Pekalongan City is part of Central Java Province that will somewhat affected by planning conducted at provincial level, hence this program will learn from JICA study on mainstreaming and integration mechanism, and assess whether the proposed mechanism can be applied in Pekalongan City context and how to adjust the mechanism.

Central River Region Pemali Juana (Directorate Generale Water Resources, Ministry of Public Works

122. Earlier this year, the **Central River Region Pemall Juana (BBWS Pemali Juana)** start the **construction of cross-boundary dam that intended to protect Pekalongan City and Pekalongan District from coastal flooding**; where the construction process is expected to be completed in 2019. This project is done in collaboration between BBWS Pemali Juana, Central Java Province, Pekalongan District and Pekalongan City. In Pekalongan City, the dam is constructed in Bandengan Community which located in the western part of Pekalongan. Considering this information, thus coastal embankment planned in the program will complement this BBWS project, and will be built in the eastern part of Pekalongan City, specifically in Degayu Community (see Figure 11 below).

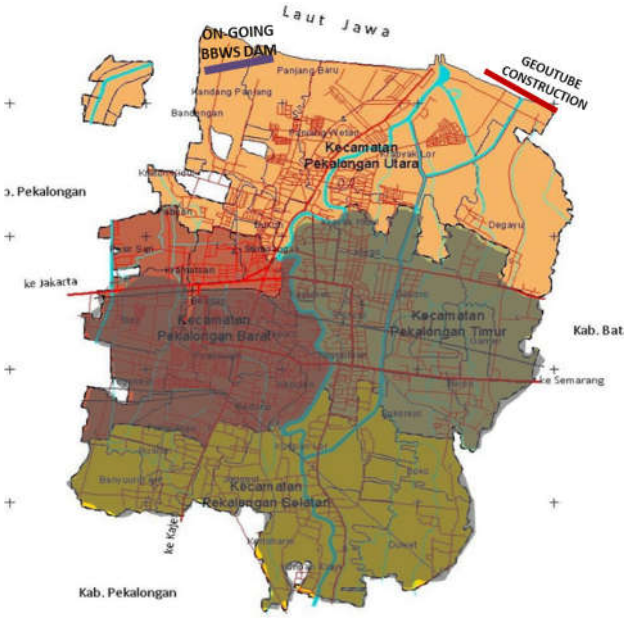


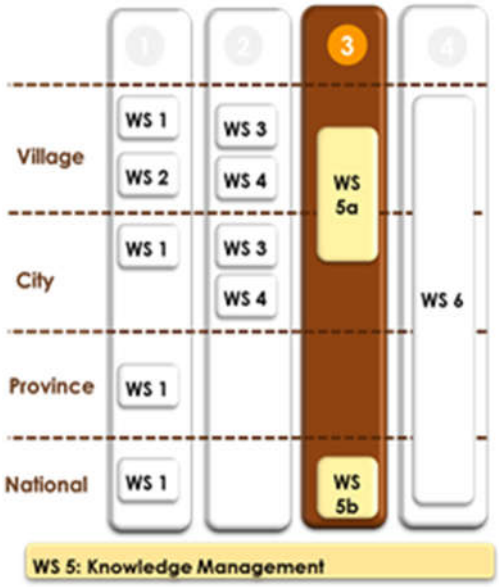
Figure 11. Location of BBWS Pemali Juana Dam and Geo-tube Construction

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

123. The knowledge management component will contain **activities that capture and disseminate both tacit and intrinsic knowledge**. For tacit knowledge, climate change training and knowledge exchange activities will serve as information and experience sharing media. These such forums will facilitate learning and co-creation of opportunities for various stakeholders. The intrinsic knowledge will be captured through more traditional methods, by conducting research that can be disseminated to government, practitioners, academic community and also general public. The output of the research could be both in form of knowledge product or advocacy material.

124. The overall knowledge transfer process is under component 3 and component 4. **Component 3 provides the cornerstone for capturing and disseminating lessons learned**, other project components / activities directly contributing to knowledge management and dissemination mechanisms from community to city and inter-regional levels, while **component 4 focuses more on share learning from the local to the national level**.

125.



126. Figure 12. Knowledge Management Component is Embedded at Different Level of Governance

127. **At community level**, a participatory approach (involving communities and local authorities in conduct community based risk assessment, planning and implementation activities) will lead to increased local knowledge on climate change adaptation. Project demonstration sites will contribute, from the start and in an ongoing way, to share lessons and training through local disseminators and tools and guidelines. Knowledge dissemination tools that will be utilized in the proposed program encompassing regular newsletter, social media platform and knowledge board (contain information on climate-related issue as well as program progress) in community centre or community office. Lessons learned obtain at this level will also be communicated to stakeholders at city level.

128. **At city level**, transfer of results and lessons learned to other communities across community and broader city area will be promoted. The program's knowledge management product will be disseminated not only to Pekalongan City and Central Java Province area, but also broader community. For Pekalongan City dissemination, the project management team will collaborate with the existing knowledge sharing platform, the Mangrove Information Centre (Pusat Informasi Mangrove/PIM). At the moment, PIM is focusing only on mangrove issue, however preliminary discussion with PIM shows that the organization is highly willing to broaden their scope to incorporate climate change resilience issue. In this project **PIM will play a major role at city level in disseminating knowledge product and program benefit to wider city stakeholders**, thus will be facilitated through an online knowledge hub that will include capacity-building webinars, technical documents, multi-media knowledge products thus will be developed as a information and training centre for climate adaptation action.

129. **At national level**, Will use two approaches, **First approach is supporting the Ministry of Environment and Forestry (MoEF) to make improvements SIDIK** to suitable for coastal risk assessment based on pilot in pekalongan city. One knowledge product that will be the output for the proposed program is Handbook on SIDIK for Coastal Risk Assessment that can be used by local government, NGOs and Civil Society Organizations. The handbook development will be based on climate risk assessment process conducted at city level. Related to advocacy material, the research will be the basis for developing policy briefs that highlight the shortcomings in national policy, fiscal and other institutional framework in developing a resilience coastal city. A direct linkage will be established, through the partnering MoEF, ICA and Apeksi facilitating countrywide dissemination to other cities/regencies, NGOs and Civil Society Organizations.

130. **Second approach is the project management team will actively engage with the existing national climate change platform**, the Indonesia Climate Alliance (ICA). ICA member consists of

different national level organizations that share the same interest in climate change issue. This collaboration will assist the team to share experience from local context and elevate the issue at national level, as well as advocating the developed policy brief. Throughout the course of the program, an active communication and discussion will be conducted with the platform to advocate lessons learned from local experience in Pekalongan City as well as on common interests. During the program period, the program will apply as the platform member.

131. Additionally, the **proposed program also has Monitoring and Evaluation Unit** as part of the project management team. This unit responsible for knowledge management and sharing within project team member, organizing knowledge sharing event and outreach, and conducting pre and post-test survey on given interventions for evaluation purpose. All those activities will be documented, reported and made available.

132. Knowledge management in this program tries to **link science, implementation, management and policy both horizontally (between different sector) and vertically (between different government level)**. Changes in science could affect implementation strategy and subsequently alter how the project being managed, and consequently affecting the advocacy process. Considering the dynamics of this link, adaptive management approach thus became an important factor here. PMU will exercise adaptive management approach in program implementation, by emphasizing 'learning and adapting' context, through partnerships with diverse community and city stakeholders; allowing them to work and learn together with the stakeholders in building a sustainable Pekalongan City. Adaptive management approach will allow PMU to acknowledge the existence of uncertainty and provide them with flexibility to work around the emerging issue; giving them space for adjustment in order to achieve the targeted objectives.

133. **Involvement of diverse stakeholders within the working group**, as well as building knowledge management platform are considered as the two main factors that could decide upon the sustainability of knowledge management strategy outcomes after the program period is ended. These efforts enable the generated knowledge to be disseminated to wider stakeholders, and not only those directly involved in the program; creating a potential for replication in other area by other actors. During the course of the program, the knowledge management platform will be used effectively and regularly to disseminate information as measure to build stakeholders need on climate-related information, open up their perspective on the benefit that can be obtained by interacting with the platform as well as nurturing knowledge sharing habit. It is expected that by creating this need on information and realizing on benefit that they could get, the stakeholders will have a sense of ownership to the platform and work together to maintain its operation in future time, after the program is ended.

134. Furthermore, building upon this sense of need and ownership, **PMU will work with city working group to search for a host for the platform and integrate platform management into local development plan**. The host is needed to allow government funding stream to flow to the platform. The proposed host for the platform is Pekalongan City BAPPEDA as the leading sector for development planning. This particular institution does not have a specific work focus, instead they deals with diverse development issue. Climate change and coastal resilience are considered as development issue, and thus BAPPEDA will be the most appropriate host for the platform. A successful integration into local development plan will ensure that the platform will get continual budget allocation from the local government. To successfully advocate this integration, community working group will prepare a case study that will show the positive correlation between platform existence and successful implementation of adaptation action.

135. **PIM is a local platform in Pekalongan City that specifically works in mangrove-related issue.** Despite the program also touch mangrove context, however the platform that will be developed at city level will not be focusing on mangrove, instead on climate change and coastal resilience. Thus PIM and the future platform will complement each other and could implement cross-learning mechanism.

136. Meanwhile **ICA is a national level platform that works around general resilience issue**. The proposed city-scale platform will not overlap and duplicate ICA efforts since both have a different scale (local vs national level platform). Moreover, during its implementation period, the proposed program will

join ICA and use ICA as a vehicle for national advocacy process. This advocacy collaboration is feasible since ICA also has common interest in coastal resilience issue. Information and lessons learned at community and city level will be communicated by PMU in regular ICA meeting as a part of advocacy material to the national government. Hence ICA and the future local platform complement each other by drawing upon common interest for advocacy. Without the existence of a nationally-known advocacy partners, such ICA, it will be difficult to get traction for advocacy process at national level.

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

We have conducted consultations with different stakeholders at various levels to ensure that the we are able to build a proposal which represent the needs and the interests of all stakeholders related to the climate-change adaptation in Pekalongan City. Below are descriptions of some of the consultation processes. We summarize the consultations processes in a table that can be accessed in Annex 7.

Consultation with community members and Planning Bureau of Pekalongan City

137. Mobility constraint and lack of involvement in decision-making process are two main barriers for women participation regarding CCA activities. In this program, women representative, both full-time working and housewife, will be included as working group member. The meetings will be scheduled to be taken place in days and times that are feasible for them, and the other member, to attend; for instance during weekend morning or afternoon. The regular meeting will not only allow them to voice relevant information, thoughts and experiences on that matter but also act as a consultation room to share the related problems. In a more informal setting, these women representative will be urged to approach their women 'colleagues' that are not involved as working group member, gather their opinion and share it during the meetings as appropriate.

138. To follow up initial consultation, individual consultations were conducted with Bandengan, Kandang Panjang and Degayu community representatives. So in total, 4 communities were consulted individually in concept and proposal development process, which are: Tirto, Bandengan, Kandang Panjang and Degayu Community; meanwhile the representatives of other communities were unable to be met individually. However they, -including the women group representative-, attended and actively participated in the 3 (three) separate Focus Group Discussion events discussing:

- Potential Adaptation Activities at Community and City Level;

- Gender Aspect; and
- Framework and Potential Implementation of the Proposed Program.]

139. One issue being raised by the former Pekalongan City Mayor during consultation process is **on land ownership issue**. Except from geo-tube and ecotourism locations, as well as some are for mangrove restoration which had been confirmed as government land, the decision upon which specific area for activities' implementation will be discussed during early in program implementation stage. From consultation process (interview and FGD), the local community are very welcome and support the proposed activities. They believe latrine construction and improvement of aquaculture activities could enhance their quality of life, and thus there will be no issue on land ownership. They will not oppose to program implementation in their land. But for mangrove restoration, there is a small risk that land ownership could hinder the activities. During proposal development stage, identification has been made on potential mangrove restoration area that are owned by the government, such as in the vicinity of eco-tourism site, PIM, geo-tube area etc. If during discussion process (early in program implementation stage), there are private land that will be suitable for mangrove restoration, the following measures will be undertaken. The main focus to address this issue is in building community perspective and awareness on the benefit of turning unproductive land into something that benefit them as a whole community, and not merely individual benefit. This awareness building process will be done by conducting workshops on climate adaptation action and coastal resilience, where among the workshop material will be the importance of mangrove restoration for coastal protection, including for protection their dwelling and neighbourhood. The workshop is expected to build their knowledge and awareness on mangrove function. Additionally, during the workshop, the community wil also be informed that not all of their land will be utilized for mangrove restoration activity; only selected one. Furthermore, considering its current condition as unproductive land, utilizing the land as mangrove restoration site will not result in economic loss for the community, instead benefit them by protecting their area. The workshop itself will be done by the PMU in collaboration with community working group. Aside from their involvement in the workshop process, community working group will also be tasked to **conduct a more personal and informal approach to the land owner that identified as hesitant to 'donate' their land for mangrove restoration; persuade and build their awareness on the issue at hand, and how they can support in addressing the issue.**

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

Component	Baseline	Additional (with AF)
Community Level Enhancing coastal community capacity in developing and implementing Climate change adaptation actions and community information system	• Local actors have limited capacity to prepare for and respond to climate change and natural hazards • The most vulnerable areas and groups receive limited infrastructure support and no targeted object to receive resilience building support because of limited capacity and resources. • Detailed/specific cli-mate change threat and hazard infor-mation / evidence is not available at community scale in Pekalongan City, which means the local govern-ment and communi-ties can't plan for appropriate adaptation actions	• Local actors and communities are enabled to prepare for and respond to climate change and natural hazards • The vulnerable groups in coastal areas are targeted and appropriate resilience measures • Participatory Climate risk assessmet by community will enhance community awareness and capacity to develop community adaptation actions thus how to mainstreaming into community development plan
City Level Enhancing local government and other city stakeholders' capacity in developing local climate change adaptation action	• Lack of capacity of the local governments officer and related stakeholders to lead climate change adaptation and disaster risk reduction plan • Any interventions in the proposed intervention areas will continue as small-scale and stand-alone projects, that lack	• Local governments and related stakeholders can lead climate change adaptation action and disaster risk reduction plan thus mainstreaming into city development plan

Component	Baseline	Additional (with AF)
plan (RAD API) and implement Climate smart	integration and miss important opportunities for synergies. They also will not consider the impact of future climate change and the need to include consideration in the design of community level interventions. • The most vulnerable communities are not targeted/reached	• City government and climate stakeholders will have ability to develop a climate-smart approach that builds resilience to current climate variability and future climate change and specifically tackles the gendered inequalities around climate change. The integrated approach, grounded in local community development plans and a gender responsive approach, will enable interventions that are consistent with the National Action Plan on Climate Adaptation Actions (RAN API) to be implemented at the local level • The most vulnerable communities are the main beneficiaries of the project
Province Level Strengthening vertical coordination by enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan, which in turn could foster better climate-related policy on climate financing and bottom-up planning	• Lacking capacity of provincial government officer to put forward climate change adaptation issue in development plan as well as incapability to lead by example in mainstreaming the issue	• Provincial government officers have the capacity to promote climate change adaptation action plan and mainstream the said plan into development plan, setting out example and support all cities and regencies within its administrative region to do the same
National Level Strengthening vertical coordination and collaboration between national and local government in climate adaptation context and Enriching knowledge, toolkits and methodologies coastal resilience for the national government	• SIDIK unable to appropriately and accurately assess the vulnerability and risk of coastal region • Adaptation programs planned at ministry level (national level) often incompatible with the needs of adaptation actions at city/local level	• SIDIK is improved and able to appropriately assess vulnerability and risk of area that has coastal characteristics • Ministries and local government collaborate and cooperate to implement the appropriate adaptation actions

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

140. As mentioned in the previous section of this proposal, this program is aiming to address multifaceted issue in coastal area, specifically those related to climate change impact; fostering coastal resilience building in the area. Seeing the considerable benefit trying to be achieved by the program, it is thus important to ensure the sustainability of the program in order to spread out the benefit to wider community. Approach taken for this program rely heavily on **stakeholders involvement and collaboration**, hence the derived activities for those two aspects are designed to ensure the program's sustainability.

Building Sense of Ownership at Community and City Level

- **Community Level**

141. At community level, **benefit arises from the existence of adaptation actions and the alternative livelihood will directly affect community's life in tangible manner**. Their financial capital will be strengthened from the combination of increases of income and decreases of disaster-related expenses. Their income will increase from the alternative livelihood and better management of the fishing practices, while their physical environment will be better protected from coastal hazards such as coastal flooding, and thus reducing their household expenses in dealing with this such hazard. To further ensure the sense of ownership will always be maintained**, a local NGO will continue to work closely with community working group** to share their knowledge on the issue, including on matters relevant to new alternative livelihood. This local NGO is a member of city team and have been working with the targeted local community for a period of time, and thus they will be committed to maintain the program's outcome in the targeted area.

dCity Level

142. Meanwhile for the city, these actions and livelihood will increase their GDP from fisheries and tourism sector as well as reduce their expenses in infrastructure repair/rehabilitation due to coastal-related hazard. Seeing how the activities positively affect their GDP, the local government will be driven to maintain the existing activities and further replicate/scale-up the activities in other location within their administration area. Regarding fisheries and tourism sector programs, the regional government has also allocated a budget for the 2016-2021 midterm development plan for the development of aquaculture is Rp. 6,155,000,000, coastal rehabilitation is Rp 1,075,000,000, conservation iks Rp. 205,000,000 and the development of a Torusirm partnership, including ecotourism is Rp. 2,625,000,000

Knowledge Platform Establishment and Engagement

143. Multi-stakeholder involvement and knowledge platform engagement within the program is also designed to allow program sustainability. It enables knowledge to be disseminated to diverse actors, and not only one single entity. Allowing projects and lessons learned to be disseminated, replicated and even expanded. The existence and operationalization of this platform will support the effort in building a sense of ownership to the program and its benefit. The more people take ownership, the more sustainable the program will be. Concurrently, the sustainability of this platform will be maintained.

City Level

144. The local knowledge platform (PIM) will play a major role at city level in disseminating knowledge product and program benefit to wider city stakeholders. This role will support in **building a sense of ownership to the actions and alternative livelihood produced under the program.** During the implementation stage, particularly the workshop series, the program will build the sense of need and importance of this platform as a knowledge sharing media by emphasizing the significance of regular multi-stakeholder discussion in addressing climate change impact in their area. The stakeholders will also be trained to share their relevant achievement and issues in this platform. Having built their sense of need and issue/knowledge sharing habit, it is expected that in future time, they will turn to this platform if they encounter opportunities and/or threat to the adaptation actions and alternative livelihood.

- **National Level**

145. National knowledge sharing platform (ICA) has been established and actively operationalized prior to the program development. Throughout the course of the program, an active communication and discussion will be conducted with the platform to **advocate lessons learned from local experience in Pekalongan City as well as on common interests**. During the program period, the program will apply as the platform member. This membership will end after the program ended, and the advocacy for Pekalongan City lessons learned and interest will be taken over by APEKSI who is also ICA member. APEKSI is the national association for city government in Indonesia, where Pekalongan City is among the member.

Program Mainstreaming at City Level

146. Aside from community, this program place **government institutions as the core subject**. Hence, other means to ensure program sustainability relies on government involvement. During the program period, the adaptation actions will still be conducted under the program umbrella but in parallel, PMU will advocate the actions to the city government to enhance their awareness on the benefit of the action; driving them to preserve and replicate the action. City government institution that will be the advocacy target might be different for each action, depending on the work area of the said institution. Coastal embankment will be advocated to BAPPEDA, Mangrove restoration, aquaculture and farm pond will be advocated to Agriculture and Marine Agency; sanitation facilities will be advocated to Public Works Agency and Environmental Agency; while eco-tourism will be advocated to BAPPEDA and Tourism Agency.

147. This advocacy process has one **major aim**, which is to **mainstream the actions into city government's development plan and spatial plan**. This mainstreaming process (including M&E activities and climate risk assessment) is believed as the most effective sustainability strategy at city level. Facilitating the government officials to properly develop and mainstream climate strategy and adaptation action into local development plan is part of the sustainability design. The term mainstreaming here means that climate related context and the adaptation actions are included in the city development plan. In Indonesia governance context, city development plan is the legal and formal direction for city government officials in delivering their works. The plan is developed in deliberative manner by the city government agencies, and its legalization by the City Mayor indicates city government commitment to implement the plan, Programs and activities included in the plan has their own budget allocation and must be implemented according to the schedule. For the program case, a successful advocacy and mainstreaming process will see the inclusion of adaptation actions into city government's programs and activities under the city development plan; automatically provide the adaptation actions (as well as the related M&E and risk assessment updating activities) with budget allocation, not only funding for initial construction in other area (replication), but also regular maintenance (for actions implemented under the program and replication). It will also show government commitment to continue and replicate the actions in future time even after the AF-funded program period ended. This will further ensure the program sustainability in long term.

Financial Sustainability

148. Some Adaptation actions must be profitable, the action that do not pay for themselves are unlikely to be sustainable. Therefore, the some adaptation action in this project is **designed to include strong income generation and entrepreneurial aspect** which will make the project outcomes financialy sustainable. Selected adaptation actions are localy viable and good profitable such as vanamei shrimps, ecotourism etc. notes for adaptation actions that profit generally require large capital so that it is difficult to do by poor people affected by climate change.

149. Based on milkfish business feasibility in Pati (16 km from pekalongan), The evaluation result of business feasibility obtained was the average values of PP, NPV, B/C ratio and IRR were 5,74 years, Rp.68.064.730,-, then 1.07 and 29%. From the evaluation, it is concluded that Milkfish is feasible[28]. And then related with the vanamei, the study was conducted by using descriptive and analytic method with 18 pieces of cage. Analysis of the feasibility using net present Value (NPV),Internal Rate of return (IRR), Net Benefit-Cost Ratio, Gross Benefit-Cost Ratio, Payback Period (PBP), and Break Even Point (BEP). The study result show that the NPV is IDR 43,315,360.00; IRR is 21.47%; net B/C ratio is 5.11, gross B/C ratio is 3.71; PBP is 6 months and 9 days and BEP is 1,837.82 kg of shrimp biomass or IDR 147,025,891.18 of the value of sales. The final result of feasibility analysis of shrimp culture in sea floating net cage is feasible to run[29]. For this reason, this project was built and put forward the revolving fund as one of the alternative livelihood (generating income).

Replication of Financial Access Scheme on Alternative Livelihood

[28] https://ejournal3.undip.ac.id/index.php/jamt/article/viewFile/20369/19201

[29] Vol. 13 No. 2 ISSN 2085-8418; EISSN 2622-9250 http://journal.ipb.ac.id/index.php/jurnalmpi/. Feasibility Analysis of Culture White Shrimp (Litopenaeus Vannamei) at Sea Floating Net Cage (FNC)

150. The vulnerable groups that will be introduced to alternative livelihood are categorized as low level economic groups. Based upon this fact, a selected adaptation option and alternative livelihood at city level will be complemented with piloting of financial access scheme. For example, micro loan for Vennamei shrimp farming in targeted communities.

151. The pilot financing scheme itself will be in the forms of micro loan and revolving fund, in which the fund will be managed by local financial institution and city-owned enterprises. The fund is expected to cover 100 aquaculture/farm pond projects and 200 individual laterine, 8 communal laterine, 1 ecotourism project . Since it will be a revolving fund, hence after the program ended, the selected financial institutions could still continue this practise.

152. Based on preliminary assessment, there are 3 (three) potential institutions that could manage the fund, which are:

- Central Java Province Bank
  A government bank with Central Java Province as their working area. In comparison to the other two institutions, this particular bank has the highest experience and financial capacity to manage large amount of fund
- Bank Perkreditan Rakyat of Pekalongan City (BPR)
  A government bank with Pekalongan City as their working area. This bank is focusing its work in providing loan for Pekalongan City's community, so that they could start and operationalize their business. BPR client is highly diverse in terms of gender and business type.
- Credit Board of Pekalongan Utara Sub-district (BKK)
  BKK is a smaller scale of BPR, where it works in sub-district scope (instead of city scope such as BPR). This board is categorized as city-owned enterprise. In terms of its services, similar to BPR, they also provide micro loan at low interest rates to community that intended to open up a new business or those who need additional capital. In comparison to BPR,

The above potential institutions have an ample experience and managerial capacity to manage the revolving fund. However, Local government is deciding to BPR of Pekalongan City and Credit Board of Pekalongan utara Sub Distrct (BKK) will manage the revolving fund, because City of Pekalonga as shareholder on both institution, thus local government could support the replicating system in the future.

153. Interventions such as reducing vulnerability to climate change are too costly for many households to implement without additional financing. However, these households are often considered by financial institutions to be "unbankable" as they are at risk of defaulting on loans. In addition, the high interest rates on loans mean that poor households are unable to service loan repayments. Consequently, such households are unable to implement the requisite adaptation interventions and remain vulnerable to climate change.

154. Revolving fund as innovative financing mechanism will focuses on success story from pilot of adaptation action in 8 communities (such as aquaculture, laterine, ecotpurism) in reducing vulnerability from climat change impact, particularly flooding. Interventions will be aimed at improving household resilience to thes climate impacts, and the criteria for approval of applications for loans will be defined at the project_planning phase. These criteria will include: i) should have endorse from community or city working group; eligibility of households based on income and other socioeconomic indicators; iii) adaptation benefits.

155. During the course of the program, this pilot financing scheme will be evaluated and further improved for replication. This livelihood will not be sustainable if only relying on capital access; market access is also a critical point. The program will work closely with two relevant Pekalongan City Agencies, which are the Industry, Trading, Cooperation and Micro-Small-Medium Enterprise Agency and the Agriculture and Marine Agency to open up market access for the alternative livelihood; so that the community could supply their product to the market. Furthermore, the Agriculture and Marine Agency of Pekalongan City have an on-going technical assistance program for community groups on post-production process for fisheries products. However due to limited capacity of the experts, added with low government resources to search for market access for the products, this technical assistance program was deemed

as ineffective. The agency believes that the existence of this program will be a significant driver to increase the effectiveness of the program by introducing new approach and new set of skills.

156. In parallel, the implementer will also advocate the integration of alternative livelihood and its complementing financial scheme into the annual local development plan of Pekalongan City, particularly to the two aforementioned Agencies' program. This such integration will in one way ensure that 'someone' will maintain the continuation of the livelihood. Yet, the main aspect that will ensure the livelihood sustainability is how to attract the interest of the community itself by providing financial (in forms of capital) and technical assistance for them to start their business, which at the moment is considered as lacking.

Exit Strategy Development

157. All in all, this program believed that maintaining the program sustainability cannot rely solely on funding allocation, but also involving stakeholders to take part in the maintenance and dissemination stage. Pursuing funding allocation is somewhat a futile effort if not complemented by the existence of someone who protects and preserves the results. Combination of the above efforts at different government level will ensure the sustainability of the program output and outcome in long-term period. These efforts will be combined and translated into an exit strategy plan which will be included in the M&E documents of the program.

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

158. Environmental and Social Impact Assessment has been conducted for the program to assess potential risks arising from program implementation. The assessment was carried out by considering nationally applicable standard in risk assessment as well as compliance to AF Environmental and Social Principles. The assessment results are as below.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	-	The program is designed in compliance with all applicable national, regional and local law, including: • Law 32/2009 on Environmental Protection and Management. • Government Regulation 27/2012 on Environmental Permit and Environmental Impact Assessment • Ministry of Environment Regulations 5/2012 on Types of Activities that Needs to be Equipped with Environmental Impact Assessment • Ministry of Environment Regulations 16/2012 on Guidance to Develop Environmental Document (AMDAL, UKL-UPL and SPPL) • Ministry of Environment Regulation 8/2013 on Procedure for Assessment and Checking of Environmental Document, as well as Environmental Permit Issuance • Ministry of Public Works Regulation 10/2008 on Types of

		Activities under Public Works Sector that Require UKL/UPL According to the abovementioned regulations, EIA is not compulsory for the selected adaptation actions under the program; however the following environmental documents should be submitted prior to the implementation of specific adaptation actions so that environmental permit can be issued by the city government: • Individual and communal sanitation facilities (latrine): SPPL document • Aquaculture: UKL-UPL document • Geo-tube construction: UKL-UPL document • Eco-tourism: UKL-UPL document Every 6 months, regular monitoring will be required for activities that need UKL-UPL, and the report will be submitted to the City's Environmental Agency. The report content itself is outlined in Ministry of Environment Regulation No. 16/2012. Meanwhile based on the abovementioned regulations, mangrove restoration activity does not need to be equipped with environmental document Yet, the PMU will ensure mangrove restoration activity and other activities under the program will prevent negative impacts to the surrounding environment by implementing is ESMP and adhering to the applicable regulations <u>Potential risks:</u> Disruption of physical environment from mobilization, construction and implementation of adaptation actions <u>Requirements and Managements:</u> • Prepare the required environmental documents prior to the implementation of adaptation actions • The environmental document will be in coherent with the program's ESMP • Prepare the necessary environmental management plan for each activity listed in ESMP. • Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex xx).
Access and Equity	-	The program is designed to ensure fair allocation of access to the community, including in information dissemination. To further disseminate knowledge related to the program, knowledge board will be built

		in community centre or community office; making it accessible to all community. Participatory approach employed by the program will further ensure access and equity principle being undertaken during program implementation. One issue being raised during FGD on Gender Issue conducted during the proposal development stage is workshops' and meetings' timing that should be done at night time to ensure women's group participation in the process. This issue will be taken into account when designing the relevant activities to ensure all groups have similar access to program information and implementation process. Despite the effort in ensuring access and equity principle being carried out within the program, there still a minor potential social risks that could arise during program implementation. <u>Potential risks:</u> Social conflict arising from selection of community member that will be the implementer of adaptation actions and alternative livelihood at community and city level implementation. <u>Requirements and Managements:</u> • Stakeholder mapping as the basis for assessment on implementer selection, fair role and responsibilities among stakeholders, and also activities site location (including knowledge board location) that could benefit wider community • Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex xx).
Marginalized and Vulnerable Groups	-	Vulnerable groups are the targeted beneficiaries of the program. They will not only act as the passive actor within the program, but also actively involved in the program implementation. Meanwhile marginalized group was identified as not residing in the program area. They live in the central and southern part of the city. So that they will not be the main focus under the program, yet they will be the indirect beneficiaries of the program. The proposed program will employ participatory approach, particularly at local level, by involving women groups, most vulnerable groups and community representative from different socio-economic level during training, discussion forum and risk assessment process. The planned adaptation actions and alternative

		livelihood also designed by taking into account their interests. However, there still a minor potential social risks that could arise during program implementation. <u>Potential risks:</u> • Social conflict arising from selection of priority activities site and design (at community and city level implementation) which could raise envy from other community member that will not directly exposed to the program <u>Requirements:</u> • Social impact assessment and management plan for the adaptation options will be integrated under UKL-UPL and SPPL document and will be submitted to the city agency. • Social impact assessment and management plan will be in coherent with the Program's ESMP • Adaptation action design (the site location and structural design for hard structure) that take account the needs and suitability for elderly, children groups, and disable groups; to ensure they can experience the benefit • Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex xx).
Human Rights	The proposed program is intended to elevate the quality of life of the beneficiaries (including marginalized and vulnerable groups) by creating a better environment for them (physical, social and economic environment). Furthermore, The Republic of Indonesia has ratified The International Covenant on Economic, Social, and Cultural Rights into Law Number 11/2005 and International Covenant on Civil and Political Rights into Law Number 12/2005. The proposed program will adhere to these laws and ensure that Human Rights principles are being carried out throughout the course of the program.	None
Gender Equity and Women's Empowerment	• The Republic of Indonesia has ratified the Convention on the Elimination of All Forms Against Women/CEDAW into Law Number 7/1984. Hence the proposed program will comply with this law and also other applicable national law on Gender Equity and Justice. • Gender analysis had been done during proposal development stage and outlined this particular document	None

	• Women groups will be an active participant in the program, where their representative will be selected as Community Working Group member. • The program is designed so that trainings on economic livelihood will involve female participant; to ensure they will receive economic benefits from the actions • There is no risk that the husbands will object their wives new livelihood since it will support their household economy	
Core Labour Rights	Relevant to labour rights, the nationally applicable regulations are as below: • Law No. 80 of 1957 concerning Ratification of ILO Convention No. 100 on Equal Remuneration for Men and Women Workers for Work of Equal Value • Law No. 7 of 1984 concerning Ratification of the Convention on the Elimination of All Forms of Discrimination Against Women; • Law No. 21 of 1999 concerning Ratification of ILO Convention No. 111 regarding Discrimination in Employment and Occupation. • Law No. 13 of 2003 on Manpower Accordingly, labour works done under this program will adhere to the above laws, including payment issue. Additionally, the program will also ensure that it will comply with ILO Convention No. 138 and 182 on Child Labour, by assuring that there will be no child labour involved in the program. The program will not pose any risk on labour rights since it will equip the community member with additional skills	None
Indigenous Peoples	Community resides within the geographical scope of the proposed program came from similar ethnicity, and has a well-established social norm. Accordingly, there is no risk related to indigenous people for this proposed program	None

Involuntary Resettlement	Resettlement for community who resides in permanently inundated area is issue that had been raised in the past, but put on hold due to local government budget constraint. During the full proposal development stage it has been agreed with the city stakeholders (including government and community) that resettlement will not be a part of the proposed adaptation actions. Hence there is no risk of involuntary resettlement for the program.	None

Protection of Natural Habitats	-	As a coastal area, protection of natural habitat is essential to be taken throughout the course of the program. Mangrove, the natural habitat for fish and shell fish, has been the green belt for Pekalongan City shoreline for the past decade, protecting the area to a certain extent from sea-related risk. However, mangrove condition in the area has been degraded in the past years.
		
		Risks posed to natural habitats from the implementation of will be among the content of potential impacts outlined in the UKL-UPL and SPPL document of each action
		
		<u>Potential risks:</u>
		Minor natural habitat disruption from aquaculture preparation activity, mangrove restoration process, as well as mobilization and construction process of geo-tube, eco-tourism site and communal sanitation facilities
		
		<u>Requirements:</u>
		• Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are:
		  ○ Individual and communal sanitation facilities (latrine): SPPL document
		  ○ Aquaculture: UKL-UPL document
		  ○ Geo-tube construction: UKL-UPL document
		  ○ Eco-tourism: UKL-UPL document
		• The environmental document will be in coherent with the program's ESMP
		• Prepare the necessary environmental management plan for each activity listed in ESMP.
		• Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex xx).

Conservation of Biological Diversity	-	Coastal resilience aimed by this proposed program is not only focusing on human

		resilience, but also considering the corresponding biodiversity. Potential risks: • Minor environmental and ecological disruption from the construction of geo-tube, mangrove belt, eco-tourism site and communal sanitation facilities; and alteration of resource management (introduction of shrimp and fish species to body of water and introcudtion of new mangrove species to the environment) • The targeted mangrove restoration site might be privately owned, and there is a potential that the land owner reluctant to 'donate 'their land for the activity Requirements: • Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are o Individual and communal sanitation facilities (latrine): SPPL document o Aquaculture: UKL-UPL document. The document content will include the potential impact from the introduction of Bandeng fish to a new environment and how it will interact. o Geo-tube construction: UKL-UPL document o Eco-tourism: UKL-UPL document • The environmental document will be in coherent with the program's ESMP • Prepare the necessary environmental management plan for each activity listed in ESMP, including the impact from mangrove restoration activity. • Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex xx). • The program will ensure the compliance to applicable laws and regulations on biodiversity conservation, including Ministry of Marine and Fisheries Regulation No. 16 Year 2008 on Management Plan of Coastal Area and Small Islands and other • Identification of land-ownership in the targeted mangrove restoration site. Involvement of the private land owners in relevant workshops at community level
Climate Change	Activities under the proposed program will not significantly contribute to the increase of greenhouse gas emission or other climate change drivers	None

Pollution Prevention and Resource Efficiency	-	Potential risks: • Water pollution from the construction and implementation of geo-tube, eco-tourism site, mangrove belt and sanitation facilities; implementation of aquaculture farming; , and also by-product from aquaculture farming and and sanitation facilities' effluent (both floating and non-floating design) • Sedimentation due to accumulation of bandeng/vennamei feedstock in aquaculture farm Requirements: • Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are o Individual and communal sanitation facilities (latrine): SPPL document o Aquaculture: UKL-UPL document o Geo-tube construction: UKL-UPL document o Eco-tourism: UKL-UPL document • The environmental document will be in coherent with the program's ESMP • Prepare the necessary environmental management plan for each activity listed in ESMP. • Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex xx). • Assessment on a more environmentally friendly aquaculture farming method/practices
Public Health	There is no risk to public health from the program. The program activities will continually be ensured for not placing community's health and safety in dangerous state by adhering to the relevant applicable laws and regulations	None
Physical and Cultural Heritage	There is no risk to physical and cultural heritage from the program since there is no physical and cultural heritage located within the geographical scope of the proposed program.	None
Lands and Soil Conservation	-	Inundation from coastal flooding in the targeted program area has resulted in adverse impact, transforming productive land into unproductive one. This proposed program aims to reduce the inundated area, preventing them from turning into unproductive land by implementing diverse adaptation measures. Potential risks: • Soil pollution the construction of geo-tube, eco-tourism site, and sanitation facilities; by product from aquaculture

		farming and effluent of sanitation facilities that apply non-floating design
		
		<u>Requirements:</u>
		• Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are
		  ○ Individual and communal sanitation facilities (latrine): SPPL document
		  ○ Aquaculture: UKL-UPL document
		  ○ Geo-tube construction: UKL-UPL document
		  ○ Eco-tourism: UKL-UPL document
		• The environmental document will be coherent with the program's ESMP
		• Prepare the necessary environmental management plan for each activity listed in ESMP.
		• Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex xx).
		•

159. Based on the assessment above, it can be seen that the program implementation has several potential risks that are considered as minor, small scale (limited impacts and not widely spread) and easily mitigated. These risks can be avoided by implementing adequate mitigation measures. With regards to Risk Categorization of AF, the program can be categorized as "**Category B"** where it has potential adverse impacts but in small number, small scale, not widespread and easily mitigated.

160. In this proposal, the mitigating measures has been incorporated into Environmental and Social and Management Plan (Annex 4) that will be implemented and utilised by the program to mitigate the potential risks and also ensure the compliance of program implementation to AF Environmental and Social Policy.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Adequacy of project/programme management arrangements, in compliance with gender policy

161. Institutional structure and arrangement for the program is developed by considering that it will be implemented in an interconnected manner at 4 (four) different government levels (community, city, province and national). Accordingly, the institutional structure should allow an effective coordination and communication mechanism, both horizontally (within each level) and vertically (across different level).

162. To implement the program, a Project Management Unit (PMU) will be established with main responsibility of managing and implementing different component under the proposed program and ensuring the implementation is in line with the program frameworks, including its targeted goal and objectives. Kemitraan as the National Implementing Entity will act as the Executing Entity in this program, and will be responsible in developing the PMU and assisting them in managing and implementing the program as a whole. Accordingly, the PMU will be located under Kemitraan.

163. The PMU will be led by a Project Team Leader that will be supported by technical and administrative staff. Relevant to this multi-level government approach, staffing under the PMU will be made available to serve activities at 4 government level. Figure 8 will illustrate the Institutional Structure for the Program, including the Project Management Structure of the PMU and its coordination line with the Steering Committee, the National Implementing Entity/Executing Entity, and the Implementing Partners.

Based on the structure, staffing under PMU will consist of:

- Project Team Leader
- Project Officer
- Finance/Admin Manager
- Finance/Admin Officer
- ME & Learning Officer; and
- Community Facilitator

164. Majority of PMU staff will not be Kemitraan staff, and they will be hired in full time basis to solely implement this proposed program. The term majority is use here considering that one particular staff, which is the finance/admin manager, will not be working full time for the proposed program. The finance/admin manager will be Kemitraan staff, and has responsibility to other duties outside the proposed program. This part-time basis for finance/admin manager MWna his/her salary is shared between the proposed program and Kemitraan core fund. Considering the complexity of this proposed program that works in different governance level that embedded with arduous administrative and financial tasks, hence this part-time admin manager is deemed as need to be supported by full-time finance/admin officer. The finance/admin manager will mostly responsible for overall financial/administrative issue, and will only responsible for high-level financial/administrative issue at city level; such as contractual issue for geo-tube construction, assessment of city financial institutions, etc. While the finance/admin officer will deal with administrative and financial aspects of program implementation at city and community level. Table 5 will outline the roles and responsibilities of each position within PMU structure, as well as the roles and responsibilities of the Steering Committee, the National Implementing Entity, and the City Financial Institutions.

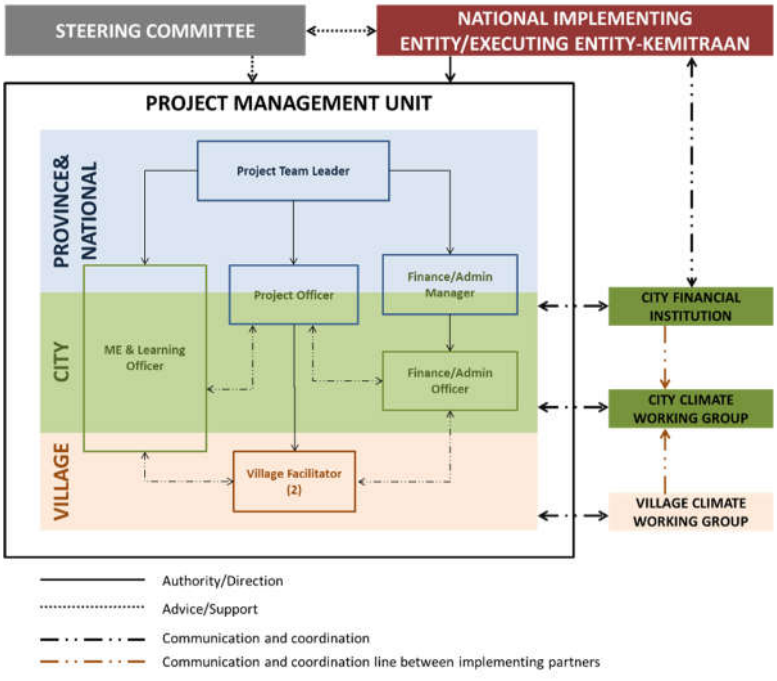


Figure 8. Institutional Structure for the Program

Table 5. Roles and Responsibilities within the Institutional Structure

Position	Roles and Responsibilities	Additional Remarks
Steering Committee	The SC will oversee the whole program implementation to ensure that the means and mechanisms are in place to run the program effectively to be able to achieve the desired outcomes, while also representing the voice of stakeholders that do not directly sit on the committee. They will provide high level technical and management guidance to the NIE and PMU for program implementation, including guidance on policy advocacy process at national level	Steering Committee member will encompass representatives from National government, Province, Government, City Government, Community Government, Academicians and Civil Society Organizations. National Government Agencies that will be involved in the Steering Committee are: 1. Office of the Presidential Staff 2. Directorate of Adaptation, Directorate General of Climate Change Control, Ministry of Environment and Forestry; as the leading ministry for climate change issue 3. Directorate Natural Resources and Maritime, National Development Planning Board; as the coordinating ministry for climate change issue 4. Directorate Maritime and Fisheries Development and Research Agency, Ministry of Maritime and Fisheries; as the leading ministry for coastal and small island issue
National Implementing Entity/Executing Entity – Kemitraan	Kemitraan will be responsible in supervising, supporting and providing guidance to the following activities: • Program preparation, including selecting PMU member and developing Steering Committee • Program implementation, including maintain communication and facilitating coordination with the Steering Committee • Program monitoring and evaluation,particularly those stated in Program Results Framework • Strengthening program sustainability strategy • Input for policy advocacy • Monitoring financial disbursement for program implementation • Financial assessment for the potential city financial institutions that will the program's partners • Technical and quality assurance on the program implementation; including ensuring the selected city financial institution conduct their roles and responsibilities in line with Kemitraan and AF policy, as well as program work plan	As the Executing Agency, Kemitraan will ensure that program implementation will comply with Kemitraan Policies as well as AF's ESP and Gender Policy
Project Team Leader	Will lead the PMU in implementing the program as a whole in day-to-day basis. Among the specific responsibilities are: • Together with NIE selecting the PMU member	Project Team Leader is responsible to the NIE in delivering the works.

	• Together with selected PMU member will develop Program Implementation Plan as the guidance for program implementation • Ensuring that the program implementation are always in line with the targeted goal and objectives as well as the program implementation plan, and the goals and objective can be achieved effectively and in timely manner • Together with Kemitraan, monitoring the progress and achievement of Program Results Framework • Bridging coordination of program implementation at different government level. Relevant to the multi-government level approach, the PC will be specifically responsible in leading the execution of activities at national level, including coordinating with relevant line ministries, coordinating with national platform and leading the advocacy process at national level • Lead the preparation of program progress report • Ensuring program disbursement is efficient and on schedule • Communicating the program progress and issues to steering committee and NIE	
M&E and Learning Officer	Supporting Project Team Leader in daily program implementation, with specific responsibilities: • Collecting information needed to monitor program progress, including Program Results Framework • Developing mechanism for knowledge management (including management for cross-cutting information) • Ensuring that information collected from monitoring activity is reflected upon and utilized to continually improve the on-going program • Implementing internal M&E and ICT capacity building that targeting PMU member to promote a culture of learning and knowledge management internally • Support Team Leader in coordinating and communicating with national platform on climate change adaptation • Assist PO in developing KM platform at city level • Generating lessons learned from community and city level and prepare the relevant documentation, knowledge products and visibility materials based on those lessons learned • Provide input for Project Team Leader and Project Officer based on findings from the lessons learned	

Finance /Admin Manager	Responsible for financial and administration management for the overall program implementation, including leading the financial assessment process for selecting the suitable financial institutions at city level for pilot financial scheme activities	
Project Officer (PO)	The spearhead of program implementation at National, Province and City Level. Among the specific responsibilities are: • Implementing daily activities of the program at city, province and national level, with greater emphasize on city and province level • Assist Project Team Leader in ensuring program disbursement is being done effectively and in accordance with the schedule • Assist Project Team Leader in developing regular progress report • Ensure horizontal and vertical coordination of program stakeholders • Coordinate with M&E and Learning Officer and Finance/Admin Officer in activities implementation • Assist Project Team Leader in developing pilot project criteria	
Finance /Admin Officer	Assist finance/admin manager in dealing with financial and administration related issue at city and community level implementation, including coordinating with the selected financial institutions for the pilot financing scheme and monitoring their performance	
Community Facilitator	The spearhead of program implementation at community level. Among the specific responsibilities are: • Coordinating with Project Officer and Community Officials on program implementation • Lead the implementation of program activities designated at community level • Lead the formation process of community working group • Facilitate training and workshops at community level • Providing input for pilot project selection	
City Financial Institutions	This institution will have a clear coordination line to PMU and Kemitraan due to the fact that they will play as one of the major actor in the pilot financing scheme. Among the responsibilities are: • Ensuring that the finance part of the pilot financing scheme is being carried out in line with Kemitraan and AF Finance Policy • Coordinate and regularly report to Kemitraan and PMU on their work progress	

	• Coordinate with City PO and relevant City Government Officials • Together with PC and Finance/admin manager create selection criteria for potential pilot implementer based on the Safeguards of OPG, ESP and GP of Adaptation Fund, City Financial Institution, and Kemitraan. • Together with PC and PO will create sustainability strategy for the financing scheme	

165. The proposed program will ensure that gender mainstreaming is effectively implemented since planning/design stage, and continue to implementation stage to ensure the sustainability of gender responsiveness even after the project is completed.

166. The proposed program highly values the gender competence of the PMU. In the staffing selection process, the program will incorporate an adequate gender understanding as a criterion in the selection of team members. The team will be assessed for its competence related to gender. Furthermore, to elevate their understanding on gender issue, workshops and training sessions will be held for them during the program planning stage.

167. During the implementation stage, the PMU will encourage implementing partners to designate gender focal points on their respective organizations to facilitate exchange with partners on any gender-specific issues that might arise. Implementing partners here are community working groups at 8 targeted communities, city climate working group and selected city financial institution. Both community working group and city climate working group will not be placed under the PMU structure, but their roles in the program implementation will be significant. The roles and responsibilities of community working group are:

- Conduct Participatory Climate Risk Assessment
- Develop community profile and support the development of community information system
- Assessing and selecting adaptation actions that appropriate to be implemented in their respective area, including implementation location
- Together with community facilitator, monitor and evaluate the implementation of selected adaptation action

168. Meanwhile the city climate working group has the following roles and responsibilities:

- Develop City Climate Risk Assessment and City Climate Impact
- Support the development of RAD API
- Support the process of mainstreaming RAD API into local development plan
- Assessing and selecting the appropriate adaptation actions to be implemented at city level
- Support the development of city-level knowledge management platform
- Work closely with city project officer and ME Learning officer in conducting their roles and responsibilities

169. Aside from having individual coordination line with the PMU, each of the implementing partners will be able to communicate among themselves by utilizing city climate working group as the platform. Representative of community working group and city financial institutions will be involved as the member of city climate working group; allowing them to communicate their progress and coordination needs to their fellow working group member.

170. As part of monitoring and evaluation process in the implementation stage, this program will also be monitored to identify any challenges, barriers and constraints to gender-responsive implementation or gaps/flaws in the design process and address and mitigate them during implementation.

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

Identified Risks	Risk Level	Mitigation Measures
Institutional Risk: Potential lack of support from the national and provincial government since climate change issue is not the strategic issue and development priority at both government level at this period	Low	• Decision making mechanism of the Steering Committee will be designed as will not be dependent to a single entity • Build partnership with national platform to advocate the issue at national level by utilizing policy brief built upon practical experience at the program location • Periodic report and coordination with the provincial government officials, including involving them in issues that related to provincial government responsibilities at city scope
Institutional Risk: Weak horizontal coordination at national and city level, and also continually changing representatives in Steering Committee and Working Group (City and Community) could potentially delay the program time frame	Medium	• NIE to hold regular coordination meetings at national level • Reactivating city working group to foster city level coordination • Schedule a regular coordination meeting of city and community working group • Member of Steering Committee will be appointed by name (representative of the institutions), instead of only appointing the institutions • Member of City and Community Working Group will be appointed by institution, and legalized by Mayor's Letter of Decree to strengthen the team's roles and responsibilities
Institutional Risk: Ineffective vertical coordination, where lessons learned from lower governance level (community and city level) not effectively communicated to the higher governance level, particularly national level	Medium	• Project Team Leader will play a role as the spearhead for advocacy process at national level • KM and learning officer, together with community and city climate working group will develop research paper and policy brief on bottom-up planning and advocacy process. These documents will be communicated to project team leader • Steering committee which consists of national level government representative will be informed regularly by PMU and Kemitraan on the program progress, including on lessons learned from local level, ensuring that national government officials are informed on the program progress and achievement • PMU involvement in national platform will ensure that the progress not only communicated to government officials but also other institutions working at national level • The program implementation plan will take into account the time frame of local

Identified Risks	Risk Level	Mitigation Measures
		and national development plan development process, to ensure program results can be advocated and mainstreamed into the development plan.
Institutional Risk: 2019 general election momentum potentially shift the focus of key actor at national level, particularly at the beginning of program implementation	Low	Project scheduling will be made so that by the time the national level is at 'general election mode', the project is still at the early implementation stage, where the main activities are developing assessments and conducting trainings to build stakeholders knowledge and awareness. The program will also be designed so as not will be highly influenced by political condition at national level. Project Team Leader along with NIE and the Project Officer will keep track on the changing dynamics due to general election, including changing of actors that needs to be approached for advocacy process.
Social Risk: Low level of support and acceptance from the community could impede participatory approach that became the core of this program, causing several of the adaptation options become ineffective or not on-target, and threatening the sustainability of the actions at post-program period	Medium	• Build a strong rapport with local community champion and leader by engaging in informal discussion early in the preparation stage • Participatory approach had been implemented during proposal development stage; where community leader, community group representative, and women group representative were being consulted (individually and/or in workshop event) at that stage. Their needs and input are the key foundation for the program design, including in designing what adaptation options that should be implemented in the specific community. Adaptation options outlined in this proposal had been agreed by the community representative. • Establish community working group with member encompassing community leader, representative from different line of work, women group, CSO (if any) and youth group; in which the member will be the focal point in disseminating relevant information to other community member. • Community working group will have a major role in program implementation at community level; where they will take part in developing climate risk assessment and community profile; and also support the development of community information system • The community working group will play a role in providing local wisdom input to the design of the adaptation options, as well as selecting a more detail location for the implementation • Regular training / discussion forum / coordination meeting to discuss climate change knowledge and program progress, as well as to build their sense of ownership to the program

Identified Risks	Risk Level	Mitigation Measures
		• Training and discussion will be designed to be sensitive to the needs and general character of the participant, to ensure maximum participation • Utilizing knowledge board effectively to inform the wider community
Social Risk: Mangrove restoration activity might be hindered by land-owner reluctance to allow the program to be implemented in their unproductive land	Low	• Conduct series of workshops to build land-owner understanding on the communal benefit of turning their unproductive land into mangrove restoration site • Personal and informal approach from community working group member to further enhance their awareness
Social Risk : Economic benefits from the program (adaptation actions that could produce larger economic benefits) may garner more attention from the stakeholders in comparison to its social and environmental benefits	Low	• Mainstream environmental and social safeguarding since early in the preparation stage by embedding sustainable development context • During inception training, will put emphasis on benefits on each aspect (environmental, social, economic) that could be gained by building coastal resilience; including how each aspect interlink with each other
Environmental Risk: Natural disaster and extreme weather events could delay or impede program implementation	Medium	• Coordinate with Disaster Management Board and Ministries of Marine and Fisheries regarding early warning system in place • Communicate in advance potential delay on program implementation to relevant stakeholders • Prepare contingency plan for such events
Financial Risk: Delay in program implementation may result in delay of financial disbursement	Medium	• Close monitoring for project implementation and reporting, and provide immediate feed-back on problem faced by the executing institutions • Design problem-solving procedure to ensure issues are dealt in timely and effective manner

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

171. From the beginning of the program period, the stakeholders will be informed on the potential risks associated with the program and the corresponding mitigation measures in place. The program's Environmental and Social Management Plan/ESMP (described in a more detailed manner in Annex1) will be communicated to them; not only during the program preparation phase, but also throughout the course of the program, to ensure all parties involved are aware of the risks and the appropriate mitigation measures.

172. As part of the program implementation, the PMU will also set up grievance mechanism for the stakeholders involved. This mechanism is needed to ensure the program always in line with AF's ESP that promote environmental and social safeguard and also ensure that it always in line with community's interest and met their expectations. Steps that will be taken for setting up the mechanism are as follow:
    - Initial orientation for the PMU will include materials on ESMP and grievance mechanism so that the staff will understand their roles and responsibilities on this matter
    - Assign staff/team of staff that will be responsible for receiving and processing the grievance

- Develop procedures for accepting/logged-in grievance, grievance assessment process, providing feedback for the grievance, and monitoring the feedbacks
- Create internal communication procedures for the mechanism
- Communicating the ESMP and grievance mechanism at the beginning of program implementation to the stakeholders

173. The grievance mechanism procedure that will be set up will follow these following general guidelines:

- *Logged-in Grievance*
  Stakeholder should formally communicate grievance in a written manner, and sent it to the appointed staff through email,fax or hand-delivered the text to the PMU office. Once it's being logged, the particular stakeholder will receive receipt that acknowledging the complaint is being accepted and will be processed
- *Grievance Assessment*
  Once the complaint is logged-in and recorded, an assessment process will be done by a specific team by considering the complainants, issues, mitigation measures in place, rating the grievance and exploring options to address the grievance. The team leader will continually updated on the process
- *Providing and Communicating Feedback*
  Once the option is selected, the team will prepare a response for the grievance and communicate the response formally in written text to the complainant
- *Monitoring Feedback*
  To ensure the feedback is well received by the complainant or to maintain in case there will be follow up response, the responsible staff will continually monitor the grievance cases logged-in, its feedback and how it being dealt in practise.

A more detailed grievance mechanism and the responsible staff will be developed at the beginning of program implementation. [**Please see Annex 8d]**

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

174. The project will be monitored through the M&E activities, M&E budget is provided below. The monitoring will be carried out by the PMU verified by the Steering Committee. Monitoring and evaluation progress will be based on targets and indicators set in Projects Results framework.

175. Project Management Unit will create system for project monitoring progress. Relevant data collection and recording process with participatory mechanisms will support the monitoring and evaluation of outcome and output indicators.

Inception workshop will include:

1. Assist all participants to fully understand the project objectives and activities and take ownership of the project
2. Discuss the organizational structure of the project
3. discuss the roles and responsibilities of all agencies involved in the project including decision making, reporting, and lines of communication
4. Discuss conflict resolution mechanisms.
5. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
6. Prepare and framework finalize the annual work plan for year one.
7. Discuss project monitoring, evaluation and reporting requirements
8. Discuss financial procedures.

176. Throughout the project, PMU and the division of monitoring and evaluation will be responsible for monitoring and their actions will be guided by Annual Operating Plan (AOP). Annual Operation Plan will display all necessary activities for current year and Quarterly Status Reports will present monitoring process on executed activities. AOP's will be agreed and scheduled annually during Steering committee meetings, and AOP will be guided by project results framework.

177. Following reports and evaluations will be developed throughout the project:

Inception Workshop Report- will be prepared after inception workshop, which will detail about roles, responsibilities, actions, and functions of all stakeholders. Furthermore, it will include first AOP and monitoring plan for the first year.

Annual Operating Plan(AOP)- Annual plan should be approved by the steering committee before starting each operating period, and it will detail all activities to be executed, all milestones and goals which will be reached during the year, and dates for each indicator to be executed. AOP will include all the necessary financial activities relevant to the first period.

Quarterly Progress Reports (QPR)- project management unit should submit QSRs to steering committee at the end of each operating quarter. QSRs will present how the indicators identified in project results framework are executed, what challenges PMU faces during the execution process and identify any constraints. Quarterly Status Reports will present monitoring process on executed activities.

Annual Progress Reports (AMR)- Annual Progress Report will cover last AOP, it will compare the actual results with the targets and milestones listed in AOP, and if necessary it will come up with improvements and corrective measures for the upcoming AOP.

External Audit Reports- with the periodic financial statements, external annual audit report will be prepared. Audit reports are made in accordance to Financial Regulations set by the government.

Mid-term Evaluation- Halfway through the project implementation the project will undergo an external mid-term evaluation, which will assess the project's progress of achieving outcomes. Effectiveness and efficiency of the projects will be taken into consideration, and if needed any corrective mechanisms will be applied after the mid-term evaluation.

Final Report- Final report will be presented three months prior to the end of the project. The main focus of the evaluation is to assess project's results with planned results. Moreover, the final evaluation will look to impacts of the projects and to the sustainability of the project.

Final External Evaluation- The main focus of the evaluation is the project impacts, project's sustainability and long-term effects. Final evaluation will also suggest any further actions to be implemented for project's sustainability.

Type of M&E Activities	Responsible Parties	Budget (US$) (does not include staff time)	Time Frame	Year 1	Year 2	Year 3
Office set-up and project staff recruitment	Team Leader	500	Y1: 1st month	500		
Inception workshop (30 participants, 5 days)	Team Leader	3000	Y1; 2nd month	3.000		
Inception report	Team Leader	Part of Executon Cost	Y1: 2nd month	-		
Develop the performance management plan and reported quarterly	Team Leader	Part of Executon Cost	Y1 (quarterly), Y2, Y3			
Develop base line data (2 month, 1 team researcher)	M&E Specialist	4.000,00	2nd-3rd month Y1	4.000		
Regular monitoring to the field • 2x monthly, 3 days, 3 persons	Team Leader	10.000,00 (Travel cost of Steering committee to be charged to IE Fees)	Y1: bimonthly, Y2 and Y3	3.333	3.333	3.333
Spot check monitoring the measure the progress output • 1x/quartile, 4 days, 2 person	PME Unit and Internal Audit	7.500,00	Y1: quarterly Y2, Y3	2.500	2.500	2.500
Quarterly report	Team Leader	Part of Executon Cost	Y1 (quarterly), Y2, Y3			
Coordination meeting of the project management unit with the steering committee in the national and district level • National level: 10 persons • City level: 10 persons	Team Leader	4.000,00	Y1, 3rd Year	1.333 -	1.333	1.333
PMU coordination meeting including the field staff	Team Leader	7.000,00	Y1, Y2, Y3	2.333	2.333	2.333

• 2x/year, 3 days, 10 persons		(Travel cost of Steering committee to be charged to IE Fees)				
End line survey • Team research • 3 month • Field visit	Researcher	5.000,00		- -	5.000	
Documentation of achievements from program's indicators and targets		9.000,00		3.000	3.000	3.000
Midterm evaluation	External consultant	5.000,00	Y2 6th month	-	5.000	
Final evaluation	External consultant	10.000,00	Y3, 3rd quartile	-		10.000
Grand Total		**65.000,00**		**20.000**	**22.500**	**22.500**

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

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
Goal *Building Coastal City Resilience to Climate Change Impacts and Natural Disasters*, with a particular focus on pro-poor adaptation actions that involve and benefit the most vulnerable communities in the city.					
Objective Enhancing coastal community capacity in developing Climate change adaptation actions and community information system	Number of population active on climate adaptation awareness and actions	Do not exist	715 man and 750 Women active on Climate adaptation Actions	Progress Report and Survey	
Enhancing local government and other city stakeholders' capacity to develop local climate change adaptation action plan (RAD API), Implementing climate smart initiatives	Number of CCA-specific activities with allocated budget are included in City Develpmet Plan Number of adopting climate change adaptation measures that improve their livelihoods and the resilience of the ecosystem	Do not exist	At least 10 activities with allocated budget are included in City /midterm developmet plan	Progress Report, mayor decree	
Strengthening vertical coordination by enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan	Climate change and adaptation context included in Central Java Province Development Plan	Do not exisst	At least 1 official document at strategic document outlining the integration process	Progress report	

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
Strengthening vertical coordination and collaboration between national and local government in climate adaptation context and Enriching knowledge, toolkits and methodologies coastal resilience for the national government	Number of knowledge products from local activities communicated and adopted at national level	Do not exist	1 handbook on SIDIK for coastal city At least 3 policy papers on policy, regulatory framework and fiscal for coastal resilience Information knowledge transfer more than 30 cities/regencies and 5 ministry related on climate issues	Progress report, documentation records	
Component 1. Enhancing coastal community capacity in developing Climate change adaptation actions and communityinformation system					
Outcome 1.1 Enhanced capacity of local actors in identifying, initiating, strengthening, and escalating community-based actions to address climate risk and natural disaster	Number of Local champions in 8 viilage aware about climate impact and active to promote adaptation actions	In general, local champions only focus on the issue of economic empowerment and climate change mitigation	8 community Climate working group established Regular meeting every monht is conducted	Regular meeting report Record on attendance in meeting or seminar	
Output 1.1.1	Number of climate working group (CWG) established	There are no community grouops that focus on climate	8 Climate Working group (CWG)	Record of attendance on meetings	

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
Community climate working group established and functioning in each of the 8 communities	% representative from local champions, women and local government (community) active in CWG	change adaptation actions	20% of member CWG is women & youth leaders 192 meeting for 8 communities and 96 meeting wil invite gender, climate, environment, infrastructure related with adapatation acitons experts	Minute of meetings	
Output 1.1.2 Enhancing coastal community capacity in developing the community informtion system and implementing the ensuing climate change adaptation actions	% of member CWG participating in the training of workhsop % members of CWG involved in training and the preparation and implementation of Vilage information system Number of viilage profile Number of community information system Number of community adaptation action plan	the government has an action to deal with tidal flood, flash flood and water issue, but community involvement is still lacking The 8 community don't have community climate adaptation actions plans	8 member of CWG to be active participants on 2 training and 3 workhsop related community information system and vilage adaptation actions 6 workshop accros vilage 8 Community adaptation actions plans	Record of attendance on the workshops Community Climat adaptation actions documents	

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
Outcome 1.2 Enhancing local community adaptive capacity, including developing livelihood strategies to face climate change impacts and natural disasters	Number of community (community) group (fisherman group, farmer group, women group, young group/karang taruna) active in training, workshop, and take climate adaptation actions % Increase income of population involved in income generative activities	Not exist	8 community actice to take climate adaptation actions avoided 20%decrease income at least	Progress reports surveys	
Output 1.2.1 Agreed adaptation action in each community implemented (i.e. mangrove restoration and ecotourism, supporting farmers group in cultivating rice and fish varieties that tolerant to high salinity, sanitation, rain water harvesting construction etc.)	Number of mangroove plantation Number of sanittion build Number of Fishponds Number of women participations in agreed adaptation action Number of Women headed household participations in agrees adaptation	Poor sanitation Poor mangroove Poor quality of fishpond	8 pilot of vannamei shrimp ponds in Degayu community 9 pilot of fishponds (aquaculture) in 7 communities (Bandengan, Kandang panjang, Panjang baru, Krapyak, Kandang panjang, Padukuhan kraton and Pasir kraton) 15 mounds of manggrove (1000 plantation) in 4 vilages (Bandengan, Kandang	Survey Field fisit Progress report Monitoring report	

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
			panjang, Panjang Baru and guludan) Reconstructions of 25 individuals sanitations facilities each communities 2 communal sanitation facilities in each of the 8 targeted communities (Degayu, Krapyak, Panjang Wetan, Panjang Baru, Kandang Panjang, Padukuhan Kraton, Bandengan and Pasir Kraton Kramat))		
Component 2: Enhancing local government and other city stakeholders' capacity to develop local climate change adaptation action plan (RAD API),					

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
Outcome 2.1 Enhancing local government and other city stakeholders' capacity in developing climate risk assessment and utilizing the results to develop local climate change adaptation action plan (RAD API),	Climate change and adaptation context included in City Development Plan Number of CCA-specific activities with allocated budget are included in City Develpmet Plan Number of staff across sectors trained and build their awareness on the new regulations enforcement	Not Included Current program and activities has not considered CCA context	Climate change and adaptation become strategic issue in Pekalongan At least 10 activities with allocated budget are included	City Development Plan Document Program and Activities Matrix in City Development Plan Document	Assumptions: The RAD API trainings and development process are attended by diverse local government agencies to enable cross-sector collaboration within the document, so that they will buy-in the program Political will and commitment that encourage full participatory participation of key government Stakeholders
Output 2.1.1 City climate working group reactivated	City Climate working group (CWG) established	up to 4 years ago the city of Pekalongan had a CWG that focused on mitigation, but now it is no longer exists	CWG is active and produces several planning documents to local regulations 36 meetings in 3 years 4 workshop in two years (60 participants in	Record of attendance on the regular meeting RAD API document Local regulations draft	Assumptions: The regular meetings are attended by diverse local government agencies to enable cross-sector collaboration

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
			each workshop: CWG, Local Government, community champions, local university and local private sectors)		
-Output 2.1.2 RAD API developed based on City Climate Risk Assessment and Climate Coastal Impact	Number of training and workshops on RAD API development Number of City Adaptation Actions (RAD API) document Number of studies on coastal climate impact	Not exist Not exist No Exist	2 workshops and 1 training and technical assistant on developing city risk assessment 1 verivcation workshop for climate risk assessment and city adaptation actions (60 participant for each workshop and training, totaly 240 participants) City Risk Assessment developed	Record of attendance on the workshops RAD API document	Assumptions: The trainings are attended by diverse local government agencies to enable cross-sector collaboration within the document

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
			1 City adaptation actions (RAD) API document is developed 1 Cimate coastal impact is developed		
Output 2.1.3 Strategy to integrate CCA into local government planning processes (annual work plan or mid-term development plan of city) is developed	Number of strategic document to integrate CCA into City government planning process Number of training on the integration process	The national government has provided general guidance to incorporate RAD API into local government plan, but still needs to be adjusted for local planning process Not exist	1 strategic document outlining the integration process <u>Defind gap on previous government planning and technical assisstant on integgration CCA into laocal governemnet planning. The activity will fit into CWG regulars meetings</u> 1 trainings on the integration process	Strategic document Records of attendance on the training activity	<u>Assumptions:</u> The timeline for strategy development is following government planning process timeline so that the integration process feasible to be done

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
			And technical assisstant (60 participants from multistakehoders)		
Outcome 2.2 Enhanced resilience of coastal community from the Implementing Climate smart initiatives, including those fostering sustainable utilization of natural resources, with implementation and financing scheme that can be replicated and disseminated to broader audience	Number of adopting climate change adaptation measures that improve their livelihoods and the resilience of the ecosystem % of women adopting climate change adaptation measures	Not exist	Fours type of climate adaptation actios can replicate on city scale 40% of women active in climate change adaptation action measure	Survey Annual report	
Output 2.2.1 Innovative and collaboration adaptation actions are implemented	Number of coastal embankment Number of aquaculture developed Number of innovative laterin Number of community based ecotourism developed Number of mangrove restored	Poor quality of coastal embankment Poor tecnologi 0 cpmmunity plan is available for mangrove management & coastal embankment 2 communities that potential for ecotourism 8 communities affected by tidal inundation and they are have problem with laterine	900 m coastline of Degayu Community by geo-tube and natural embankment 500 m coastline of Kandang Panjang Community 15 vannamei shrimp ponds	Progress reports, field visits Anlysis reports Monitoring reports Remote sensing	Technical and investment support

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
			in Degayu Community 60 bandeng/nila farm pond (15 bandeng/nila ponds locations in 4 communities: Bandengan, Kandang Panjang, Panjang Baru, and Degayu) Second year will leverage 15 fish pond in others 4 communities (Krapyak, Panjang Wetan, Padukuhan Kraton,and Pasir Kraton Kramat) 70 mounds of mangrove in PIM (Kandang Panjang Community) Two community-based ecotourism in Panjang Baru		

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
			Community and Degayu Community 24 individual sanitation facilities in each of the 8 targeted communities (a total of 192 facilities) 1 communal sanitation facility in each of the 8 targeted communities (a total of 8 facilities) 10 Ha mangrove restored		
Outcome 2.3 Establishing city-level knowledge management platform	Numnber of meeting in city level Number of knowledge product developed Number of policy advocacy material developed Number of community group active in establising knowlaedge management platform	No exist			
Output 2.3.1 Climate change training and knowledge sharing conducted	Number of Trainging & workshop Number of knowledge management Forum at city level % women, men and young active in forum	No exist	1 training & workshop (60 participanst) 2 knowledge menegement forum	Record of attendance on the workshops Policy papers document	The trainings are attended by diverse local government agencies and local stakeholders to leverage climate

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
			25 % participant is women and young leaders (60 participants in each forum)	Best practice document Newsletter document	adaptation actions
Output 2.3.2 Local knowledge sharing platform established	Number of policy papers developed and shared Number of Best practice documentatiion developede and shares Number of newsletters developed and share	Not exist	Reguler news letter every 3 months 4 Policy papers relatied with coastal adaptation action 5 types of best practices documented and shares in local and national	Policy papers document Best practice document Newsletter document	Local knowledge platform accept the program as part of their platform
Component 3: Strengthening vertical coordination by enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan					
Outcome 3. 1 Enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan	Climate change and adaptation context included in Central Java Province Development Plan	Not Included	Climate change and adaptation become strategic issue in Central Java Province	Central Java Province Development Plan Document	Assumptions: The RAD API trainings and development process are attended by diverse local government agencies to

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
	Number of CCA-specific activities with allocated budget are included in Central Java Province Development Plan	Current program and activities has not considered CCA context	Development Plan At least 10 activities with allocated budget are included	Program and Activities Matrix in Central Java Province Development Plan Document	enable cross-sector collaboration within the document, so that they will buy-in the program
Output 3.1.1 Enhanced provincial capacity to develop RAD API	Number of training and workshops on RAD API development	Not exist	3 trainings on Central Java Province RAD API development	Record of attendance on the workshops	<u>Assumptions</u>: The trainings are attended by diverse local government agencies to enable cross-sector collaboration within the document
	Number of Provincial RAD API document	Not exist	1 Central Java Province RAD API document is developed	RAD API document	
Output 3.1.2 appropriate strategy to integrate CCA into Provinciall government planning processes (annual work plan or mid-term development plan of city) is developed	Number of strategic document to integrate CCA into Central Java Province government planning process	The national government has provided general guidance to incorporate RAD API into local government plan, but still needs to be adjusted for local planning process Not exist	1 strategic document outlining the integration process	Strategic document	<u>Assumptions:</u> The timeline for strategy development is following government planning process timeline so that the integration process feasible to be done
	Number of training on the integration process		3 trainings on the integration process	Records of attendance on the training activity	

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
Component 4. Strengthening vertical coordination and collaboration between national and local government in climate adaptation context and Enriching knowledge, toolkits and methodologies coastal resilience for the national government					
Outcome 4.1 Enriching SIDIK as risk assessment tools for coastal area based on local experience	Coastal-related criteria/indicator for SIDIK and the relevant handbook developed and submitted to the Ministry of Environment and Forestry (MoEF)	Not exist	1 set of coastal-related criteria/indicator and handbook for SIDIK	Document on coastal-related criteria/indicator Record on submission process of the criteria to MoEF	<u>Assumption:</u> MoEF buy-in the idea of enriching SIDIK for coastal area utilization
Output 4.1.1 Knowledge product in the form Handbook on how to use SIDIK for risk assessment at coastal city is published and shared. This handbook is targeted to be used by local government, NGOs and civil society organizations.	Number of handbook on SIDIK for coastal city Number of dissemination for the handbook Number of handbook being shared to local government, NGOs and civil society	Not exist Not exist Not exist	1 handbook on SIDIK for coastal city 1 dissemination activity At least 300 handbooks are shared	SIDIK for coastal city handbook Record of attendance on the dissemination Record on handbook receiver	
Outcome 4.2 Strengthening vertical coordination and collaboration between national and local government in climate adaptation context	Number of knowledge products from local activities communicated at national level	Not exist	1 handbook on SIDIK for coastal city 3 policy papers on policy, regulatory framework and fiscal for coastal resilience 1 lessons learned	SIDIK for coastal city handbook Policy paper documents Minutes of meetings on	

Expected Results	Indicator	Baseline	Target	Source of Verification	Risk & Assumption
			shared during national dialogue	national dialogue event	
Output 4.2.1 Strengthened vertical coordination and collaboration between national and local government in climate adaptation context	Number of national dialogue conducted in collaboration with the program Number of document mapping on coastal resilience policy Number of policy papers developed and shared Number of meetings with national knowledge platform	National dialogue is an annual event APEKSI and MoEF Not exist Policy papers for coastal area is not exist National knowledge platform is established and having a regular meeting	The program collaborated with APEKSI and MoEF in conducting 3 national dialogues 1 document that map policies on coastal resilience 3 policy papers on policy, regulatory framework and fiscal for coastal resilience are developed and shared Attend at least 9 meetings of the national knowledge platform	Record of attendance and minutes of meetings on national dialogue event Document on coastal resilience policy mapping Policy paper documents Record on policy paper communication to stakeholders Record of attendance and minutes of meetings of the national knowledge platform meetings	<u>Assumptions:</u> MoEF and APEKSI buy-in the collaboration process Human and financial resources of the program is adequate to support the national dialogue event National knowledge platform accept the program as part of their platform

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

Project Objective(s)	Project Objective Indicator(s)	Fund Output	Fund Output indicator	Grant Amount (USD)
Enhancing coastal community capacity in developing Climate change adaptation actions and communityinformation system	Number of population active on climate adaptation awareness and actions	**Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	**948.172**
Enhancing local government and other city stakeholders' capacity to develop local climate change adaptation action plan (RAD API), Implementing climate smart initiatives	Number of CCA-specific activities with allocated budget are included in City Develpmet Plan Number of adopting climate change adaptation measures that improve their livelihoods and the resilience of the ecosystem	**Outcome 7:** Improved policies and regulations that promote and enforce resilience measures **Outcome 6:** Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	7. Climate change priorities are integrated into national development strategy In the project focus on city development plan strategy 6.2. Percentage of targeted population with sustained climate-resilient livelihoods	**2.615.545**
Strengthening vertical coordination by enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan	Climate change and adaptation context included in Central Java Province Development Plan	**Outcome 2:** Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. No. and type of targeted institutions with increased capacity to minimize exposure to climate variability risks	**31.074**
Strengthening vertical coordination and collaboration between national and local government in climate adaptation context and Enriching knowledge, toolkits and methodologies coastal resilience for the national government	Number of knowledge products from local activities communicated and adopted at national level	**Outcome 1:** Reduced exposure at national level to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	**123.285**
Project Outcome (s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output indicator**	**Grant Amount (USD)**
Outcome 1.1 Enhanced capacity of local actors in identifying, initiating, strengthening, and escalating community-based actions to address climate risk and natural disaster; including capacity in	Number of Local champions in viilage level aware about climate impact and active to promote adaptation actions	***Output 3***: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1 No. and type of risk reduction actions or strategies introduced at local level	**304.326**

Project Objective(s)	Project Objective Indicator(s)	Fund Output	Fund Output indicator	Grant Amount (USD)
integrating the actions to community development plan				
Outcome 1.2 Enhancing local community adaptive capacity, including developing livelihood strategies to face climate change impacts and natural disasters	Number of community (community) group (fisherman group, farmer group, women group, young group/karang taruna) active in training, workshop, and take climate adaptation actions % Increase income of population involved in income generative activities	***Output 6:*** Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1.No. and type of adaptation assets (physical as well as knowledge) created in support of individualor community-livelihood strategies 6.1.2. Type of income sources for households generated under climate change scenario	**643.846**
Outcome 2.1 Enhancing local government and other city stakeholders' capacity in developing climate risk assessment and utilizing the results to develop local climate change adaptation action plan (RAD API),	Climate change and adaptation context included in City Development Plan Number of CCA-specific activities with allocated budget are included in City Develpmet Plan Number of staff across sectors trained and build their awareness on the new regulations enforcement	***Output 7:*** Improved integration of climate-resilience strategies into country development plans	7.1. No., type, and sector of policies introduced or adjusted to address climate change risks	**194.930**
Outcome 2.2 Enhanced resilience of coastal community from the Implementing Climate smart initiatives, including those fostering sustainable utilization of natural resources, with implementation and financing scheme that can be replicated and disseminated to broader audience	Number of adopting climate change adaptation measures that improve their livelihoods and the resilience of the ecosystem % of women adopting climate change adaptation measures	***Output 5:*** Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability ***Output 6:*** Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	5.1. No. and type of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type of assets) 6.1.1.No. and type of adaptation assets (physical as well as knowledge) created in support of individualor community-livelihood strategies	**2.172.539**
Outcome 2.3	Numnber of meeting in city level	***Output 3***: Targeted population groups participating in	3.1.2 No. of news outlets in the local press and	**248.076**

Project Objective(s)	Project Objective Indicator(s)	Fund Output	Fund Output indicator	Grant Amount (USD)
Establishing city-level knowledge management platform	Number of knowledge product developed Number of policy advocacy material developed Number of community group active in establising knowlaedge management platform	adaptation and risk reduction awareness activities	media that have covered the topic	
Outcome 3. 1 Enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan	Climate change and adaptation context included in Central Java Province Development Plan Number of CCA-specific activities with allocated budget are included in Central Java Province Development Plan	***Output 2.1***: Strengthened capacity of national and regional centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events 2.1.2. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	**31.074**
Outcome 4.1 Enriching SIDIK as risk assessment tools for coastal area based on local experience	Coastal-related criteria/indicator for SIDIK and the relevant handbook developed and submitted to the Ministry of Environment and Forestry (MoEF)	***Output 1:*** Risk and vulnerability assessments conducted and updated at a national level	1.1. No. and type of projects that conduct and update risk and vulnerability assessments	**31.638**
Outcome 4.2 Strengthening vertical coordination and collaboration between national and local government in climate adaptation context	Number of knowledge products from local activities communicated at national level	***Output 7:*** Improved integration of climate-resilience strategies into country development plans	7.1. No., type, and sector of policies introduced or adjusted to address climate change risks	**91.647**

Alignment with Adaptation Fund Core Indicators

Core Indicators	Information on the indicators
Number of benefecieries	**1.515 direct beneficiaries and 109.011 indirect beneficiaries** ***Detailed calculation of the direct beneficiaries*** **-7515man and 750 women** - Strengthened capacity of local institutions to mainstream climate change in Community and City Development Planning, best practice of local climate adaptations and to document and disseminate lessons learned of **100** persons (at mid-term) (20% of them women) - Informed of local climate change issues and adequate measures to be implemented for 400 persons (200 adult women, 200 adult men,) - . 16 communities groups participating in adaptation planning, project management meetings, implementation and monitoring activities have the tools, knowledge and skills to respond to new conditions results from climate variability and change ***Detailed calculation of the indirect beneficiaries*** - All project activities will have an impact on the entire city population
Assets produced, Developed, Improved, or Strengthened	**Assets improved or strengthened (in short-term)** - 1400 m coastal embakment - 885 households - 171 aqua culture (fish pond, shrimp pond) - 3S anitation/latterine 192 individual (spesially for women Headed Household and 16 communal) - 8 sanitation in 8 communities - 20 Mangrove - 70 mounds of manggrove PIM (Mangrove information center) - **Assets improved or strengthened (long-term)** − The entire community in Pekalongan city
Increased income, or avoided decrease in income	. The development of fish and Shrimp farms to improve populations' will avoided 20% decrease - The reforestation of 20 hectares of mangrove is also planned to play an important role in the fight against flooding, reproduction, and the development of certain fish species, shrimp development,. After three years, the mangrove can contribute to the fish and shrimp farming development. The development of two ecotourism to increase income .. and play important role in the fight against flooding, reproduction, and the development of certain fish species, shrimp development
Natural Assets Protected or Rehabilitated	20 ha of mangrove

No	Population (community)	Men	Women
1	Bandengan	3.525	3.371
2	Degayu	4.244	4.048
3	Kandang Panjang	7.480	7.370
4	Krapyak	10.463	9.828
5	Padukuhan Kraton	7.278	7.317
6	Panjang Baru	5.714	5.503
7	Panjang Wetan	7.376	6.999
8	Pasir kraton Keramat	9.388	9.097
	Total	**55.468**	**53.533**

No	Headed Houshold/vilage	Men	Women
1	Bandengan	1.767	535
2	Degayu	2.170	457
3	Kandang Panjang	3.832	1.218
4	Krapyak	5.127	1.440
5	Padukuhan Kraton	3.743	1.190
6	Panjang Baru	2.860	752
7	Panjang Wetan	3.715	1.145
8	Pasir kraton Keramat	4.841	9.097
	Total	28.055	8.201

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

Description Item			Year				Notes
Total Project/Programme Cost			1	2	3	Total	
Component 1. Enhancing coastal community capacity in developing Climate change adaptation actions and community information system							
Outcome	1.1	Enhanced capacity of local actors in identifying, initiating, strengthening, and escalating community-based actions to address climate risk and natural disaster;					
Output	1.1.1	Community climate working group established and functioning in each of the					
Activity	1.1.1.1	Preparation to develop climate working group	8.800			**8.800**	
	1.1.1.2	Workshop & Technical meeting series (Capacity development, increasing awarenes, Technical meeting for innovative adaptation actions)	31.969	31.969	31.969	**95.908**	Monthly workshop, technical meeting, capacity development in 8 community for 2 years
	1.1.1.3	Seminar/workshop	7.492			**7.492**	80 participants
Output	1.1.2	Enhancing coastal community capacity in developing the community profile and implementing the ensuing climate change adaptation actions					
Activity	1.1.2.1	workshop related to climate adaptation action and coastal resilience	11.031	11.031	11.030	**33.092**	70 partcipants, 2 times/years
	1.1.2.2	Training PCRA	43.285			**43.285**	PCRA: particiaptory Climate risk assessment training 1 ToT for community facilitators 1 Training for PCRA in 8community 1 training viilage profile/community information system in 8 community
	1.1.2.3	TA for Community profile and community information system	21.254			**21.254**	TA: technical assisstant (by consusltant)
	1.1.2.4	TA for PCRA & Community profile	21.254			**21.254**	TA: technical assisstant (by consusltant)
	1.1.2.5	Dissemination RAD API Pekalongan city	10.750			**10.750**	RAD API: Local action plan on climate adaptation
Outcome	1.2.	Enhancing local community adaptive actions capacity, including developing livelihood strategies					
Output	1.2.1	Agreed adaptation action in each community implemented (i.e. mangrove restoration and ecotourism, supporting farmers group in cultivating rice and fish varieties that tolerant to high salinity, rain water harvesting construction etc.)					
Activity	1.3.1.1	Detailed engginering design community-based adaptation actions in 8 communities	20.000			**20.000**	By consultant/climate, infrastructure expert
	1.3.1.2	Implement agreed adaptation action in 8 communities implemented (i.e. mangrove restoration and ecotourism, supporting farmers group in cultivating rice and fish varieties that tolerant to high salinity, rain water harvesting construction etc.)					
	1.3.1.2.1	Shrimp Vannamei	35.897	71.795		**107.692**	
	1.3.1.2.2	Fish pond (nila salin etc)	73.590	147.179		**220.769**	
	1.3.1.2.3	Mangrove Restoration	34.985	69.969		**104.954**	
	1.3.1.2.4	individual Laterine	49.846	99.692		**149.538**	
	1.3.1.2.5	Communal Latterine s	40.616	62.769		**103.385**	

Component 2: Enhancing local government and other city stakeholders' capacity to develop local climate change adaptation action plan (RAD API), Implementing climate smart initiatives							
Outcome	**2.1**	Enhancing local government and other city stakeholders' capacity in developing climate risk assessment and utilizing the results to develop local climate change adaptation action plan (RAD API),					
Output	**2.1.1**	City climate working group reactivated					
	2.1.1.1	Workshop & Technical meeting series (Capacity development, increasing awarenes, Technical meeting for innovative adaptation actions)	10.892	10.892	10.892	**32.677**	Monthly workshop, technical meeting, capacity development
	2.1.1.2	SeminarTraining	8.469	4.235	4.235	**16.938**	
	2.1.1.3	Preparation of mayor decree on city climate working group	769			**769**	
Output	**2.1.2**	RAD API developed based on City Climate Risk Assessment and Climate Coastal Impact					
Activity	**2.1.2.1**	Leadership training or workshop for local champion include local government agency	4.231			**4.231**	
	2.1.2.2	Vulnerability and Risk Assessment Trainiing	37.754			**37.754**	
	2.1.2.3	Verification meeting of VA and RA	4.238			**4.238**	
	2.1.2.4	Develop Coastal Climate Impact	69.231			**69.231**	By consultant
	2.1.2.5	TA for RAD API (city climate adaptation actions)	0				fit in city working group reguler meeting
Output	**2.1.3**	Strategy to integrate CCA into local government planning processes (annual work plan or mid-term development plan of city) is developed					
Activity	**2.1.3.1**	Analyzing previous city development plan	0				fit in city working group reguler meeting
	2.1.3.2	Training of Integrating RA into Development Plan	22.504			**22.504**	
	2.1.3.3	Technical assistant of Integrating City Adaptation Action into City Development Plan	0				Include on city working group reguler meeting
	2.1.3.4	Dissemination	6.588			**6.588**	
outcome	**2.2**	Implementing innovative and Collaborative Climate Change Adaptation actions measures, including those fostering sustainable utilization of natural resources, with replicable implementation and financing schem					
Output	**2.2.1.**	Innovative and collaboration adaptation actions are implemented					
Activity	**2.2.1.1**	Consultation meeting to identify and select coastal resilience actions conducted	7.231			**7.231**	
	2.2.1.2	Scoping study and feasibility study documents on the selected coastal resilience actions	76.923			**76.923**	
	2.2.1.3	Innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference					Coastal embankment, aquaculture, ecotourism, individual and communal laterine
	2.2.1.3.1	Coastal Embankment (geo-tube system/sand trap)		947.692	236.923	**1.184.615**	Degayu & Kandang Panjang Communities
	2.2.1.3.2	Vannamei Shrimp (revolving fund)		184.615	46.154	**230.769**	Degayu Community
	2.2.1.3.3	Fish pond (nila salin etc)		147.692	36.923	**184.615**	
	2.2.1.3.4	Mangrove Restoration		73.231	18.308	**91.538**	Mangrove Information Center (PIM)
	2.2.1.3.5	EcoTourism		123.077	30.769	**153.846**	Degayu and Selamaran
	2.2.1.3.6	Laterine suitable in flood prone area (individual)		59.077	14.769	**73.846**	8 Communities
	2.2.1.3.7	laterine in flood prone area (Communal)		98.462	24.615	**123.077**	8 Communities
	2.2.1.4	Developed monitoring system for pilot initiative		5.128	2.564	**7.692**	Internal and external evaluator
	2.2.1.5	Evaluated of Pilot Innovative for future refference		4.103	2.051	**6.154**	Internal and external evaluator
	2.2.1.6	workshop Collaborative Adaptation actions across vilages			11.723	**11.723**	8 community cwg, city cwg, private sector, local NGO's and university will be active participants
	2.2.1.7	Facilitate Collaborative Adaptation actions across vilages			20.508	**20.508**	8 community cwg, city cwg, praivate sector and university will be active participants

Outcome	**2.3**	Establishing city-level knowledge management platform					
Output	**2.3.1**	Climate change training and knowledge sharing conducted					
Activity	**2.3.1.1**	Climate change training		13.077		**13.077**	
	2.3.1.2	Knowledge management Forum	11.538	11.538	11.538	**34.615**	Local champion from 8 communities, city government, private sectors, University and local NGO's will be active participants
Output	**2.3.2**	**Local knowledge sharing platform established**					
Activity	**2.3.2.1**	Knowledge product (i.e. lessons learned, research paper, newsletter) publish		**27.692**	**6.923**	**34.615**	
	2.3.2.2	Advocacy materials (i.e. policy brief, policy analysis, gap analysis) developed		**17.500**	**17.500**	**35.000**	
	2.3.2.3	City knowledge sharing platform established	**43.590**	**87.179**		**130.769**	
Component 3: Strengthening vertical coordination by enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan							
Outcome	**3.1**	Enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan					
Output	**3.1.1**	Enhanced provincial capacity to develop RAD API					
Activity	**3.1.1.1**	Conduct Training and workshop on risk assessment and adaptation actions conducted	11.000			**11.000**	
	3.1.1.2	Fasilitate Climate risk assessment of Central Java Province with community level as the smallest assessment scale is developed	1.436			**1.436**	
	3.1.1.3	TA for RAD API	2.872			**2.872**	
Output	**3.1.2**	Strategy to integrate CCA into Provinciall government planning processes (annual work plan or mid-term development plan of city) is developed					
Activity	**3.1.2.1**	Analizing previous Provincial development plan	458			**458**	
	3.1.2.2	Training of Integrating RA into Development Plan	10.954			**10.954**	
	3.1.2.3	Technical assistant of Integrating provincial Adaptation Action into City Development Plan	2.177	2.177		**4.354**	
Component 4. Strengthening vertical coordination and collaboration between national and local government in climate adaptation context and Enriching knowledge, toolkits and methodologies coastal resilience for the national government							
Outcome	**4.1**	Enriching SIDIK as risk assessment tools for coastal area based on local experience					
Output	**4.1.1**	Knowledge product in the form Handbook on how to use SIDIK for risk assessment at coastal city is published and shared. This handbook is targeted to be used by local government, NGOs and civil society organizations					
Activity	**4.1.1.1**	Develop handbook on how to use SIDIK for risk assessment at coastal based on Pekalongan experiences		5.962	5.962	**11.923**	
	4.1.1.2	Handbook dissemination			19.715	**19.715**	
Outcome	**4.2**	Strengthening vertical coordination and collaboration between national and local government in climate adaptation context					
Output	**4.2.1**	Strengthened vertical coordination and collaboration between national and local government in climate adaptation context					
Activity	**4.2.1.1**	Coordination and collaboration with materials that also incorporate local experience		10.231		**10.231**	
	4.2.2.2	National dialogue that involved local and national government is conducted in order to support the activity of RAN API Secretariat		14.285	14.285	**28.569**	
	4.2.2.3.	Policy papers regarding gaps in national policy, fiscal, regulatory and legal framework to build a resilient coastal city are developed and communicated	6.654	6.654		**13.308**	
	4.2.2.4.	Communication with national knowledge platform is built and maintained	2.885	11.538	8.654	**23.077**	
	4.2.2.5	Mapping Coastal resilience policy		8.231	8.231	**16.462**	
Total Project/Programme Cost (component 1-4)			**807.008**	**2.326.227**	**584.842**	**3.718.077**	
Total Project Execution Cost (PEC) and M&E Cost						**353.217**	
Project/Programme Cycle Management Fee charged by the Implementing Entity						**55.771**	
Amount of Financing Requested						**4.127.065**	

Project Execution Cost (PEC)

Description	Year 1	Year 2	Year 3	Total	Remarl
Staff					
Team Leader	24.600	24.600	24.600	**73.800**	
Admin & Finance Manager	6000	6000	6000	**18.000**	20% by A 80% by T Partnersh
Project Officer	11.000	12.000	12.000	**35.000**	
M&E Officer	11.000	12.000	12.000	**35.000**	
Finance & Admin Officer	12.000	12.000	12.000	**36.000**	
Community Fasilitator 1	7.150	7.800	7.800	**22.750**	
Community Fasilitator 2	7.150	7.800	7.800	**22.750**	
Sub total Staff	78.900	82.200	82.200	**243.300**	
Operation					
Office space & utilities	6.281	6.281	6.281	**18.843**	
Communication	3.157	3.157	3.157	**9.471**	
Stationaries, sundries	2.825	2.825	2.825	**8.474**	
Equipment	8.130			**8.130**	
Sub Total Operation	20.392	12.263	12.262	**44.917**	
M&E	20.000	22.500	22.500	**65.000**	
Total	**119.292**	**116.963**	**116.962**	**353.217**	

11.154

20%

Project Cycle management Fee

Project Cycle Management Fee	Ammount (USD)	Distribution
Project identification and Development: (i) Consult with appropriate stakeholder's in-country (ii) Provide technical support for Project preparation (iii) Assist in the determination of Implementation Arrangements and negociation with all stakeholder's and level of intervention (iv) Obtain endorsement letter(s) from City untill Minstry	2.789	5%
Project Implementation and Supervision:	41.828	75%

	(i)	Provide technical guidance, as necessary, for project implementation			
	(ii)	Regular reporting			
	(iii)	Project financial follow-up			
	(iv)	Pay advances to the executing entity and review financial reports.			
	(v)	Oversight and monitoring of AF funds.			
	(vi)	Prepare periodic revisions to reflect changes in annual expense category budgets			
	(vii)	Participate as necessary during Project activities			
Evaluation					
	(i)	Undertake technical analysis, validate results and compile lessons.			
	(ii)	Disseminate technical findings.			
	(iii)	Oversee the preparation of the Project Completion Report/Independent Terminal Evaluation; submit the report to AF Secretariat.			
	(iv)	Prepare project closing documents.			
	(v)	Prepare the financial closure of the project			
Total				55.771	100 %

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

Disbursement Schedule

Description	Upon Agreement Signature	One Year After Project Start	Year 2	Total
Project Funds	926.300	2.443.190	701.804	**4.071.294**
Implement Entity Fee	12.827	33.463	9.481	**55.771**
Total	**939.127**	**2.476.653**	**711.285**	**4.127.065**

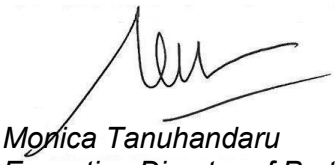
PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[30] *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:*

Dr. Ir. Nur Masripatin M.For. Sc *Director General for Control of Climate Change*	Date*: April, 7, 2017*

Ir. Anita Heru Kusumorini, MSc *Head of The Agency for Regional Planning Pekalongan City*	Date*: April, 8, 2019*

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

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (President Decree No. 16 year 2015; P.13/Menlhk/Setjen/OTL.0/1/2016; P.33/Menlhk/Setjen/Kum.1/3/2016; Indonesia Intended Nationally Determined Contribution/INDC; COP 21 Paris Agreement signed by Government of Indonesia; Book and Map of Information System of Vulnerability Index Data (SIDIK); Permen-KP No. 2 year 2013; Climate Change Adaptation National Action Plan) 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.	
 *Monica Tanuhandaru* *Executive Director of Partnership for Governance Reform in Indonesia (Kemitraan)* Implementing Entity Coordinator	
Date: *July, 28, 2016*	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

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

ANNEX 1

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ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Prepared for the Implementation of the Program "*Building Coastal City Resilience to Climate Change Impacts and Natural Disasters*"

Contents

I. INTRODUCTION

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I.1. Rationale

This document of Environmental and Social Management Plan is developed to ensure that the proposed program implementation will align with the environmental and social safeguard of Adaptation Fund as well as the applicable national, regional and local regulations in area where the program is implemented. This document contains assessment of the required management, mitigation and monitoring activities to manage the relevant environmental and social impacts as identified during the risk identification and assessment process. It expresses how the program will try it utmost to conform to the provisions of Adaptation Fund Environmental and Social Policies by developing a structure that will ensure the program's potential risks will be managed in an effective manner.

I.2. Applicability of Plan

The management measures set out within the plan is applicable throughout the program period; from planning until the implementation stage.

I.3. Summary of Project Description

Climate change has led to the rise of sea level and changes in rainfall patterns in Pekalongan City. The rainfall pattern in recent years has become more intense and occurs in a shorter period, which then leads to flooding. Flooding in northern part of Pekalongan City, either those caused by increased rainfall or sea level rise, have contributed to many interconnected problems. Extreme climate events like heavy rains, combined with sea-level rise have resulted in more frequent and more unpredictable floods that threaten populations' security and goods. Climate change is thus impeding Pekalongan City development. One example of this impediment is the decrease of agricultural land area in nine villages of Pekalongan city that reaches 73% between the period 2007-2016 due to the land being submerged in sea water and also high salinity level of the irrigation water. This condition has threatened Pekalongan City food security by reducing rice and other agricultural production.

This program is specifically designed to reach a goal of *Building Coastal City Resilience to Climate Change Impacts and Natural Disasters*, with a particular focus economic/livelihood and food livelihood while simultaneously preserving the environment; touching not only practical aspect but also promoting policy. It will foster pro-poor adaptation actions that involve and benefit the most vulnerable communities in the city. Sustainable development principle will be held at core here to ensure efforts being done at one sector will not create negative impact and incremental losses in the other.

In view of this multifaceted issue, the proposed program framework will be instilled by multidisciplinary and iterative process, with a series of assessment, study and activities to be derived from. Accordingly, the program will not only emphasizing on building hard structure, but also strengthen soft structure (institutional realms, including capacity building) in addressing the issue; creating a paradigm shift from the conventional approach that mostly revolving around building infrastructure that could only serve short-term purposes to newer perspective that allow for continual development and evaluation. This approach will try to simultaneously address the issue of physical structure for coastal protection and adaptation, preserving and developing community livelihood in addition to developing and promoting local tourism in coastal area; balancing the objectives in the above sectors without jeopardizing the sustainability of the others.

The proposed and selected adaptation activities being implemented under the umbrella of the program will be based on scientific basis to corroborate and better understand the pattern of current and future of climate risk. This science-based information is essential to create and develop an effective adaptation. Effective adaptation action should also be built on existing actions; adjusting and leveraging practices that are socially- and environmentally-friendly, while leaving practices that potentially cause adverse impact.

At the core of this framework is collaborative approach by fostering multi-stakeholder involvement, to bring about different interest on the issue and resolve it amicably to achieve common goals. To achieve the goal, the program will be conducted at 4 governance level, with main objectives at each level are as follows:

1. **Village Level**
   (i). Enhancing coastal community capacity in developing and implementing Climate change adaptation actions and village information system including developing livelihood strategies, by also taking into account relevant local wisdom

2. **City Level:**
   (i). Enhancing local government and other city stakeholders' capacity in developing local climate change adaptation action plan (RAD API) and implement Climate smart actions

3. **Provincial Level:**
   (i). Strengthening vertical coordination by enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan, which in turn could foster better climate-related policy on climate financing and bottom-up planning.

4. **National Level**
   (i). Strengthening vertical coordination and collaboration between national and local government in climate adaptation context and enriching knowledge, toolkits and methodologies coastal resilience for the national government

Combination of bottom-up and top-down approach will be implemented within the proposed program to ensure a cohesive climate adaptation plan/program/policy and its implementation at all governance level. In general, the program will focus on 4 aspects, which are capacity development, adaptation action, knowledge management and policy advocacy. Figure 1 below illustrates the interconnection between actions at different governance level within the program, with brief information on each aspect.

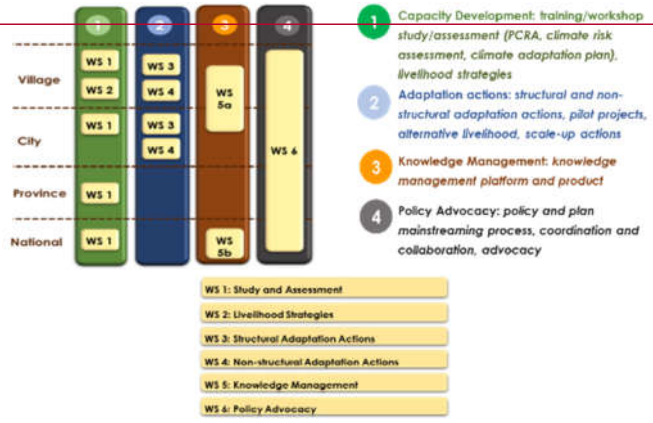

Figure 1. Interconnection of 4 Aspects at 4 Governance Level

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~~Figure 1. Interconnection of 4 Aspects at 4 Governance Level~~

I.4. Compliance

The program and plan is complies with the national relevant regulation, standards and principles, as well as Adaptation Fund Environmental and Social Principle.

I.4.1. National Regulation

The applicable National Regulations to the plan are as follow:

a. Law No. 32 Year 2009 on Environmental Protection and Management
b. Government Regulation Number 27/2012 on Environmental Permit and Environmental Impact Assessment
c. Ministry of Environment and Forestry Regulation No. 33 Year 2016 on Guidance for the Development of Climate Change Adaptation Action
d. Ministry of Environment Regulation No. 5 Year 2012 on Types of Activities that Require AMDAL
e. Ministry of Environment Regulation No. 16 Year 2012 on Guidance to Develop Environmental Document (AMDAL, UKL-UPL and SPPL)
f. Ministry of Environment Regulation No. 8 Year 2013 on Procedure for Assessment and Checking of Environmental Document, as well as Environmental Permit Issuance
g. Ministry of Public Works Regulation No. 10 Year 2008 on Types of Activities under Public Works Sector that Require UKL/UPL
h. Indonesia National Standard on Design Procedure for Septic Tank with Infiltration System and Latrine
i. Housing Construction and Development Standard from Ministry of Public Works

I.4.2. Adaptation Fund Environmental and Social Principles

The applicable Adaptation Fund Environmental and Social Principles are as follow:

a. Compliance with the Law
b. Access and equity
c. Marginalized and vulnerable groups
d. Human rights
e. Gender equity and women´s empowerment
f. Core labour rights
g. Indigenous people
h. Involuntary resettlement
i. Protection of natural habitats
j. Conservation of biological diversity
k. Climate change
l. Pollution prevention and resource efficiency
m. Public health
n. Physical and cultural heritage
o. Land and soil conservation

Compliance to the abovementioned principles will be outlined in further detail on section I.6 ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

I.5. SCOPE

The management plan presented within the document considers risks being identified and assessed that outlined in section I.6 ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT.

I.6. ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

Environmental and social impact assessment for this proposed program is being done by following the chart below.

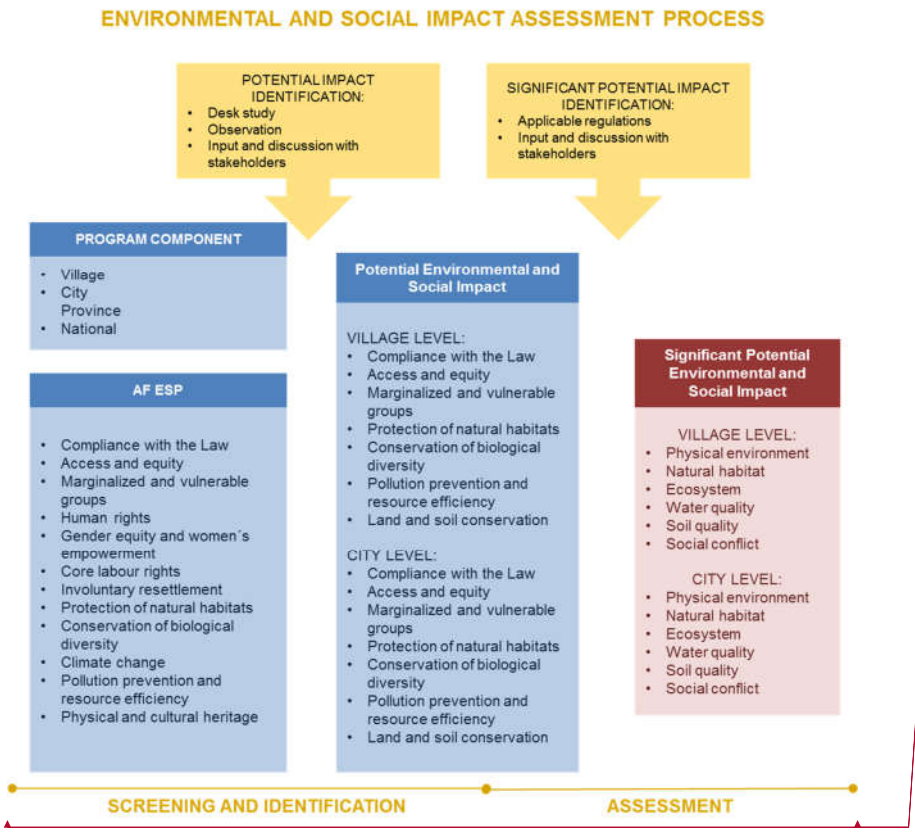

Figure 2. Environmental and Social Impact Assessment Process

1.6.1. Environmental and Social Impact Screening and Identification

The screening and identification process ~~is~~ are being undertaken at the initial stage of assessment to identify at which program component that potential environmental and social impacts associated with AF ESP could arise. The screening and identification result ~~is~~ are presented at table 1 below. The process shows that no potential impacts can be identified for program implementation at province and national level. Potential impacts only identified at village and city level; and the program has no environmental and social impacts associated with 8 out of 15 AF ESP Principles.

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Table 1. Screening Result against AF ESP Principles

No	ESP	Program Component (Level)			
		Village	City	Province	National
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 Labour Rights	-	-	-	-
7	Indigenous People	-	-	-	-
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	Land and Soil Conservation	√	√	-	-

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1.6.2. Environmental and Social Impact Assessment

From the screening and identification process, it was identified that potential environmental and social impacts only associated with 7 ESP principles, which are:

- Compliance with law
- Access and equity
- Marginalized and vulnerable groups
- Protection of natural habitats
- Conservation of biological diversity
- Pollution prevention and resource efficiency
- Land and soil conservation

Based on the preceding screening and identification process, the next step is to assess significant potential environmental and social impact at each component that associated with the abovementioned AF ESP Principle, and what output that could potentially resulting in the impacts. The impacts themselves are divided into two categories (environmental and social), which then further divided into a total of 6 (six) sub-categories depending on the receptor of the impacts. The sub categories are:

a. Physical environment
b. Natural habitat
c. Ecosystem
d. Water quality
e. Soil quality
f. Social conflict

The environmental and social impact assessment results are shown in Table 2 below.

Table 2. Significant Potential Environmental and Social Impact from Program Implementation

No	ESP	Program Component	Program Output/Activity	Environmental Component					
				Environmental					Social
				Physical Environment	Natural Habitat	Ecosystem	Water Quality	Soil Quality	Social Conflict
1	Compliance with the Law	Village Level	Output 1.2.1 Agreed adaptation action in each village implemented (i.e. mangrove restoration, supporting farmers group in implementing ~~vennamei~~ vannamei shrimp and bandeng aquaculture farming, and also individual and communal latrine)	-	-	-	-	-	-
			Activity 1.2.1.2 Implement agreed adaptation action in 8 villages	-	-	-	-	-	-
			Reconstruction of individual sanitation facilities	Minor physical environment disruption from mobilization and construction process such as minor damage to road access from construction material	-	-	-	-	-
			Construction of communal sanitation facilities	Minor physical environment disruption from mobilization and construction process such as minor damage to road access from construction material	-	-	-	-	-
2		City Level	Output 2.2.1 Innovative and collaboration adaptation actions are implemented	-	-	-	-	-	-
			Activity 2.2.1.3 Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference	-	-	-	-	-	-

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			Geotube construction	Physical environment disrruption from mobilization and construction process	-	-	-	-	-
			Eco-tourism	Physical environment disrruption from mobilization and development process	-	-	-	-	-
			Construction of communal sanitation facilities	Minor physical environment disruption from mobilization and construction process of communal sanitation facilities (floating and non-floating design) such as minor damage to road access from construction material	-	-	-	-	-
3	Access and equity	Village Level	Output 1.2.1 Agreed adaptation action in each village implemented (i.e. mangrove restoration, supporting farmers group in implementing vennamei shrimp and bandeng aquaculture farming, and also individual and communal latrine)	-	-	-	-	-	-
			Activity 1.2.1.2 Implement agreed adaptation action in 8 villages	-	-	-	-	-	Social conflict arising from selection of community member that will be the implementer and beneficiaries of adaptation actions and alternative livelihood
4		City Level	Output 2.2.1 Innovative and collaboration adaptation actions are implemented	-	-	-	-	-	-

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			Activity 2.2.1.3 Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference	-	-	-	-	-	Social conflict arising from selection of community member that will be the implementer and beneficiaries of adaptation actions and alternative livelihood
5	Marginalized and Vulnerable Groups	Village Level	Output 1.2.1 Agreed adaptation action in each village implemented (i.e. mangrove restoration, supporting farmers group in implementing vennamei shrimp and bandeng aquaculture farming, and also individual and communal latrine)	-	-	-	-	-	
			Activity 1.2.1.2 Implement agreed adaptation action in 8 villages	-	-	-	-	-	Social conflict arising from selection of priority activities site and design which could raise envy from other community member that will not directly exposed to the program
6		City Level	Output 2.2.1 Innovative and collaboration adaptation actions are implemented	-	-	-	-	-	
			Activity 2.2.1.3 Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference	-	-	-	-	-	Social conflict arising from selection of priority activities site and design which could raise envy from other community member that will not directly exposed to the program

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7	Protection of Natural Habitats	Village Level	Output 1.2.1 Agreed adaptation action in each village implemented (i.e. mangrove restoration, supporting farmers group in implementing vennamei shrimp and bandeng aquaculture farming, and also individual and communal latrine)	-	-	-	-	-	-
			Activity 1.2.1.2 Implement agreed adaptation action in 8 villages	-	-	-	-	-	-
			Vennamei shrimp aquaculture farm	-	Aquaculture preparation process could disrupt the existing natural habitat	-	-	-	-
			Bandeng aquaculture farm	-	Bandeng aquaculture farm preparation process could disrupt the existing natural habitat	-	-	-	-
			Mangrove restoration	-	Mobilization and planting process of mangrove belt could potentially impact the surrounding ecosystem	-	-	-	-
			Construction of communal sanitation facilities	-	Potential impact to the surrounding coastal ecosystem during construction and operational process of floating sanitation facilities	-	-	-	-
8		City Level	Output 2.2.1 Innovative and collaboration adaptation actions are implemented	-	-	-	-	-	-

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			Activity 2.2.1.3 Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference	-	-	-	-	-	-
			Geotube construction	-	The impact of geotube material mobilization and construction process to the existing surrounding coastal ecosystem	-	-	-	-
			~~Vennamei~~ Vannamei shrimp aquaculture farm	-	Aquaculture preparation process could disrupt the existing natural habitat	-	-	-	-
			Bandeng aquaculture farm	-	Bandeng aquaculture farm preparation process could disrupt the existing natural habitat	-	-	-	-
			Eco-tourism	-	Waste generation and water pollution from ecotourism site preparation, development and operational activities could pollute the water and subsequently disrupt natural habitat	-	-	-	-
			Construction of communal sanitation facilities		Potential impact to natural habitat during construction and operational process of	-	-	-	-

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					floating sanitation facilities				
9	Conservation of Biological Diversity	Village Level	Output 1.2.1 Agreed adaptation action in each village implemented (i.e. mangrove restoration, supporting farmers group in implementing vennamei shrimp and bandeng aquaculture farming, and also individual and communal latrine)	-	-	-	-	-	-
			Activity 1.2.1.2 Implement agreed adaptation action in 8 villages	-	-	-	-	-	-
			Vennamei shrimp aquaculture farm	-	-	• Minor ecological disruption from introduction of vennamei shrimp to body of water • Minor disruption in benthic community from aquaculture facilities installation and its implementation	-	-	-
			Bandeng aquaculture farm	-	-	• Minor ecological disruption from introduction of bandeng to body of water • Minor disruption in plankton and benthic community from aquaculture facilities installation and its implementation	-	-	-
			Mangrove restoration			Minor environmental and ecological disruption from alteration of resource management from introduction of new mangrove species to the environment	-	-	Potential social conflict (resistance) with land-owner to allocate their unproductive private land for mangrove restoration site

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10		City Level	Output 2.2.1 Innovative and collaboration adaptation actions are implemented	-	-	-	-	-	-
			Activity 2.2.1.3 Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference	-	-	-	-	-	-
			Geotube construction	-	-	Ecosystem disruption from mobilization and construction process of geotube	-	-	-
			Mangrove restoration	-	-	Minor environmental and ecological disruption from alteration of resource management from introduction of new mangrove species to the environment	-	-	Potential social conflict (resistance) with land-owner to allocate their unproductive private land for mangrove restoration site
			Vennamei shrimp aquaculture farm	-	-	• Minor ecological disruption from introduction of vennamei shrimp to body of water • Minor disruption in benthic community from aquaculture facilities installation	-	-	-
			Bandeng aquaculture farm	-	-	• Minor ecological disruption from introduction of bandeng to body of water • Minor disruption in benthic community from aquaculture facilities installation	-	-	-
			Eco-tourism	-	-	• Waste generation and water pollution from ecotourism site preparation, development and operational activities could disrupt natural habitat and	-	-	-

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						ecosystem balance • Large number of human presence and noise could disturb natural fauna in the area			
			Construction of communal sanitation facilities			Potential impact to the surrounding ecosystem during construction and operational process of floating sanitation facilities	-	-	-
11	Pollution Prevention and Resource Efficiency	Village Level	Output 1.2.1 Agreed adaptation action in each village implemented (i.e. mangrove restoration, supporting farmers group in implementing vennamei shrimp and bandeng aquaculture farming, and also individual and communal latrine)	-	-	-	-	-	-
			Activity 1.2.1.2 Implement agreed adaptation action in 8 villages	-	-	-	-	-	-
			Vennamei shrimp aquaculture farm	-	-	-	Water pollution from aquaculture farming practices, including: • Potential for overpopulation within the aquaculture farm • By-product from aquaculture farming • Sedimentation (increased concentration of organic matter) due to accumulation of shrimp fee in aquaculture farm • Traditional harvesting method that allows aquaculture water flows into drainage system • Non-existent	-	-

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						aeration that allows sedimentation accumulation at the bottom of the pond			
			Bandeng aquaculture farm	-	-	-	Water pollution from aquaculture farming practices, including: • Potential for overpopulation within the aquaculture farm • • By-product from aquaculture farming Sedimentation (increased concentration of organic matter) due to accumulation of fish feed in aquaculture farm • Traditional harvesting method that allows aquaculture water flows into drainage system • Non-existent aeration that allows sedimentation accumulation at the bottom of the pond	-	-
			Mangrove restoration	-	-	-	Water pollution from mangrove belt planting process	-	-
			Reconstruction of individual sanitation facilities	-	-	-	Ground water pollution from construction process of the facilities and the effluent of sanitation facilities (during its operational phase)	-	-

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			Construction of communal sanitation facilities	-	-	-	Ground water or sea water pollution from construction process of the facilities and the effluent of sanitation facilities (during its operational phase)	-	-
12		City Level	Output 2.2.1 Innovative and collaboration adaptation actions are implemented	-	-	-	-	-	-
			Activity 2.2.1.3 Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference	-	-	-	-	-	-
			Geotube construction	-	-	-	• Water pollution from mobiliization and construction process of geotube • Sedimentation from mobiliization and construction process of geotube	-	-
			Mangrove restoration	-	-	-	Increase in water turbidity during mangrove restoration process	-	-
			Vennamei shrimp aquaculture farm	-	-	-	Water pollution from aquaculture farming practices, including: • Potential for overpopulation within the aquaculture farm • Sedimentation (increased concentration of organic matter) due to accumulation of shrimp fee in aquaculture farm • Traditional harvesting method that allows aquaculture water flows into drainage system	-	-

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						• Non-existent aeration that allows sedimentation accumulation at the bottom of the pond			
			Bandeng/nila farm pond	-	-	-	Water pollution from aquaculture farming practices, including: • Potential for overpopulation within the aquaculture farm • Sedimentation (increased concentration of organic matter) due to accumulation of fish feed in aquaculture farm • Traditional harvesting method that allows aquaculture water flows into drainage system • Non-existent aeration that allows sedimentation accumulation at the bottom of the pond	-	-
			Eco-tourism	-	-	-	Water pollution due to solid waste generation and effluent from the site's toilet facilities, and other operational activities in the eco-tourism site	-	-
			Reconstruction of individual sanitation facilities	-	-	-	Ground water or sea water pollution from construction process of the facilities, effluent from sanitation facilities (during its	-	-

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							operational phase), and potential leakage from the facilities		
			Construction of communal sanitation facilities	-	-	-	Ground water or sea water pollution from construction process of the facilities, effluent from sanitation facilities (during its operational phase), and potential leakage from the facilities	-	-
13	Land and Soil Conservation	Village Level	Output 1.2.1 Agreed adaptation action in each village implemented (i.e. mangrove restoration, supporting farmers group in implementing vennamei shrimp and bandeng aquaculture farming, and also individual and communal latrine)	-	-	-	-	-	-
			Activity 1.2.1.2 Implement agreed adaptation action in 8 villages	-	-	-	-	-	-
			Reconstruction of individual sanitation facilities	-	-	-	-	Soil pollution from construction process of the facilities and potential soil contamination from effluent of sanitation facilities (during its operational phase), and potential leakage from the facilities	-
			Construction of communal sanitation facilities	-	-	-	-	Soil pollution from construction process of the facilities and potential soil contamination from effluent of sanitation facilities (during its operational phase), and potential leakage	-

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								from the facilities (if the facilities are not floating design)	
14		City Level	Output 2.2.1 Innovative and collaboration adaptation actions are implemented	-	-	-	-	-	-
			Activity 2.2.1.3 Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference	-	-	-	-	-	-
			Geotube construction	-	-	-	-	Soil pollution from solid waste, oil-based waste and waste watre during mobilization and construction process of geotube	-
			Eco-tourism	-	-	-	-	Soil pollution from waste generation and waste water contamination during operational activities in the eco-tourism site	-
			Reconstruction of individual sanitation facilities	-	-	-	-	Soil pollution from construction process of the facilities and potential soil contamination from effluent of sanitation facilities (during its operational phase), and potential leakage from the facilities	-

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			Construction of communal sanitation facilities	-	-	-	-	Soil pollution from construction process of the facilities and potential soil contamination from effluent of sanitation facilities (during its operational phase), and potential leakage from the facilities (if the facilities are not floating design)	-

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Significant potential environmental and social impacts based on the assessment above will be managed accordingly throughout the program by referring to the environmental and social management plan that will be presented in section I.7 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN.

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1.6.3. Compliance to AF ESP

The following section presents the program compliance to AF ESP Principles.

a. *Compliance with the Law*

The program is designed in compliance with all applicable national, regional and local law, including:

- Law Number 32/2009 on Environmental Protection and Management.
- Government Regulation Number 27/2012 on Environmental Permit and Environmental Impact Assessment
- Law 32/2009 on Environmental Protection and Management.
- Government Regulation 27/2012 on Environmental Permit and Environmental Impact Assessment
- Ministry of Environment Regulations 5/2012 on Types of Activities that Needs to be Equipped with Environmental Impact Assessment
- Ministry of Environment Regulations 16/2012 on Guidance to Develop Environmental Document (AMDAL, UKL-UPL and SPPL)
- Ministry of Environment Regulation 8/2013 on Procedure for Assessment and Checking of Environmental Document, as well as Environmental Permit Issuance
- Ministry of Public Works Regulation 10/2008 on Types of Activities under Public Works Sector that Require UKL/UPL

According to the abovementioned regulations, EIA is not compulsory for the selected adaptation actions under the program; however the following environmental documents should be submitted prior to the implementation of specific adaptation actions so that environmental permit can be issued by the city government:

- Individual and communal sanitation facilities (latrine): SPPL document
- Aquaculture: UKL-UPL document
- Geotube construction: UKL-UPL document
- Eco-tourism: UKL-UPL document

Every 6 months, regular monitoring will be required for activities that need UKL-UPL, and the report will be submitted to the City's Environmental Agency. The report content itself is outlined in Ministry of Environment Regulation No. 16/2012.

Meanwhile based on the abovementioned regulations, mangrove restoration activity does not need to be equipped with environmental document However, additional permit and compulsory assessment still need to be obtained and undertaken for specific adaptation actions that will be implemented in future time within the program timeframe; particularly for actions listed in the Ministry of Environment Regulation No. 5/2012. For the proposed program, the selected adaptation actions do not falls under the category of activities that need to be equipped with Environment Impact Assessment. Yet, the PMU will ensure mangrove restoration activity and other activities under the program that all activities implemented, particularly those related to structural construction (sanitation facilities, coastal embankment, will prevent negative impacts to the surrounding environment by implementing is ESMP and adhering to the applicable regulations Law 32/2009 and also Housing Construction

Potential risks:
Disruption of physical environment from mobilization, construction and implementation process of adaptation actions.

Requirements and Managements:

- Prepare the required environmental documents prior to the implementation of adaptation actions
- The environmental document will be in coherent with the program's ESMP
- Prepare the necessary environmental management plan for each activity listed in ESMP.
- Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex 1). .

b. *Access and Equity*

The program is designed to ensure fair allocation of access to the community, including in information dissemination. To further disseminate knowledge related to the program, knowledge board will be built in community centre or village office; making it accessible to all community.

Participatory approach employed by the program will further ensure access and equity principle being undertaken during program implementation.

One issue being raised during FGD on Gender Issue conducted during the proposal development stage is workshops and meetings timing that should be done at night time to ensure women's group participation in the process. This issue will be taken into account when designing the relevant activities to ensure all groups have similar access to program information and implementation process.

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Despite the effort in ensuring access and equity principle being carried out within the program, there still a minor potential social risks that could arise during program implementation.

There are Unidentified Sub Projects (USP) in some planned activities especially under the outputs 1.2 and 2.2. We will apply strictly the access and equity principles ensuring that ESP related risks are identified among USPs. Triangulation and cross-learning mechanisms will be employed.

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Potential risks:
Social conflict arising from selection of community member that will be the implementer and beneficiaries of adaptation actions and alternative livelihood at village and city level implementation.

Requirements and Managements:
Stakeholder mapping as the basis for assessment on implementer selection, fair role and responsibilities among stakeholders, equitable distribution of project beneficiaries and also activities site location (including knowledge board location) that could benefit wider community

c. *Marginalized and Vulnerable Groups*

Marginalized and vulnerable groups are the targeted beneficiaries of the program. They will not only act as the passive actor within the program, but also actively involved in the program implementation.

The proposed program will employ participatory approach, particularly at local level, by involving women groups, most vulnerable groups and community representative from different socio-economic level during training, discussion forum and risk assessment process. The planned adaptation actions and alternative livelihood also designed by taking into account their interests.

However, there still a minor potential social risks that could arise during program implementation.

Potential risks:
Social conflict arising from selection of priority activities site and design (at village and city level implementation) which could raise envy from other community member that will not directly exposed to the program

Requirements and Managements:

- Social impact assessment and management plan for the adaptation options will be integrated under UKL-UPL and SPPL document and will be submitted to the city agency. on potential adaptation actions during prioritization process. Pro-poor actions (action that

could benefit those who have the least economic adaptive capacity but has a high exposure to climate risk) should be among the priority
- Social impact assessment and management plan will be in coherent with the Program's ESMP
- Adaptation action design (the site location and structural design for hard structure) that take account the needs and suitability for elderly, children groups, and disable groups; to ensure they can experience the benefit

d. Human Rights

The proposed program is intended to elevate the quality of life of the beneficiaries (including marginalized and vulnerable groups) by creating a better environment for them (physical, social and economic environment).

Furthermore, The Republic of Indonesia has ratified the following International Covenant:
- The International Covenant on Economic, Social, and Cultural Rights into Law Number 11/2005
- International Covenant on Civil and Political Rights into Law Number 12/2005.

The proposed program will adhere to these laws and ensure that Human Rights principles are being carried out throughout the course of the program.

e. Gender Equity and Women´s Empowerment

The Republic of Indonesia has ratified the Convention on the Elimination of All Forms Against Women/CEDAW into Law Number 7/1984. Hence the proposed program will comply with this law and also other applicable national law on Gender Equity and Justice. Gender analysis had been done during proposal development stage and outlined this particular document.

Women groups will be an active participant in the program, where their representative will be selected as Village Working Group member. Furthermore, the program is designed so that trainings on economic livelihood will involve female participant; to ensure they will receive economic benefits from the actions. There is no risk that the husbands will object their wives new livelihood since it will support their household economy.

f. Core Labour Rights

Relevant to labour rights, the nationally applicable regulations are as below:
- Law No. 80 of 1957 concerning Ratification of ILO Convention No. 100 on Equal Remuneration for Men and Women Workers for Work of Equal Value
- Law No. 7 of 1984 concerning Ratification of the Convention on the Elimination of All Forms of
- Discrimination Against Women;
- Law No. 21 of 1999 concerning Ratification of ILO Convention No. 111 regarding Discrimination in Employment and Occupation.
- Law No. 13 of 2003 on Manpower

Accordingly, labour works done under this program will adhere to the above laws, including payment issue. Additionally, the program will also ensure that it will comply with ILO Convention No. 138 and 182 on Child Labour, by assuring that there will be no child labour involved in the program. The program will not pose any risk on labour rights since it will equipthe community member with additional skills.

g. Indigenous People

Community resides within the geographical scope of the proposed program came from similar ethnicity, and has a well-established social norm. Accordingly, there is no risk related to indigenous people for this proposed program

h. Involuntary Resettlement

Resettlement for community who resides in permanently inundated area is issue that had been raised in the past, but put on hold due to local government budget constraint.

During the full proposal development stage it has been agreed with the city stakeholders (including government and community) that resettlement will not be a part of the proposed adaptation actions. Hence there is no risk of involuntary resettlement for the program.

i. Protection of Natural Habitats

As a coastal area, protection of natural habitat is essential to be taken throughout the course of the program. Mangrove, the natural habitat for fish and shell fish, has been the green belt for Pekalongan City shoreline for the past decade, protecting the area to a certain extent from sea-related risk. However, mangrove condition in the area has been degraded in the past years. Risks posed to natural habitats from the implementation of adaptation actions will be among the content of potential impacts outlined in the UKL-UPL and SPPL document of each action

Potential risks:

Minor natural habitat disruption from aquaculture preparation activity, mangrove restoration process, as well as mobilization and construction process of geotube, eco-tourism site and communal sanitation facilities

Requirements and Managements:

- Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are:
  - Individual and communal sanitation facilities (latrine): SPPL document
  - Aquaculture: UKL-UPL document
  - Geotube construction: UKL-UPL document
  - Eco-tourism: UKL-UPL document
- The environmental document will be in coherent with the program's ESMP
- Prepare the necessary environmental management plan for each activity listed in ESMP.

j. Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex 1). *Conservation of Biological Diversity*

Coastal resilience aimed by this proposed program is not only focusing on human resilience, but also considering the corresponding biodiversity.

Potential risks:

- Minor environmental and ecological disruption from the construction of geotube, mangrove belt, eco-tourism site and communal sanitation facilities; and alteration of resource management (introduction of shrimp and fish species to body of water, and introduction of new mangrove species to the environment)
- The targeted mangrove restoration site might be privately owned, and there is a potential that the land-owner reluctant to 'donate' their land for the activity

Requirements and Managements:

- Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are
  - Individual and communal sanitation facilities (latrine): SPPL document
  - Aquaculture: UKL-UPL document. The document content will include the potential impact from the introduction of Bandeng fish to a new environment and how it will interact.
  - Geotube construction: UKL-UPL document
  - Eco-tourism: UKL-UPL document
- The environmental document will be in coherent with the program's ESMP

- Prepare the necessary environmental management plan for each activity listed in ESMP, including the impact from mangrove restoration activity.
- Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex 1). Environmental Management and Monitoring Plan for hard structure construction or activity that potentially create adverse impacts, that does not falls under the category that needs EIA; including for activities that are related to the introduction of foreign and invasive species; how the said species will survive and interact in a new environment (e.g. Vennamei shrimp)
- The program will be ensured as will adhere to applicable laws and regulations on biodiversity conservation, including Ministry of Marine and Fisheries Regulation No. 16 Year 2008 on Management Plan of Coastal Area and Small Islands and other

k. Identification of land-ownership in the targeted mangrove restoration site. Involvement of the private land owners in relevant workshops at village level *Climate Change*
Activities under the proposed program will not significantly contribute to the increase of greenhouse gas emission or other climate change drivers.

l. Pollution Prevention and Resource Efficiency
Activities conducted within the program have the potential to cause pollution if not being managed carefully.

Potential risks:

- Water pollution from the construction and implementation of hard and soft structure construction (coastal embankmentgeotube, eco-tourism site, mangrove belt and sanitation facilities),; implementation of aquaculture farming; existing agriculture and farming practices, alteration of resource management (introduction of shrim and fish species to body of water), and also by by-product from aquaculture farming and alternative livelihood and sanitation facilities' effluent (both floating and non-floating design)

Sedimentation due to accumulation of bandeng/vennamei fish feedstock in aquaculture farm
Requirements and Managements:

- Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are
  - Individual and communal sanitation facilities (latrine): SPPL document
  - Aquaculture: UKL-UPL document
  - Geotube construction: UKL-UPL document
  - Eco-tourism: UKL-UPL document
- The environmental document will be in coherent with the program's ESMP
- Prepare the necessary environmental management plan for each activity listed in ESMP.
- Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex 1).

m. Assessment on a more environmentally friendly aquaculture farming method/practices*Public Health*
There is no risk to public health from the program. The program activities will continually be ensured for not placing community's health and safety in dangerous state by adhering to the relevant applicable laws and regulations.

n. Physical and Cultural Heritage
There is no risk to physical and cultural heritage from the program since there is no physical and cultural heritage located within the geographical scope of the proposed program.

o. *Land and Soil Conservation*

Inundation from coastal flooding in the targeted program area has resulted in adverse impact, transforming productive land into unproductive one. This proposed program aims to reduce the inundated area, preventing them from turning into unproductive land by implementing diverse adaptation measures.

Potential risks:

- Soil pollution the from hard and soft structure construction of geotube, (coastal embankment, eco-tourism site, and sanitation facilities); by product from aquaculture farming and effluent of sanitation facilities that apply non-floating design

Requirements and Managements:

- Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are
  - Individual and communal sanitation facilities (latrine): SPPL document
  - Aquaculture: UKL-UPL document
  - Geotube construction: UKL-UPL document
  - Eco-tourism: UKL-UPL document
  - The environmental document will be coherent with the program's ESMP
- Prepare the necessary environmental management plan for each activity listed in ESMP.

Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex 1)

Table 3. Detailed & Budgeted Processes for ESP & GP Compliance for each USP

No	ESP	Processes		Roles and Responsibilities
		Detailed	Budget	
1	Compliance with the Law	Regular consultation with legal experts/persons	Allocated from capacity building (component 1)	IE and local stakeholders
2	Access and equity	Meetings, FGDs and triangulation among various stakeholders and groups	Allocated from collaboration adaptation actions (component 2) and engagement of private sectors	IE and local stakeholders
3	Marginalized and Vulnerable Groups	Meetings, FGDs and triangulation among various stakeholders and groups	Allocated from collaboration adaptation actions (component 2) and engagement of private sectors	IE and local stakeholders
4	Human Rights	-	-	-
5	Gender Equity and Women's Empowerment	-	-	-
6	Core Labour Rights	-	-	-
7	Indigenous People	-	-	-
8	Involuntary Resettlement	-	-	-
9	Protection of Natural Habitats	Meetings, FGDs and triangulation among various stakeholders and groups as well as experts	Allocated from collaboration adaptation actions (component 2)	IE and local stakeholders
10	Conservation of Biological Diversity	Meetings, FGDs and triangulation among various stakeholders and groups as well as experts	Allocated from collaboration adaptation actions (component 2)	IE and local stakeholders

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11	Climate Change	-	-	-
12	Pollution Prevention and Resource Efficiency	Meetings, FGDs and triangulation among various stakeholders and groups as well as experts	Allocated from collaboration adaptation actions (component 2)	IE and local stakeholders
13	Public Health	-	-	-
14	Physical and Cultural Heritage	-	-	-
15	Land and Soil Conservation	Meetings, FGDs and triangulation among various stakeholders and groups as well as experts	Allocated from collaboration adaptation actions (component 2)	IE and local stakeholders

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1.6.4. Categorization

In view of the above environmental and social impact assessment process, can be seen that the program implementation has several potential risks that are considered as minor, small scale (limited impacts and not widely spread) and easily mitigated. These risks can be avoided by implementing adequate mitigation measures. With regards to Risk Categorization of AF, the program can be categorized as **"Category B"** where it has potential adverse impacts but in small number, small scale, not widespread and easily mitigated.

I.7. ENVIRONMENTAL AND SOCIAL MITIGATION PLAN

1.7.1. Environmental and Social Impact Mitigation Plan

Mitigating measures for the assessed significant potential environmental and social impacts is presented in table 3 below. The measures will be implemented and utilised by the program to mitigate the potential risks and also ensure the compliance of program implementation to AF Environmental and Social Policy. From the beginning of the program period, the stakeholders will be informed on the potential risks associated with the program and the corresponding mitigation measures in place. This Environmental and Social Management Plan document will be communicated to them; not only during the program preparation phase, but also throughout the course of the program, to ensure all parties involved are aware of the risks and the appropriate mitigation measures.

Table 3. Environmental and Social Impact Mitigation Plan

No	ESP	Type of Impacts	Activity	Impacts Description	Mitigation Measures	PIC	Relevant Stakeholders
1	Compliance with the Law	Environmental	Geotube construction	Physical environment disruption from mobilization and construction process	• Prepare and submit the required environmental documents prior to the implementation of adaptation actions, where this environmental document will be in coherent with the program's ESMP • The required environmental documents are: o Individual and communal sanitation facilities (latrine): SPPL document o Aquaculture: UKL-UPL document o Geotube construction: UKL-UPL document o Eco-tourism: UKL-UPL document • Report the implementation and montioring of UKP-UPL to the City's Environmental Agenct in six-monthly basis	Construction company and PMU	NIE, Environmental Agency, Public Works Agency and Local Development Planning Board of Pekalongan City
			Eco-tourism	Physical environment disruption from mobilization and construction process		Tourism Agency, PMU, and local community	
			Reconstruction of individual sanitation facilities	Minor physical environment disruption from mobilization and construction process such as minor damage to road access from construction material		Construction company and PMU	
			Construction of communal sanitation facilities	Minor physical environment disruption from mobilization and construction process such as minor damage to road access from construction material		Construction company and PMU	
2	Access and equity	Social	Implement agreed adaptation action in 8 villages	Social conflict arising from selection of community member that will be the implementer and beneficiaries of adaptation actions and alternative livelihood at village level	• Conduct stakeholders mapping during project planning stage as the basis for determining the appropriate project implementer and beneficiaries, allocating fair roles and responsibilities among stakeholders, and selecting the appropriate activities site location (including knowledge board location) that could benefit wider community • ~~Involving~~ Assign village working groups and city working group (which members ~~are~~ include community representative) to lead ~~in~~ the selection process at village and city level respectively. The beneficiaries' critieria include: affected communities, poor and vulnerable people, farmer groups. Specifically for individual latrine, the beneficiaries will be women-headed households •Coordination between village working group, city working group and financial institution to assess and select the most appropriate beneficiaries for the revolving fund • Select working group member that could really represent the voice and interest of all layers of community and city stakeholder	PMU	Village Working Group
			Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference	Social conflict arising from selection of community member that will be the implementer and beneficiaries of adaptation actions and alternative livelihood at city level		PMU	City Working Group

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3	Marginalized and Vulnerable Groups	Social	Implement agreed adaptation action in 8 villages	Social conflict arising from selection of priority activities site and design at village level which could raise envy from other community member that will not directly exposed to the program	• Conduct social impact assessment and develop the corresponding management plan on potential adaptation actions during prioritization process. This impact assessment and management plan will be in coherent with Program's ESMP • Social impact assessment and management plan for the adaptation options will be integrated under UKL-UPL and SPPL document and will be submitted to the city agency. • Put priority on pro-poor adaptation actions (action that could benefit those who have the least economic adaptive capacity but has a high exposure to climate risk) • Adaptation action design (the site location and structural design) will take account of the needs and suitability for elderly, children groups, and disable groups • Develop visibility materials that outlines background from the selection and communicate the materials to wider community • Involving village working groups (which members are community representative) in the selection process • Select working group member that could really represent the voice and interest of all layers of community and city stakeholder	PMU	Village Working Group	**Formatted:** Font: 7 pt
			Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference	Social conflict arising from selection of priority activities site and design at city level which could raise envy from other community member that will not directly exposed to the program		PMU	City Working Group	
4	Protection of Natural Habitats	Environmental	Vennamei shrimp aquaculture farm	Aquaculture preparation process could disrupt the existing natural habitat	• Develop and submit UKL-UPL document for aquaculture farming activities to obtain environmental permit for its implementation • Activities conducted in the natural habitat area will follow Law 32 Year 2009 on Environmental Protection and Management and its derivative regulations, particularly section on natural habitat protection • Identification of existing aquaculture area and idle aquaculture land (including the land-owner) to ensure that aquaculture farming will only be done in the identified area so that the activities will not open a new area and disrupt the existing natural habitat	Local community and PMU	Cleanliness Agency, Environmental Agency, Public Works Agency, Mairne and Fisheries Agency and Local Development Planning Board of Pekalongan City, Local community	**Formatted:** Font: 7 pt
			Bandeng aquaculture farm	Bandeng farm preparation process could disrupt the existing natural habitat		Local community and PMU		
			Mangrove restoration	Mobilization and planting process of mangrove belt could potentially impact the surrounding ecosystem	• Develop environmental procedure that cover steps under for mangrove restoration activity • Activities conducted in the natural habitat area will follow Law 32 Year 2009 on Environmental Protection and Management and its derivative regulations, particularly section on natural habitat protection	Local community and PMU		

			Construction of communal sanitation facilities	Potential impact to the surrounding ecosystem during construction and operational process of floating sanitation facilities	• Implement impact mitigation measures outline in the SPPL document of the said facilities • Design the floating facilities so that its construction phase will not adversely impact the water body and surrounding ecosystem • Activities conducted in the natural habitat area will follow Law 32 Year 2009 on Environmental Protection and Management and its derivative regulations, particularly section on natural habitat protection • Build temporary sediment and oil trap during facilities construction to prevent sedimentation and inflow of oil-based material to body of water (for floating design)	Construction company and PMU	
			Geotube construction	The impact of geotube mobilization and construction process to the existing surrounding coastal ecosystem	• Implement impact mitigation measures outline in the UKL-UPL document of the said structure • Activities conducted in the natural habitat area will follow Law 32 Year 2009 on Environmental Protection and Management and its derivative regulations, particularly section on natural habitat protection • Build temporary sediment and oil trap during geotube construction process to control abrasion, sedimentation, oil-based material flow to ecosystem	Construction company and PMU	
			Eco-tourism	Waste generation and water pollution from ecotourism site preparation, development and operational activities could pollute the water and subsequently disrupt natural habitat	• Implement impact mitigation measures outline in the UKL-UPL document of the said structure • Develop sound and applicable environmental procedures for day to day operations of the eco-tourism site that comply with local regulation for ecotourism site, including waste management plan • Activities conducted in the natural habitat area will follow Law 32 Year 2009 on Environmental Protection and Management and its derivative regulations, particularly section on natural habitat protection • Build temporary sediment trap during ecotourism site development to control abrasion and sedimentation within mangrove ecosystem	Tourism Agency, Local community and PMU	

5	Conservation of Biological Diversity	Environmental	Vennamei shrimp aquaculture farm	• Minor ecological disruption from introduction of vennamei shrimp to body of water • Minor disruption in benthic community from aquaculture facilities installation and its implementation	• Develop and submit UKL-UPL document for aquaculture farming activities to obtain environmental permit for its implementation • The program will be ensured as will adhere to applicable laws and regulations on biodiversity conservation, including Ministry of Marine and Fisheries Regulation No. 16 Year 2008 on Management Plan of Coastal Area and Small Islands and other • Primary assessment to see how the vennamei shrimp will survive and interact in a new environment, and develop the relevant recommendations based on the assessment result • Assess the impact of vennamei shrimp aquaculture practices to the structure of benthic community, including the impact of the feedstock; and develop recommendations accordingly. This impact and recommendations will be included in the activity's UKL-UPL document. This assessment result will also be utilized to develop operational procedure for the farming practices	Academician, local community and PMU	Marine and Fisheries Agency and Local Development Planning Board of Pekalongan City, Local community	
			Bandeng aquaculture farm	• Minor ecological disruption from introduction of bandeng to body of water • Minor disruption in plankton and benthic community from aquaculture facilities installation and its implementation	• Develop and submit UKL-UPL document for aquaculture farming activities to obtain environmental permit for its implementation • The program will be ensured as will adhere to applicable laws and regulations on biodiversity conservation, including Ministry of Marine and Fisheries Regulation No. 16 Year 2008 on Management Plan of Coastal Area and Small Islands and other • Primary assessment to see how banden will survive and interact in a new environment, and develop the relevant recommendations based on the assessment result • Assess the impact of vennamei shrimp aquaculture practices to the structure of benthic community, including the impact of the feedstock; and develop recommendations accordingly. This impact and recommendations will be included in the activity's UKL-UPL document. This assessment result will also be utilized to develop operational procedure for the farming practices	Academician, local community and PMU		
			Mangrove restoration	Minor environmental and ecological disruption from alteration of resource management from introduction of new mangrove species to the environment	• The program will be ensured as will adhere to applicable laws and regulations on biodiversity conservation, including Ministry of Marine and Fisheries Regulation No. 16 Year 2008 on Management Plan of Coastal Area and Small Islands and other • Primary assessment to see how the new mangrove species will interact in a new environment • Assess the most appropriate location to introduce the new mangrove species	Academician, local community and PMU		

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				Potential social conflict (resistance) with land-owner to allocate their unproductive private land for mangrove restoration site	• Identification of targeted mangrove restoration site that are privately owned and their respective owner • Series of workhsop to build community awareness on the benefit of turning unproductive land into mangrove restoration site by involving the identified land owner	Academician, local community and PMU	
			Construction of communal sanitation facilities	Potential impact to the surrounding ecosystem during construction and operational process of floating sanitation facilities	• Implement impact mitigation measures outline in the UKL-UPL document of the said facilities • Design the floating facilities so that its construction phase will not adversely impact the water body and surrounding ecosystem • Activities conducted in the natural habitat area will follow Law 32 Year 2009 on Environmental Protection and Management and its derivative regulations, particularly section on natural habitat protection • Build temporary sediment and oil trap during facilities construction to prevent sedimentation and inflow of oil-based material to body of water (for floating design)	Construction company and PMU	Environmental Agency, Tourism Agency, Public Works Agency and Local Development Planning Board of Pekalongan City, Local community
			Geotube construction	Ecosystem disruption from mobilization and construction process of geotube	• Implement impact mitigation measures outline in the UKL-UPL document of the said structure • The program will be ensured as will adhere to applicable laws and regulations on biodiversity conservation, including Ministry of Marine and Fisheries Regulation No. 16 Year 2008 on Management Plan of Coastal Area and Small Islands and other • Build temporary sediment and oil trap during geotube construction process to control abrasion, sedimentation, oil-based material flow to ecosystem	Construction company and PMU	
			Eco-tourism	• Waste generation and water pollution from ecotourism site preparation, development and operational activities could disrupt natural habitat and ecosystem balance • Large number of human presence and noise could disturb natural fauna in the area	• Implement impact mitigation measures outline in the UKL-UPL document of the said structure • Develop sound and applicable environmental procedures for day to day operations of the eco-tourism site that comply with local regulation for ecotourism site, including waste management plan • The program will be ensured as will adhere to applicable laws and regulations on biodiversity conservation, including Ministry of Marine and Fisheries Regulation No. 16 Year 2008 on Management Plan of Coastal Area and Small Islands and other • Build temporary sediment trap during ecotourism site development to control abrasion and sedimentation within mangrove ecosystem	Tourism Agency, Local community and PMU	

7	Pollution Prevention and Resource Efficiency	Environmental	Geotube construction	• Water pollution from mobiliization and construction process of geotube • Sedimentation from mobiliization and construction process of geotube	• Implement impact mitigation measures outline in the UKL-UPL document of the said structure • Build temporary sediment and oil trap during geotube construction process to control abrasion, sedimentation, oil-based material flow to ecosystem	Construction company and PMU	Environmental Agency, Public Works Agency and Local Development Planning Board of Pekalongan City
			Mangrove restoration	Increase in water turbidity during mangrove restoration process	• Develop sound environmental procedure that cover steps under for mangrove restoration activity, including temporary waste management plan	Local community and PMU	Marine and Fisheries Agency and Local Development Planning Board of Pekalongan City, Local community
			Vennamei shrimp aquaculture farm	Water pollution from aquaculture farming practices, including: • Potential for overpopulation within the aquaculture farm • By-product from aquaculture farming • Sedimentation (increased concentration of organic matter) due to accumulation of shrimp feed in aquaculture farm • Traditional harvesting method that allows aquaculture water flows into drainage system • Non-existent aeration that allows sedimentation accumulation at the bottom of the pond	• Develop and submit UKL-UPL document for aquaculture farming activities to obtain environmental permit for its implementation • Develop and implement environmental procedures for aquaculture farming activities, including water and waste management plan; in which this procedures are included in the submitted UKL-UPL document • Provide training to the community on this procedure prior to implement the activity • Educate the community on environmentally friendly aquaculture farming method/practices, including efficient use of feed, the quality of feed and proper harvesting and aeration technique • Equipped the farm with small windmill that allow aeration in the pond • Create sediment trap that is suitable for the farm • Develop and implement environmental procedures for aquaculture farming activities, including water and waste management plan • Regular monitoring of surface water quality inside the farm and in drainage system connected to the farm	Local community and PMU	Marine and Fisheries Agency and Local Development Planning Board of Pekalongan City, Local community

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			Bandeng aquaculture farm	Water pollution from aquaculture farming practices, including: • Potential for overpopulation within the aquaculture farm • By-product from aquaculture farming • Sedimentation (increased concentration of organic matter) due to accumulation of fish feed in aquaculture farm • Traditional harvesting method that allows aquaculture water flows into drainage system • Non-existent aeration that allows sedimentation accumulation at the bottom of the pond	• Develop and submit UKL-UPL document for aquaculture farming activities to obtain environmental permit for its implementation • Develop and implement environmental procedures for aquaculture farming activities, including water and waste management plan; in which this procedures are included in the submitted UKL-UPL document • Provide training to the community on this procedure prior to implement the activity • Educate the community on environmentally friendly aquaculture farming method/practices, including efficient use of feed, the quality of feed and proper harvesting and aeration technique • Equipped the farm with small windmill that allow aeration in the pond • Create sediment trap that is suitable for the farm • Regular monitoring of surface water quality inside the farm and in drainage system connected to the farm	Local community and PMU	Marine and Fisheries Agency and Local Development Planning Board of Pekalongan City, Local community
			Eco-tourism	Water pollution due to solid waste generation and effluent from the site's toilet facilities, and other operational activities in the eco-tourism site	• Develop UKL-UPL for ecotourism activities, implement impact mitigation measures outline in the said document, and submit the relevant monitoring report to City Agency every 6 months • Develop sound and applicable environmental procedures that comply with local regulation for ecotourism site, including waste management plan; in which the procedure is an integrated part to the submitted UKL-UPL • Provide training on the environmental procedures to community member that are involved in managing the eco-tourism site Equipped the site with adequate signage regarding environmentally friendly practices in the area • Coordinate with Cleanliness Agency of Pekalongan City in the waste management activities • As a community-based ecotourism, involve the community in the waste management process, including train them to be able to utilize the waste as additional income; either by creating added value to the waste (compost, recycling) from the waste or collect waste that has monetary value (plastic, paper, metal)	Local community, Tourism Agency and PMU	Environmental Agency, Cleanliness Agency, and Local Development Planning Board of Pekalongan City, Local community

			Reconstruction of individual sanitation facilities	Ground water or sea water pollution from construction process of the facilities, effluent from sanitation facilities (during its operational phase), and potential leakage from the facilities	• Submit SPPL document for individual sanitation facilities to obtain environmental permit for its implementation • Design the sanitation facilities in accordance with SNI 03-2398-2002 and SNI 03-2399-2002 • Rigorous assessment on the most appropriate sanitation facilities for the area's characteristics (including geographical and soil characteristics), to minimize potential risks of pollution • Regular water quality monitoring on the body of water where the sanitation facilities effluent is being conveyed • Together with the community develop utilization and maintenance procedure for the facilities, where the said procedures will be undertaken by them • Educate the community on good sanitation behaviour	Local community and PMU	Environmental Agency and Local Development Planning Board of Pekalongan City, Local community
			Construction of communal sanitation facilities	Ground water or sea water pollution from construction process of the facilities, effluent from sanitation facilities (during its operational phase), and potential leakage from the facilities	• Submit SPPL document for communal sanitation facilities to obtain environmental permit for its implementation • Design the sanitation facilities in accordance with SNI 03-2398-2002 and SNI 03-2399-2002 • Rigorous assessment on the most appropriate sanitation facilities for the area's characteristics (including geographical and soil characteristics), to minimize potential risks of pollution • Regular water quality monitoring on the body of water where the sanitation facilities effluent is being conveyed • Together with the community develop utilization and maintenance procedure for the facilities, where the said procedures will be undertaken by them • Educate the community on good sanitation behaviour	Local community and PMU	Environmental Agency and Local Development Planning Board of Pekalongan City, Local community
11	Land and Soil Conservation	Environmental	Geotube construction	Soil pollution from solid waste, oil-based waste and waste water during mobilization and construction process of geotube	• Develop and submit UKL-UPL document for geotube construction to obtain environmental permit for its implementation, and subsequently implement impact mitigation measures outline in the said document • Build temporary sediment and oil trap during coastal embankment construction process, to control oil infiltration to the soil layer, and also to prevent abrasion and sedimentation	Construction company and PMU	Environmental Agency, Public Works Agency and Local Development Planning Board of Pekalongan City

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			Eco-tourism	Soil pollution from waste generation and waste water contamination during operational activities in the eco-tourism site	• Develop and submit UKL-UPL for ecotourism activities and implement impact mitigation measures outline in the said document • Submit monitoring report of UKL-UPL to the City Agency every 6 months • Develop sound and applicable environmental procedures that comply with local regulation for ecotourism site, including waste management plan; in which the procedure is an integrated part to the submitted UKL-UPL • Provide training on the environmental procedures to community member that are involved in managing the eco-tourism site • Equipped the site with adequate signage regarding environmentally friendly practices in the area • Coordinate with Cleanliness Agency of Pekalongan City in the waste management activities • As a community-based ecotourism, involve the community in the waste management process, including train them to be able to utilize the waste as additional income; either by creating added value to the waste (compost, recycling) from the waste or collect waste that has monetary value (plastic, paper, metal)	Local community, Tourism Agency and PMU	Environmental Agency, Tourism Agency, and Local Development Planning Board of Pekalongan City, Local community
			Reconstruction of individual sanitation facilities	Soil pollution from construction process of the facilities and potential soil contamination from effluent of sanitation facilities (during its operational phase), and potential leakage from the facilities	• Submit SPPL document for individual sanitation facilities to obtain environmental permit for its implementation • Design the sanitation facilities in accordance with SNI 03-2398-2002 and SNI 03-2399-2002 • Rigorous assessment on the most appropriate sanitation facilities for the area's characteristics (including geographical and soil characteristics), to minimize potential risks of pollution • Regular water quality monitoring on the body of water (including community's ground water source and sea water) where the sanitation facilities effluent is being conveyed • Together with the community develop utilization and maintenance procedure for the facilities, where the said procedures will be undertaken by them • Water tight construction for the non-floating sanitation facilities (particularly the waste water management installation) to minimize potential leakage to the soil	Construction company and PMU	Environmental Agency, Public Works Agency, and Local Development Planning Board of Pekalongan City, Local community

			Construction of communal sanitation facilities	Soil pollution from construction process of the facilities and potential soil contamination from effluent of sanitation facilities (during its operational phase), and potential leakage from the facilities (if the facilities are not floating design)	• Submit SPPL document for communal sanitation facilities to obtain environmental permit for its implementation • Design the sanitation facilities in accordance with SNI 03-2398-2002 and SNI 03-2399-2002 • Develop Environmental Management and Monitoring Plan for coastal sanitation facilities' construction process • Together with the community develop utilization and maintenance procedure for the facilities, where the said procedures will be undertaken by them • Rigorous assessment on the most appropriate sanitation facilities for the area's characteristics (including geographical and soil characteristics), to minimize potential risks of pollution • Regular water quality monitoring on the body of water (including community's ground water source and sea water) where the sanitation facilities effluent is being conveyed • Water tight construction for the sanitation facilities (particularly the waste water management installation) to minimize potential leakage to the soil • Educate the community on good sanitation behaviour	Construction company and PMU	Environmental Agency, Public Works Agency, and Local Development Planning Board of Pekalongan City, Local community

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1.7.2. Grievance Mechanism Guidance

As part of the program implementation, the PMU will also set up grievance mechanism for the stakeholders involved. This mechanism is needed to ensure the program always in line with AF's ESP that promote environmental and social safeguard and also ensure that it always in line with community's interest and met their expectations. Steps that will be taken for setting up the mechanism are as follow:

- Initial orientation for the PMU will include materials on ESMP and grievance mechanism so that the staff will understand their roles and responsibilities on this matter
- Assign -team of staff that comprises of M&E learning officer and village facilitators that will be responsible for receiving and processing the grievance
- Develop procedures for accepting/logged-in grievance, grievance assessment process, providing feedback for the grievance, and monitoring the feedbacks
- Create internal communication procedures for the mechanism
- Communicating the ESMP and grievance mechanism at the beginning of program implementation to the stakeholders

The grievance mechanism procedure that will be set up will follow these following general guidelines:

- *Logged-in Grievance*
  Stakeholder should formally communicate grievance in a written manner, and sent it to the assigned team through email, fax or hand-delivered and submit the text to grievance box that will be set up at the PMU office. Once it's being logged, the particular stakeholder will receive receipt (by email, fax or printed receipt; depending on how the stakeholder submit the grievance text) that acknowledging the complaint is being accepted and will be processed. A specific email for grievance submission will be set up in the beginning of the program period. For complainant that hand-deliver the text to PMU office, the assigned team will document their phone number. In doing so, the complainant can be informed by the team when the grievance assessment is completed.
- *Grievance Assessment*
  Once the complaint is logged-in and recorded, an assessment process will be done by the assigned team by considering the complainants, raised issues and mitigation measures in place. Having considered those aspects, the team will then rate the grievance on a scale 1-5, where rate 1 considered the grievance as low impact/negligible and 5 as critical to be addressed. The next step will be exploring options to address the grievance; assessing whether the measures in place is adequate to address the issue or further actions are need to be taken. Throughout the process, project officer and team leader will be continually updated and consulted if needed; particularly when the grievance rating is above 3.
- *Providing and Communicating Feedback*
  Once the option is selected, the team will prepare a response for the grievance and communicate the response formally in written text to the complainant by email, fax or inform the complainant by phone.
- *Monitoring Feedback*

To ensure the feedback is well received by the complainant or to maintain in case there will be follow up response, the responsible staff will continually monitor the grievance cases logged-in, its feedback and how it being dealt in practise.

The aforementioned procedures will be communicated to all stakeholders during initial workshops at city and village level, and also continually during any training or workshop conducted by PMU. The printed procedures will be made available at village office and PMU office to ensure stakeholders that are unable to attend the initial workshop understand the grievance mechanism of the program. This step is taken to show that the program tries its best to provide benefit for the wider community by always taking into account their interest and concerns in program implementation.

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I.8. MONITORING AND EVALUATION ARRANGEMENT

1.8.1. Monitoring and Evaluation Plan

Monitoring and evaluation process for the environmental and social impact will be an integral part of program's monitoring and evaluation process. For activities that categorized as need to undergone EIA process in future time, an individual monitoring and evaluation plan will be made accordingly.

Specific aspects to be monitored in relation to the environmental and social impacts are presented in table 4. This table does not provide a specific monitoring and evaluation, but only the general guidance. A more detailed monitoring and evaluation plan for the whole program will be developed during the development process of project implementation plan, in which the content of Table 4 and its detailed derivation will be an inseparable part of the said monitoring and evaluation plan.

IE will work with executing entities to implement the ESMP through iterative, interactive and triangulated processes. Every action plan and implementation will be evaluated through the triangulated processes, ensuring the transparency and good-governance principals. External / Independent evaluator(s) will be involved in the process ensuring that the collaboration between IE and EE is within the scope of the project towards the short, medium and long term objectives.

Table 4. Monitoring and Evaluation Plan

No	ESP	Type of Impacts	Activity	Impacts Description	Aspects to be Monitored	Indicator	Means of Verification	Monitoring period	PIC
1	Compliance with the Law	Environmental	Geotube construction	Physical environment disrruption from mobilization and construction process	Issuance of environmental permit for implementation of adaptation action	Number of Issued Environmental Permit	SPPL document for sanitation facilities UKL-UPL document for geoutube construction and ecotourism site	Once Once	Construction company and PMU
			Eco-tourism	Physical environment disrruption from mobilization and construction process			Document submission and approval report Monitoring report for geotube and ecotourism site	Once Six-monthly	Construction Company, Tourism Agency and PMU
			Reconstruction of individual sanitation facilities	Minor physical environment disruption from mobilization and construction process such as minor damage to road access from construction material		Number of monitoring report for geoutube and eco-tourism site			Construction company and PMU PMU
			Construction of communal sanitation facilities	Minor physical environment disruption from mobilization and construction process such as minor damage to road access from construction material					
2	Access and equity	Social	Implement agreed adaptation action in 8 villages	Social conflict arising from selection of community member that will be the implementer of adaptation actions and alternative livelihood at village level	• Ensure the selection of appropriate project implementer and site location, fair allocation of roles and responsibilities • Ensure that working group	Background of working group member % of women representative in working group	Record of representation of working group member Minutes of meetings for working groups meetings	Once Every three months	PMU Working Group and PMU

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			Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference	Social conflict arising from selection of community member that will be the implementer of adaptation actions and alternative livelihood at city level	member represent the voice and interest of all layers of community and city stakeholder	% of women representative attendace in working group meeting Number of stakeholder mapping document	Documentation of stakeholders mapping process and results	Once	Working Group and PMU
3	Marginalized and Vulnerable Groups	Social	Implement agreed adaptation action in 8 villages	Social conflict arising from selection of priority activities site and design at village level which could raise envy from other community member that will not directly exposed to the program	• The development of social impact assessment and management plan • Communication of project selection process through visibiity materials • Ensure that working group member represent the voice and interest of all layers of community and city stakeholder	Number of Social Impact Assessment and Management Plan Background of working group member Number of input on technical details and site selection for the adaptation actions Number of produced visibility materials Number of people received the visibility materials	Availability of Social impact assessment and management plan document Record of representation of working group member Minutes of meetings of working group meetings Visibility materials and its dissemination records	Once Once Every three months Every six months	PMU Working Group and PMU Working Group and PMU Working Group and PMU
			Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference	Social conflict arising from selection of priority activities site and design at city level which could raise envy from other community member that will not directly exposed to the program					
4	Protection of Natural Habitats	Environmental	Vennamei shrimp aquaculture farm	Aquaculture preparation process could disrupt the existing natural habitat	• Issuance of environmental permit for implementation of adaptation action	Number of Issued Environmental Permit	UKL-UPL document for aquaculture farm Document submission and approval report	Once	Local community and PMU

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			Bandeng aquaculture farm	Bandeng farm preparation process could disrupt the existing natural habitat	• Aquaculture site location	Number of potential aquaculture site location	Map of potential aquaculture site location	Once	Local community and PMU
			Mangrove restoration	Mobilization and planting process of mangrove belt could potentially impact the surrounding ecosystem	The availability of environmental procedure for mangrove restoration activity	Number of environmental procedure for mangrove restoration activity	Environmental procedure for mangrove restoration activity	Once	PMU
			Construction of communal sanitation facilities	Potential impact to the surrounding ecosystem during construction and operational process of floating sanitation facilities	Availability of SPPL document Availability of sediment and oil trap facilities	Number of SPPL document Number of operating sediment and oil trap facilities during construction phase	SPPL document Documentation of sediment trap and oil trap construction and operations	Once Once	Construction company and PMU
			Geotube construction	The impact of geotube mobilization and construction process to the existing surrounding coastal ecosystem	Availability of UKL-UPL document that outline mitigation measures for potential risks associated with the activity Sediment trap and oil trap construction to control abrasion and sedimentation within mangrove ecosystem	Number of UKL-UPL document Number of operating sediment and oil trap facilities during construction phase	UKL-UPL document Documentation of sediment trap construction and operations	Once Once	Construction company and PMU
			Eco-tourism	Waste generation and water pollution from ecotourism site preparation,	• Sediment trap construction to control abrasion and sedimentation	Number of UKL-UPL document	UKL-UPL document Documentation of	Once	Cleanliness Agency, Local

				development and operational activities could pollute the water and subsequently disrupt natural habitat	within mangrove ecosystem • Availability of environmental procedures that comply with local regulation for ecotourism site, including waste management plan	Number of operating sediment and oil trap facilities during construction phase Number of environmental procedures for eco-tourism site operations Number of UKL-UPL monitoring report	sediment trap construction and operations Environmental procedures (including waste management plan) for eco-tourism site Monitoring report of UKL-UPL document	Once Once Six-monthly	community and PMU Cleanliness Agency, Local community and PMU
5	Conservation of Biological Diversity	Environmental	Vennamei shrimp aquaculture farm	• Minor ecological disruption from introduction of vennamei shrimp to body of water • Minor disruption in benthic community from aquaculture facilities installation and its implementation	• Ensure that the new marine and fisheries species will fit in the new environment • Ensure that the community understand on how to properly start the aquaculture activitiy in a new land • The availability of UKL-UPL document	Number of Issued Environmental Permit Number of assessment document on species interaction in aquaculture farm, and its relevant impacts Number of workshops on aquacuture livelihood	UKL-UPL document for aquaculture farm Document submission and approval report Assessment on potential interaction of new marine species in the new prepared environment Record of workshops with aquaculture material	Once Once Once Every six months	PMU PMU Academician Working group and PMU
			Bandeng aquaculture farm	• Minor ecological disruption from introduction of bandeng to body of water • Minor disruption in plankton and benthic community from aquaculture facilities installation and its implementation					
			Mangrove restoration	Minor environmental and ecological disruption from alteration of resource management from introduction of new	• The availability of environmental procedures for mangrove restoration actiity that outline mitigation	Number of environmental procedure for mangrove restoration activity	Environmental procedure for mangrove restoration activity	Once	Academician, working group and PMU

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				mangrove species to the environment	measures for potential risks associated with the activity • Ensure that the proposed mangrove species is appropriate for the location	Number of assessment on appropriateness of the proposed mangrove species for mangrove belt planting activity in the proposed location	Assessment on appropriateness of the proposed mangrove species for mangrove belt planting activity in the proposed location	Once	
				Potential social conflict (resistance) with land-owner to allocate their unproductive private land for mangrove restoration site	• Targeted mangrove restoration site and information on land ownerhisp of the targeted site • Attendance and response from the landowner during related village workshops	Number of map Number of land-owner attending the workshops	• Map of mangrove restoration site with information on the ownership of the land • Attendance sheet and minutes of meetings during related village workshops	Once Every three months	PMU and academician PMU and working group
			Construction of communal sanitation facilities	Potential impact to the surrounding ecosystem during construction and operational process of floating sanitation facilities	Availability of SPPL document Availability of sediment and oil trap facilities Design of floating sanitaiton facilities	Number of SPPL document Number of operating sediment and oil trap facilities during construction phase Availiability of document on floating facilities design	SPPL document Documentation of sediment trap and oil trap construction and operations Document on floating facilities design	Once Once Once	Construction company and PMU

			Geotube construction	Ecosystem disruption from mobilization and construction process of geotube	Availability of UKL-UPL document that outline mitigation measures for potential risks associated with the activity Sediment trap and oil trap construction to control abrasion and sedimentation within mangrove ecosystem	Number of UKL-UPL document Number of operating sediment and oil trap facilities during construction phase	UKL-UPL document Documentation of sediment trap construction and operations	Once Once	Construction company and PMU
			Eco-tourism	• Waste generation and water pollution from ecotourism site preparation, development and operational activities could disrupt natural habitat and ecosystem balance • Large number of human presence and noise could disturb natural fauna in the area	Availability of UKL-UPL document that outline mitigation measures for potential risks associated with the activity Sediment trap construction to control abrasion and sedimentation within mangrove ecosystem Availability of environmental procedures that comply with local regulation for ecotourism site, including waste management plan	Number of UKL-UPL document Number of operating sediment and oil trap facilities during construction phase Number of environmental procedures for eco-tourism site operations Number of UKL-UPL monitoring report	UKL-UPL document Documentation of sediment trap construction and operations Environmental procedures (including waste management plan) for eco-tourism site Monitoring report of UKL-UPL document	Once Once Once Six-monthly	Cleanliness Agency, Local community and PMU

7	Pollution Prevention and Resource Efficiency	Environmental	Geotube construction	• Water pollution from mobiliization and construction process of geotube • Sedimentation from mobiliization and construction process of geotube	Availability of UKL-UPL document that outline mitigation measures for potential risks associated with the activity and its monitoring report Sediment trap and oil trap construction to control abrasion and sedimentation within mangrove ecosystem	Number of UKL-UPL document Number of operating sediment and oil trap facilities during construction phase Number of UKL-UPL monitoring report for geotube	UKL-UPL document Documentation of sediment trap construction and operations Monitoring document and submission report to the City Government	Once Once Every six months	Construction company and PMU Environmental Agency, Construction Company and PMU
			Mangrove restoration	Increase in water turbidity during mangrove restoration process	• The availability of environmental procedures for mangrove restoration actiity that outline mitigation measures for potential risks associated with the activity	Number of environmental procedure for mangrove restoration activity	Environmental procedure for mangrove restoration activity	Once	Academician, working group and PMU
			Vennamei shrimp aquaculture farm	Water pollution from aquaculture farming practices, including: • Potential for overpopulation within the aquaculture farm • By-product from aquaculture farming • Sedimentation (increased concentration of organic matter) due to accumulation of shrimp feed in aquaculture farm • Traditional harvesting method that allows aquaculture water flows into drainage system	• Application of environmentally friendly aquaculture farming activities • Maintain surface water quality in the surrounding area of the farm	Number of workshops on environmentally friendly aquaculture farming practices Availability of water and waste management plan for aquaculture farming Number of monitoring report for aquaculture UKL-UPL	Record of workshops on environmentally friendly aquaculture farming practices Water and waste management plan for aquaculture farming UKL-UPL monitoring document and submission report to the CIty Government Record on regular	Once Once Every six months	Local community and PMU PMU PMU

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				• Non-existent aeration that allows sedimentation accumulation at the bottom of the pond		Number of surface water quality monitoring report	surface water quality monitoring (ground water and sea water)	Every six months	PMU
			Bandeng aquaculture farm	Water pollution from aquaculture farming practices, including: • Potential for overpopulation within the aquaculture farm • By-product from aquaculture farming • Sedimentation (increased concentration of organic matter) due to accumulation of fish feed in aquaculture farm • Traditional harvesting method that allows aquaculture water flows into drainage system • Non-existent aeration that allows sedimentation accumulation at the bottom of the pond					
			Eco-tourism	Water pollution due to solid waste generation and effluent from the site's toilet facilities, and other operational	Availability of UKL-UPL document that outline mitigation measures for potential risks	Number of UKL-UPL document Number of operating	UKL-UPL document Documentation of sediment trap construction and	Once Once	Cleanliness Agency, Local community and PMU

				activities in the eco-tourism site	associated with the activity Sediment trap construction to control abrasion and sedimentation within mangrove ecosystem Availability of environmental procedures that comply with local regulation for ecotourism site, including waste management plan, and immplemented by the involved community Waste management activity in ecotourism site that involves local agency and local community	sediment and oil trap facilities during construction phase Number of environmental procedures for eco-tourism site operations Number of community member involved in the ecotourism management being trained for environmental proceures Number of UKL-UPL monitoring report Number of community member involved in waste management activity	operations Environmental procedures (including waste management plan) for eco-tourism site Monitoring report of UKL-UPL document Community-based waste managememt activity implemented in the surrounding ecotourism area	Once Six-monthly Six-monthly Six-monthly	Working Group and PMU Working Group, Local community and PMU PMU Working Group, Local community and PMU

			Reconstructio n of individual sanitation facilities	Ground water or sea water pollution from construction process of the facilities, effluent from sanitation facilities (during its operational phase), and potential leakage from the facilities	Availability of SPPL document Availability of sediment and oil trap facilities Design of sanitaiton facilities Water quality of the surrounding area Community implement good sanitation behaviour	Number of SPPL document Number of operating sediment and oil trap facilities during construction phase Availiability of document on floating facilities design Number of surface water quality monitoring report Number of trainings and visibility materials on good sanitation behaviour	SPPL document Documentation of sediment trap and oil trap construction and operations Document on floating facilities design Record on regular surface water quality monitoring (ground water and sea water) Records of trainings with training material that contain good sanitation behaviour aspect Documentation of visibility materials on good sanitation behaviour	Once Once Once Every six months Every three months Every six months	Construction company and PMU PMU Working group and PMU Working group and PMU
			Construction of communal sanitation facilities	Ground water or sea water pollution from construction process of the facilities, effluent from sanitation facilities (during its operational phase), and potential leakage from the facilities	Availability of SPPL document Availability of sediment and oil trap facilities Design of floating sanitaiton facilities Water quality of the surrounding area Facilities properly utilized and maintained by the community	Number of SPPL document Number of operating sediment and oil trap facilities during construction phase Availiability of document on floating facilities	SPPL document Documentation of sediment trap and oil trap construction and operations Document on floating facilities design Record on regular	Once Once Once	Construction company and PMU

					Community implement good sanitation behaviour	design Number of surface water quality monitoring report Number of utilization and maintenance procedure for the facitlies Number of trainings and visibility materials on good sanitation behaviour	surface water quality monitoring (ground water and sea water) Availability of utilization and maintenance procedure Records of trainings with training material that contain good sanitation behaviour aspect Documentation of visibility materials on good sanitation behaviour	Every six months Once Every three months Every six months	PMU Working group and PMU Working group and PMU Working group and PMU
11	Land and Soil Conservation	Environmental	Geotube construction	Soil pollution from solid waste, oil-based waste and waste water during mobilization and construction process of geotube	Availability of UKL-UPL document that outline mitigation measures for potential risks associated with the activity and its monitoring report Sediment trap and oil trap construction to control abrasion and sedimentation within mangrove ecosystem	Number of UKL-UPL document Number of operating sediment and oil trap facilities during construction phase Number of UKL-UPL monitoring report for geotube	UKL-UPL document Documentation of sediment trap construction and operations Monitoring document and submission report to the City Government	Once Once Every six months	Construction company and PMU Environmental Agency, Construction Company and PMU
			Eco-tourism	Soil pollution from waste generation and waste water contamination during	Availability of UKL-UPL document that outline mitigation measures for potential risks associated with the	Number of UKL-UPL document Number of operating sediment and	UKL-UPL document Documentation of sediment trap construction and operations	Once Once	Cleanliness Agency, Local community and PMU

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				operational activities in the eco-tourism site	activity Sediment trap construction to control abrasion and sedimentation within mangrove ecosystem Availability of environmental procedures that comply with local regulation for ecotourism site, including waste management plan, and immplemented by the involved community Waste management activity in ecotourism site that involves local agency and local community	oil trap facilities during construction phase Number of environmental procedures for eco-tourism site operations Number of community member involved in the ecotourism management being trained for environmental proceures Number of UKL-UPL monitoring report Number of community member involved in waste management activity	Environmental procedures (including waste management plan) for eco-tourism site Monitoring report of UKL-UPL document Community-based waste managememt activity implemented in the surrounding ecotourism area	Once Six-monthly Six-monthly	Working Group and PMU PMU Working Group, Local Community and PMU

			Reconstruction of individual sanitation facilities	Soil pollution from construction process of the facilities and potential soil contamination from effluent of sanitation facilities (during its operational phase), and potential leakage from the facilities	Availability of SPPL document Availability of sediment and oil trap facilities Water tight design of sanitaiton facilities Water quality of the surrounding area Community implement good sanitation behaviour	Number of SPPL document Number of operating sediment and oil trap facilities during construction phase Availiability of document on facilities design Number of surface water quality monitoring report Number of trainings and visibility materials on good sanitation behaviour	SPPL document Documentation of sediment trap and oil trap construction and operations Document on facilities design Record on regular surface water quality monitoring (ground water and sea water) Records of trainings with training material that contain good sanitation behaviour aspect Documentation of visibility materials on good sanitation behaviour	Once Once Once Every six months Every three months Every six months	Construction company and PMU PMU PMU Working group and PMU Working group and PMU
			Construction of communal sanitation facilities	Soil pollution from construction process of the facilities and potential soil contamination from effluent of sanitation facilities (during its operational phase), and potential leakage from the facilities (if the facilities are not floating design)	Availability of SPPL document Availability of sediment and oil trap facilities Water tight design of sanitaiton facilities Water quality of the surrounding area Community implement good	Number of SPPL document Number of operating sediment and oil trap facilities during construction phase Availiability of document on facilities design	SPPL document Documentation of sediment trap and oil trap construction and operations Document on facilities design Record on regular surface water quality	Once Once Once Every six months	Construction company and PMU PMU PMU

					sanitation behaviour	Number of surface water quality monitoring report Number of trainings and visibility materials on good sanitation behaviour	monitoring (ground water and sea water) Records of trainings with training material that contain good sanitation behaviour aspect Documentation of visibility materials on good sanitation behaviour	Every three months Every six months	Working group and PMU Working group and PMU

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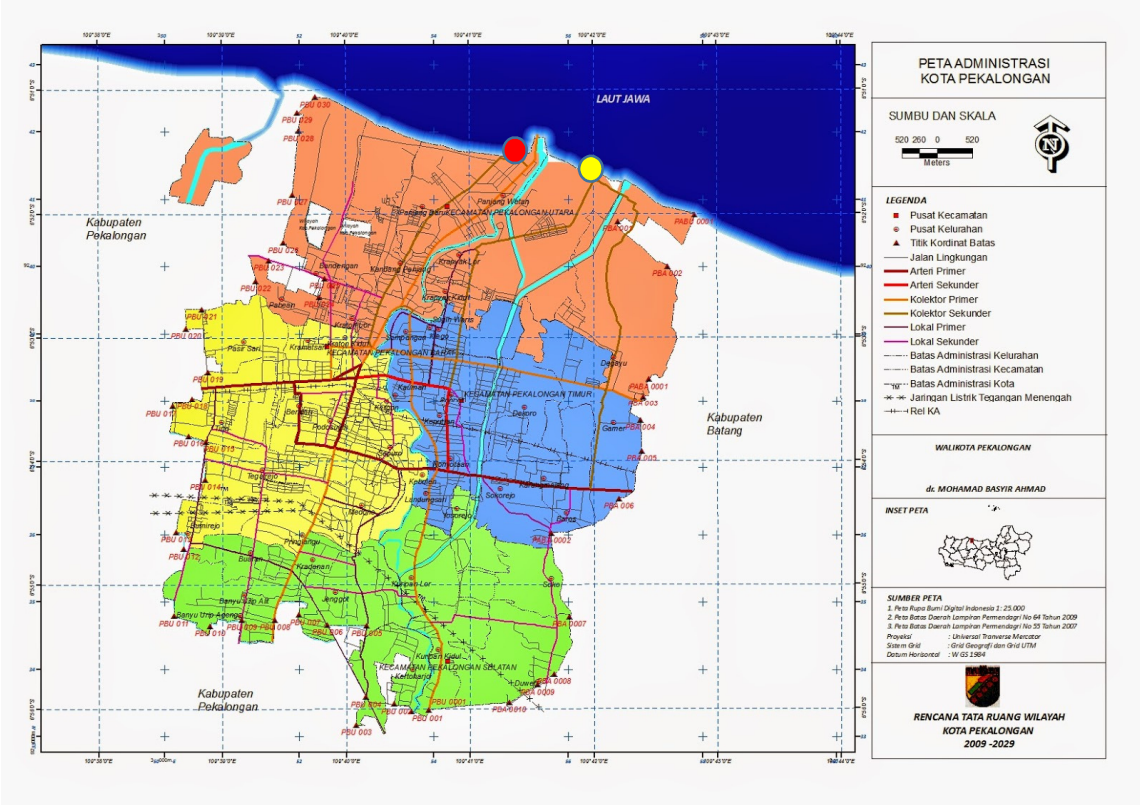
ANNEX 2

Map of Eco-tourism Sites in Pekalongan

The map below is the tourism map of the City of Pekalongan. The eco-tourism sites explained in the proposal is indicated below on the northern tip of the city, which are Pantai Pasir Kencana in Panjang Baru Village and Pantai Slamaran Indah in Degayu Village.

Projected on the below administrative map of Pekalongan City, both eco-tourism sites are indicated in with red circle for Panjang Baru Village and yellow circle for Degayu Village



ANNEX 3

Gender FGD

WOMEN AFFECTED BY CLIMATE CHANGE

In terms of

DEVELOPMENT OF PROPOSAL

"BUILDING COASTAL CITY RESILIENCE TO CLIMATE CHANGE IMPACTS AND NATURAL DISASTERS IN PEKALONGAN CITY, CENTRAL JAVA PROVINCE"

KALIJAGA ROOM, SECRETARIAT OF THE CITY OF PEKALONGAN
29 APRIL 2018

1. **Introduction**
   - The City Government of Pekalongan is in the process of building a dyke equipped with pumping system. This pumping system will certainly results in high operational costs.
2. **Short brief by the Consultant**
   - Brief information on, lessons learnt from Semarang City, and the current condition of Pekalongan City's coastal area.
3. **Women's Daily Activities**
   i. NING from Kandang Panjang Village
      - Everyday starts at 4:30 in the morning. In case of rob flood, house cleaning si the first priority before departing for work. In case of no flood, Ning takes her morning walk,
      - Besides working as teacher, Ning also active as the Chairman of Dharma Wanita (Women Civil Service Association), treasurer at the National Teacher Associaton of North Pekalongan and also the manager of the school cafeteria,
      - While rob flooding, the residence area she lives in is inundated and being the women community leader in her neighborhood, Ning will be the first contacted by her neighbors in emergency cases,
      - High pressure because of the flooded house and many activities to support the neighboring community,
      - Often Ning has to clean up the house after work, and often rob flood return before even finish cleaning the house, stretching the activity until evening

(around 8 – 9 pm). Afterwards, Ning can take a break or do other domestic stuff. Bedtime usually between midnight to 12:30 am,
    - Ning is still thankful that the flooding has not ruined her household equipments and her other private properties,
    - Ning hopes for the existing dyke to be elevated on the west part of where she and her family lives. This would prevent inundation of the residence area. In some parts, water needs to be pumped out.
    - The pump was broken during the last rob flood. The community came up with self initiative to collect money (IDR 3 million) to replace the pump,
    - This morning Ning came to this FGD wearing rubber boots to be able to walk through water puddle.

ii. NURUL from Pasir Kraton Kramat Village
    - Wakes up at 2:30 everyday. Nurul's husband sells tempe (soya cake), so Ning has to help her husband to prepare the tempe and to do the laundry. Between 6 – 9 am Nurul boils the soya beans and afterwards, if no other activity outide the house, Nurul prepare plastic wrap for the tempe and continues with cooking for the family. After a short break, at around 3 pm Nurul starts again to make the tempe until dusk. Then Nurul goes to the mosque and returns to prepare platic wrap for the tempe and assists her children with homeworks,
    - Nurul is also active helping at the community health centre and administrator of local Community Empowerment Group (LPM),
    - During massive rob flood, Nurul often left her sleep to keep her family's properties save.

iii. ROSIANA from Bandengan Village
    - Lives in flooded residence area,
    - Wakes up before dawn to cook and clean up the house,
    - Currently, her house floor is being elevated to avoid water penetrating in, but the front yard is still inundated,
    - Rosiana is active as the Election Chairman for the Village Bandengan, Chairman of a Forum for Healthy Family, also active in LPM, Family Welfare Development forum (PKK) and Community Health Center,
    - Emergency support from the Government has been frequently addressed, but once officials arrive in the morning, the flood was mostly receded, since flood come mostly during the night,
    - Bedtime at 11 pm usually.

iv. AZIZAH from Bandengan Village
    - Often has to mop up the floor after waking up in the morning. During rob flood the week before, Azizah had to sleep with her feet in water, since she had to put household stuff on the bed inside one bedroom and let one bedroom for her children,
    - Children need to be prioritize during rob flood, so she and her husband slept on the couche and left the remaining bed for the children during rob flood.

v. ZUBAEDAH from Tirto Village
   - Housewife, working mostly in the household including cleaning up the house,
   - Heading the Community in her neighborhood, assisting them in terms of organizing birth certificate, family registration etc.
   - Active in PKK and Community Health Center and heading a representive of a political party in the village,
   - Dealing with rob flood since 2014 subsequently. The rob flood in this week in her area reached up to her knee and penetrating the house. Water inundation remains until today developing moss growth in some parts,
   - Being community leader in her neighborhood, neighbors often protesting the condition of flood. She has reported to the City Government but no concrete measure has been taken,
   - Zubaedah hopes the government to elevate roads and river banks,
   - Sand bags filled with earth have been installed at the river, funded by the community, but water still runoff the installation,
   - Support came usually from the related government office or from local parliament representative,
   - Bedtime regularly between 9 and 10pm if there is no other activities.

vi. MIMIN from Degayu Village
   - Hopes for better condition in Degayu Village in comparison with other area severly affected by rob flood,
   - The main problem in Degayu is flooding after long rain, especially in the area of Celumprit caused by runoff from Gamer and Setono Villages in the Sub-District of East Pekalongan,
   - Celumprit River became narrow and shallow caused by massive sedimentation and no dredging activity so far. There is also no possibility to utilize heavy equipment for dredging based on the narrow access to the river bank,
   - Common practices is to build houses up to river edge, so there is no river border. Dredging also deemed to endanger the foundation of those houses,
   - Organizing manual dredging by the community is also difficult based on lack of awareness, although community is aware not to throw waste into the river,
   - In Degayu Village, rob flood has run over paddy fields but not to residence areas yet,
   - Mimin used to wake up at 2 or 2:30 am, jogs after dawn and then prepare for her children and husband, respectively before school and work,
   - Mimn also works at the Village Administrative Office in Degayu (she lives near to the office) and carry on domestic activities after work,
   - Even though not as affected as other areas, Degayu is in alert condition, so it needs to be anticipated,
   - Degayu was never flooded before but after the develoomen of river crossing of Setono River in early 2000, Degayu started flooding during rainy season.

vii. KAYISAH from Pasir Kraton Kramat Village

- Rob flood in Pabean Village started in 2010 and appeared continuously since 2012. Community Based Environmental Management Progam was then introduced in 2015 focusing on drainage, in which the drainage system in the village was improve to reduce the impact of the flood. This improve the situation for a year, but after that the flood was even higher than the drainage so the improvement did not sustain,
- Elevation of road was done in 2015 within NUSP program, but now it is flooded,
- Thera has been an initiative in Pabean to build "village belt" (1.5 m paving) equipped with a large pump, but this was also ineffective,
- Community even have to lend money to elevate their house floor, since it is costly. Piling the floor with stone sand cost up to over IDR 4,2 million for one house. Community use to pay in credit, but the problem is that the flood keeps coming and the debt was not paid off,
- The floor of most houses have been elevated many times.

viii. Constraints/challenges for involvement in the program:
- Community meetings mostly arranged in the evening, but it is difficult for most women to attend, since they need to take care of their children,
- Inputs and suggestions were always noted, but the realization is based on priority (severely affected areas are prioritized). Common demands are eleveation of roads, rarely for improvement of drainage. The problem is that if the roads aer elevated but the drainage not improve, water still cannot runoff from inundated areas,
- NUSP fund is targeted for slum areas, but the realization did not meet the correct target, despite of the large sum of the funds. Merged villages receive the same amount as other, although they have larger administrative areas and different level of impact. Limited available budget with high demand for improvement,

ix. Mr. Suko from Panjang Baru Village
- The existing pumps are ineffective to completely avoid flooding in Panjang Baru (111 Ha)
- Geographically, Panjang Baru lies in a basin leading to inundation during rob flood. But even it is pumped out, no one knows where to with the pumped water. There is no point of draining it to neighboring village, since it is flooded as well. At the end, Panjang Baru waits until the flood recede,
- Limited funds is also challenging. Improvement can only be carried out gradually, while community asked for quick respond. Increase of village's budget is desired,
- Elevaton of road but community houses remain on the same height,
- Suggestions have been noted down during deliberation for village development but priority scales applied in the realization.

x. Rosianna
- Rob flood makes children reluctant to go to school, disturbing the schooling process. They need education for their future. They need to be motivated to prioritize education.

xi. Potencial active involvement of women:
    - Channeling empowerment funds to individual (women are preferred),
    - To conduct not only theoretical, but also practical training to improve practical knowledge. This increase market accessibility of products,
    - Not just training and practicing but also capital and marketing (continuous training). Monitoring and evaluation are necessary, as well as continuous assistance,
    - Collaboration with Community Empowerment Goup (LPM) and Self-reliance Groups (BKM). The latter is a legal entity focusing mainly on poverty eradication,
    - Processing of pond's harvest can involve women,
    - Training such as processing of banana skin is good, but the marketing scale is still small,
    - The Villages of Pabean, Bandengan, and Pasir Sari are potential for batik production,
    - Fish auction hall have served the fishermen community of North Pekalongan, also benefitted fishermen from other regions. But since siltation occur at the access flow to the hall, the activity reduced massively and the economy struggles,
    - The City Government currently develops a technopark for fishery, which will provide trainings and cold storage facility,
    - For the next FGD to invite the same community for not repeating the process from the beginning,
    - Climate change education for childred need to be provided,
    - Rivers with pumps need to be equipped with sluices,
    - Potencial collaboration with Agency for Creative Economy needs to be explored to develop promote crafts.

PEMERINTAH KOTA PEKALONGAN
BADAN PERENCANAAN PEMBANGUNAN,
PENELITIAN DAN PENGEMBANGAN DAERAH

Jl. Sriwijaya Nomor 44 Pekalongan 51111 Telepon/Fax : (0285) 423223
Email: bappeda@pekalonngankota.go.id Web: bappeda.pekalongankota.go.id

DAFTAR HADIR

Hari, tanggal : **Minggu, 29 April 2018**
Waktu : **08.30 WIB - selesai**
Tempat : **Ruang Kalijaga Setda Kota Pekalongan**
Jl. Mataram No. 1 Pekalongan
Acara : **FGD mengenai "Peran Perempuan Terdampak Perubahan Iklim (Rob)"**

NO	NAMA	INSTANSI	L/P	TANDA TANGAN
1.	Suparbini	Kramatsari	P	1.
2.	Minarsih	Degayu	P	2.
3.	M. Fauzan	[illegible]	L	3.
4.	Azizah. R	Bandengan	P	4.
5.	Abimanyu S. Ag.	Kemitraan	L	5.
6.	Khair Ranggi	Kemitraan	P	6.
7.	Budi. Ch	Kemitraan	L	7.
8.	Taufik	——	L	8.
9.	Adetya. R.	—"—	P	9.
10.	Kaylsah	Padukuhan Kraton	P	10.
11.	Nurul [illegible]	pnp. Lmaran		11.
12.	Sutapaningsih	Kand Panjang	P	12.
13.	Sunoskoro Hadi	Panjang Baru	L	13.
14.	Sylviana Dewi	PKK	P	14.
15.	Tusmanto	Kel P wetan	P	15.
16.	Rosiana	Kel Bandengan	P	16.
17.	AMALIA FUBANI	KEMITRAAN	P	17.
18.	Arif Nurdiansah	Kemitraan	L	18.
19.	Zubaidah	TKPD	P	19.
20.	NURYATI	PANJANG BARU	P	20.
21.	Agus P	Degayu	L	21.
22.	Gunang	—"—	L	22.
23.	Anita Maryari	BAPPEDA	P	23.
24.	M. Rosdi P	"		24.
25.	Amalia	BAPPEDA	P	25.
26.	FACHRUL RISQI	RT	L	26.
27.	Sulistyanto	RT	L	27.

Pekalongan, April 2018

Mengetahui,

PPTK

NUR SLAMET B., S.Pi, M.Si
NIP. 19721201 199903 1 005

DAFTAR HADIR PESERTA

No	Nama	Instansi	Nomor Tlp/Hp/email
1.	Sylviana Dewi	Pasirkratonkramat	085742035733
2	Supartini	"	085725156956
3.	Minarsih	Pegayu	085741513734
4.	Azizah. R	Bandengan	085865531532
5.	Kayisah	Padukuhan Kraton	085728361661
6	NURUL HIDAYATI	Padukuhan Kraton	085878912572
7.	TRISNAWATI	KEL. PANJ. WETAN	085742 880 929
8.	ROSIANA	KEL. Bandengan.	085876397744.
9	Sutaningsih	Kel. Kand Panjang	081542218522
10	Subaidah	Kel TIRTO	085869874235
11	NURYATI	Pungkuran Baru	085643654014.
12	SUKOSRONO Hadi	Pungkuran Baru	081542236299
13.	Bijanto P	Bappeda	085866389211.
14.	Ganang	Kraton	0856432985 11
15.	Anita Nanjani	BAPPEDA	082135122708
16.	A. Rusdi	Li	085700026025 21

REPUBLIK INDONESIA
KEMENTERIAN LINGKUNGAN HIDUP DAN KEHUTANAN
Gedung Manggala Wanabakti, Jalan Gatot Subroto,
Jakarta 10270, Kotak Pos 6505
Telepon : 5730191, Faximile : 5738732

Jakarta, 8 August 2018

Ref : No.S.41/NFP/VIII/2018
Attach :
Subject: Letter of Endorsment

To:
The Adaptation Fund Board
c/o The Adaptation Fund Board Secretariat
Email: secretariat@adaptationfund.org
Fax: +1 202 522 3405

Dear Adaptation Fund Board Secretariat,

We have received a full proposal from Kemitraan entitled:
"Building Coastal City Resilience to Climate Change Impacts by Employing Hard and Soft Structure Interventions (Case Study: Pekalongan City)".

I am writing to you as in my capacity as the National Designated Authority for the Adaptation Fund in Indonesia. We see this proposal is in accordance with the National priorities in implementing adaptation program and activities to reduce adverse impact of, and risks, poses by Climate Change in the vulnerable regions in Indonesia.

With this consideration, we strongly recommend the above proposal to be granted support from the Adaptation Fund Board. The program will be implemented and executed by The Partnership for Governance Reform in Indonesia.

Yours Sincerely,

Dr. Nur Masripatin
National Focal Point to the UNFCCC
Senior Advisor to the Minister of Environment and Forestry on
Climate Change and International Conventions

MAYOR OF PEKALONGAN CITY

Letter of Endorsement by Municipal Government of Pekalongan

No.: 660/0985

March 22, 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 "Building Coastal City Resilience to Climate Change Impacts" Proposal***

In my capacity as designated Mayor of Pekalongan City, Central Java, Indonesia, I confirm that the above national program proposal is in accordance with the municipal city government's area priorities in implementing adaptation program and activities to reduce adverse impacts of, and risks, posed by climate change in the vulnerable and effected areas in Pekalongan. The proposal has been developed through an intensive consultation with the city government of Pekalongan and other related stakeholders.

Accordingly, I am pleased to endorse the above program proposal with support from the Adaptation Fund. If approved, the program will be implemented by Partnership for Governance Reform in Indonesia (Kemitraan).

Sincerely,

Mayor,

H. ALF ARSLAN DJUNAID, SE

Mataram street 1st Phone. (+62285) 421091 Fax. (+62285) 424061 Pekalongan Pos code 51111

PEMERINTAH KOTA PEKALONGAN
BADAN PERENCANAAN PEMBANGUNAN
PENELITIAN DAN PENGEMBANGAN DAERAH
Jl. Sriwijaya No. 44 Pekalongan Kode Pos 51111
Telepon (0285) 423223 fax (0285) 423223 – 303
e-mail: bappeda@pekalongankota.go.id website: http://bappeda.pekalongankota.go.id

Letter of Endorsement

No : 050/1224

The Adaptation Fund Board **8th April 2019**
c/o The Adaptation Fund Board Secretariat
Email : secretariat@adaptation-fund.org
Fax: +1 202 5223240/5

Subject: Endorsement for Building Coastal City Resilience to Climate Change Impacts and Natural Disasters in Pekalongan City, Central Java Province Proposal

Dear The Adaptation Fund Board Secretariat,

In my capacity as The Head of Agency for Regional Development Planning Pekalongan City, Central Java, Indonesia, I confirm that the above national program proposal is in accordance with municipal city government's areas priorities in implementing adaptation program and activities to reduce adverse impacts of, and risks, posed by climate change in the vulnerable and effected areas in Pekalongan. The proposal has been developed through an intensive consultation with The Local Government of Pekalongan City and other related stakeholders.

Accordingly, I am pleased to endorse the above program proposal with support from The Adaptation Fund. If approved, the program will be implemented by The Partnership for Governance Reform in Indonesia (Kemitraan).

Especially for mangrove restoration activities in relation with tenure access, The Local Government of Pekalongan City by 2020 will gradually purchase those lands and other critical lands for green open areas and other conservation purposes.

After program closure, The Agency for Regional Development Planning Pekalongan City, Central Java will put the program outcomes i.e. embankments, eco-tourism, latrines, and mangroves through the inclusion into The Medium-Term Development Plan of Pekalongan City.

Sincerely,

PEMERINTAH KOTA BAPPEDA PEKALONGAN

Ir. Anita Heru Kusumorini, MSc.
Head of The Agency for Regional Development Planning Pekalongan City

CC:
Mayor of Pekalongan City.

KOTA TANPA KUMUH (KOTAKU)
" BKM SUKSES IKHLAS "
KELURAHAN KRAPYAK
Sekretariat : Jl.Ampel Gading Depan Rusunawa Krapyak Ior Slamaran Pekalongan Telp. (0285) 413921

No :

The Adaptation Fund Board
c/o The Adaptation Fund Board Secretariat
Email : secretariat@adaptation-fund.org
Fax: +1 202 5223240/5

8th April 2019

Subject: Endorsement for Building Coastal City Resilience to Climate Change Impacts and Natural Disasters in Pekalongan City, Central Java Province Proposal

Dear The Adaptation Fund Board Secretariat,

In my capacity as The Secretary of BKM Sukses Ikhlas, the Community Empowerment Agency in Krapyak, Pekalongan city, Central Java Province, I confirm that BKM Sukses Ikhlaswill be the agency used by the above program to support the activities that need revolving fund as the modality mentioned in the above proposal.

Once the above program approved, we will have detail MOU and Contract with The Partnership for Governance Reform (Kemitraan). Meanwhile the revolving fund process and its rule of thumb through our organization is explained in the above proposal.

I am pleased to endorse the above program proposal with support from The Adaptation Fund.

Sincerely,

BADAN KESWADAYAAN MASYARAKAT KELURAHAN KRAPYAK BKM SUKSES IKHLAS KECAMATAN PEKALONGAN UTARA KOTA PEKALONGAN

Naili Izza, A.Md
The Secretary of BKM Sukses Ikhlas

Annex 5: Documentation on FGDs and Consultation

 	Consultative meeting with Regional Planning Agency (BAPPEDA) of Pekalongan City
 	Focus Group Discussion in Pekalongan City
	Consultative meeting with Regent Secretary of Pekalongan City
	Consultative meeting with Public Work Agency of Pekalongan City
	Discussion with Farmer's Group Leader "Tani Makmur" in Bandengan Village

 	Discussion with Head of Tirto Village and Tirto Village community
	Discussion with BAPPEDA Semarang Province
	Discussion with Head of Environment Agency in Semarang Province
	Consultative meeting with Former Mayor of Pekalongan

	Consultative meeting with BINTARI
 	Consultation meeting with the Mayor of Pekalongan
 	FGD Gender

ACTIVITY	BACKGROUND	TECHNICAL DETAILS	Target
Preparation to develop climate working group, both at community and at city level	To withdraw a wider community support, participation and buy-in towards the program right from the beginning, Climate Working Group will be established at community level, called as Community Working Group (CWG) and in wider scope at city level, called Pekalongan City Climate Working Group (PWG). PWG consists of representatives of different groups from within the target community, representing the voice, needs and interest of those groups. The PWG is foreseen to be legally formed through a Mayoral Decree. This legal binding is necessary, so that all results derived through the PWG become legitimate recommendation for the municipal government of Pekalongan City to be adopted within its plans for climate change adaptation actions.	1 CWG in each community consisting of community leader(s), local champions, women group, farmers group, youth group and also community member that could represent the voice of elderly, children and disable group. PWG consists of representatives of local government officials, academicians/research institutions, media, and local NGOs. The involvement of people from these diverse backgrounds is to ensure they could represent the voice, needs and interest of different group within the city and provide different perspective in seeing the issue at hand. To ensure continuous involvement in the working group, members of PWG is registered within the Mayoral Decree on behalf of their institutions. To ensure gender issue, female community members will fill 20% of the CWG. From a total 192 meetings planned to be undertaken in 8 villages, 50% of the meetings will invite gender representative to discuss gender-related issue under the program Responsibilities of the CWGs cover among others participation in the development of climate risk assessment, community's profiles and adaptation plan; support to the development of village information system; provision of inputs for the implementation of adaptation actions; selecting the precise location for the action; communication of community's profile and adaptation plan during Development Plan Deliberation at sub-district level. Responsibilities of PWG cover among others the development of City Climate Risk Assessment and City Climate Impact, support to the development of RAD API, support to the process of mainstreaming RAD API into local development plan, assessment on the pre-selected adaptation plan and implementation location, and support to the development of city-level knowledge management platform.	8 community (Degayu, Krapyak, Panjang Wetan, Panjang Baru, Kandang Panjang, Padukuhan Kraton, Bandengan and Pasir Kraton Kramat) and Pekalongan City

ACTIVITY	BACKGROUND	TECHNICAL DETAILS	Target
Regular/coordination meeting	As part of community's community empowerment measures, KWG meetings need to be conducted regularly to ensure that program implementation at community level is in line with the targeted objectives and done in timely manner. The meeting will discuss any emerging issues during program implementation and search for the appropriate solution to address the issues, such as gender issue, climate adaptation problem solving and governance related issues. PWG will have a monthly meeting in order to assure that program implementation at city level is align with the targeted objectives and done in timely manner. Issues collected from the KWG meetings will also be raised here.	Monthly meeting during the evening, so that women representatives could attend the meeting (based on input during Gender FGD). The CWG is expected to generate fund for the meeting in the 3rd implementation year, so that the meeting cost is not budgeted under AF.	8 community as above and Pekalongan City
Workshops and trainings	Workshops and trainings are intended to equip CWG at community level and PWG at City level with climate-related information and gender-responsive development; particularly those relevant to coastal area.	The targeted location for Bandeng (milkfish) farm in the community Bandengan, Kandang Panjang and Panjang Baru are currently at risk from coastal flooding, although the risk has the potential to be lowered significantly once the BBWS dam's construction in community Bandengan is finalised. In addition to basic climate- and coastal resilience-related information and gender-respensive development, PWG will receive more technical trainings in Vulnerability Assessment, City Climate Risk Assessment, Climate Coastal Impact, Climate Adaptation Plan and CCA integration into government planning process. Each of the activity is planned to invite 60 participants coming mostly from city stakeholders (including village representative). Province and national stakeholders will be involved frequently as resource person PWG is planned to receive a total of 4 workshops and 3 trainings. Outcomes of these workshops and trainings will be City Risk Assessment report, City Adaptation Action Plan document and Pekalongan City's RAD API.	

ACTIVITY	BACKGROUND	TECHNICAL DETAILS	Target
		Each of the activity at CIty level is planned to involve 60 participants from different background, not only government officials and community groups. Training on basic climate- and coastal resilience-related information will involve not only working group member, but also wider Pekalongan CIty stakeholders to build awareness and understanding on issues that are faced by the city. Another training/workshop that will be conducted at City level are leadership training for local champion and local government agency and collaborative adaptation actions across community. The leadership training is intended to equip local champions and city officials with adequate soft skill to continue the works after the proposed program is ended.	

ACTIVITY	BACKGROUND	TECHNICAL DETAILS	Target
Measured adaptation action for Pekalongan City	Agreed adaptation action at city level had been selected based on observation, assessment and deliberation with local stakeholders. Adaptation actions related to alternative livelihood in this level is similar to those implemented at village level. This activity will still remain cost-effective in comparison to directly implement city-wide scale, since the village level implementation will act as pilot project to assess the suitability and obtain lessons learned. Allowing the proponent to learn from potential issues that could arise prior to extending the implementation to other area.	**Coastal embankment** Coastal embankment in the form of geotube will be constructed with a total length of 900 m along the coastline of community Degayu and with a height of 60 cm. Considering that part of Degayu's coastline is river estuaries, which are partially protected by structural embankment, the geotube will be cpnstructd to fill the gaps on spots not protected by any structural embankment, e.g. along the coast at the eco-tourism site and areas of aquaculture farms. The Geotube system are fabricated using specially engineered woven and composite fabrics in order to meet varying tensile strength, durability and environmental requirements. The fabric can consist of either an engineered woven or a composite geotextile depending on the application requirements. The tubular shaped Geotube containers typically range in diameter from 1.5m to 5m. However, we also realize that geotube construction is a risk-free solution. Geotube structure might face some structural challenges which stemmed from various sources, among others the climate change impact. Severe sea-level rise might cause the ineffectiveness of geotube structure. The Geotube system involves the fabrication of close-ended tubular containers attached with filling ports at regularly spaced intervals. The Geotube containers are hydraulically filled with a slurry mix of sand and water and the hydraulic pressure will transport sand along the inside of the tube. Water will dissipate through the permeable engineered fabric, while sand will settle out within the container by gravity. A monolithic structure with compacted sand is formed and used in variety of marine applications.	*community Degayu and Kandang Panjang*
	The term pilot here is referring to financing scheme that will be implemented for actions related to alternative livelihood in the 8 targeted villages.	As secondary protection, mangrove belt will be planted between the coast and the geotube, trapping sand in order to restore the area's shoreline that is currently suffering from abrasion/coastal erosion. The species of mangrove that will be planted are Rhizophora mucronata, Rhizophora apiculata, dan Avicennia marina. Based on Bengen (2002), Rhizopora sp. will grow well in mud – sand areas, while Avicennia sp. will grow well in muddy sandy area. Moreover, Avicennia could grab sediment as its living media thus the process will form a land.	

ACTIVITY	BACKGROUND	TECHNICAL DETAILS	Target
	The selected adaptation actions are those related to coastal protection, alternative livelihood and reducing community's vulnerability from health aspect. The actions themselves will not implemented only by male population. The program targeting 40% of women population are actively participate in the implementation of selected adaptation actions.	Similar geotube embankment will also be constructed with a total length of 500 m and 60cm height along the coastline of community Kandang Panjang. Considering that some area in Kandang Panjang Village will get positive impact from the existence of BBWS' dam (protected by the dam), this geotube construction will not be done in continuous manner along the coastline of the village. It will still provide access for Kandang Panjang's fishermen community to go fishing. This construction will also protect PIM area and aquaculture ponds (incl. shrimps and milkfish farming) from coastal flooding. Same as in Degayu, sand trap will also be supported by mangrove belt behind the geoutube.	
Adaptation Action Implementation	The agreed adaptation action at village level had been selected based on observation, assessment and deliberation with local stakeholders. This village level adaptation action will act as pilot project for action at city level. Among actions to be implemented are those related to coastal protection and alternative livelihood. From the implementation of this alternative livelihood, it is expected that the community will be able to reduce their income decreases by 20% at the very least	**Vennamei Shrimp Aquaculture Farm** In comparison to other aquaculture commodity (fish and crab), vennamei shrimp is considered as the most feasible aquaculture practices to be implemented in Degayu Village due to water quality and characteristics in the said area. As alternative livelihood, this practice is not intended to increase community income, but reduce a decrease in their income. Currently, vennamei shrimp farming have been an ongoing practise in Degayu, but the farmer's income from this practise is highly volatile since their farming method is still conventional and severely affected by flooding and changing weather. This proposed programme will equip farmer with adequate farming skills, method and utensils (seed, aeration fan, pond cover, bar screen etc.); lowering their economic vulnerability to climate change impact. Reflecting upon the lessons learned from the initial 8 locations, theactivity will then be extended to additional 15 sites, all in Degayu, with different funding mechanisms. Farmers in the additional 15 sites will be supported by loan capital to start and run their business. This scheme is intended to improve current practices of vennamei shrimp farming, which is mostly conventional.	8 locations in community Degayu, extended with additional 15 location under different funding mechanism

ACTIVITY	BACKGROUND	TECHNICAL DETAILS	Target
		Successful aquaculture farming practices of vennamei shrimp will enhance community's economic condition and support Pekalongan City government in enhancing their food security which previously disrupted due to the loss of agricultural land, as well as strengthening the role of Pekalongan City as minapolitan area. As a result, the community will have enough financial capacity to respond to climate impact, such as to better protect their individual house from the risk of coastal flooding (for instance: heightening their house floor, construct house-scale structural barrier, renovate the damaged houses etc.). In other words, better aquaculture practices will increase their economic adaptive capacity.	
		***Bandeng* (milkfish) Farm** Vennamei shrimp is considered as unsuitable to be bred in the other 7 community. During proposal development process, Here, Bandeng fish is agreed as the most potential commodity to be farmed. Water quality and characteristics in those area are suitable for Bandeng farming. Bandeng farming have been the chosen alternative livelihood for Pekalongan coastal community for quite sometime. But in the past years, this livelihood is being left behind by the community due to coastal flooding and low capital to start a new bandeng farm pond (the previous pond is inundated). Under this program, farmer will be equipped with adequate farming skills, method and equipment; lowering their economic vulnerability to climate change impact. As alternative livelihood, this practice is not intended to increase community income, but reduce a decrease in their income. As a result, they can save more fund that can be used to renovate their damaged house (from coastal flooding). , or in other words, the community's economic adaptive capacity is increasing.	A total of 9 locations in 7 villages (Krapyak, Panjang Wetan, Panjang Baru, Kandang Panjang, Padukuhan Kraton, Bandengan and Pasir Kraton Kramat). Additional sites under loan scheme: Phase 1: a total of 60 sites in community Bandengan, Kandang Panjang, Panjang Baru and Degayu (15 sites each). Phase 2: a total of 15 sites in community Krapyak, Panjang Wetan, Padukuhan Kraton and Pasir Kraton Kramat

ACTIVITY	BACKGROUND	TECHNICAL DETAILS	Target
		In addition to that, a successful aquaculture farming practices of bandeng will also support Pekalongan City government in enhancing their food security which previously disrupted due to the loss of agricultural land, as well as strengthening the role of Pekalongan City as minapolitan area. The targeted location for Bandeng farm in Bandengan, Kandang Panjang and Panjang Baru Village are currently at risk from coastal flooding, although the risk has the potential to be lowered significantly once the BBWS dam's construction in Bandengan village is completed. To further lower the risk and protect the farm from coastal flooding, mangrove restoration will be done. Mangrove will act as the green belt barrier between the farm and the sea, reducing their sensitivity to climate impact. In addition to that, mangrove will create a better water quality in the farm by acting as water purifier. Similar to vennamei shrimp farming, bandeng farming is to be extended in additional sites, divided in 2 phases under loan financing scheme. The 1st phase will be in the community Bandengan, Kandang Panjang, Panjang Baru and Degayu covering 15 sites each. The 2nd phase will cover the community Krapyak, Panjang Wetan, Padukuhan Kraton and Pasir Kraton Kramat totaling of 15 sites.	
		Mangrove restoration Mangrove restoration will be conducted in 4 villages that has the highest inundated area, with a total of 1,000 mangroves (Rhizophora mucronata, Rhizophora apiculata, dan Avicennia marina) to be planted; protecting them from direct contact to coastal flooding (reducing their sensitivity). Aside for coastal protection in the form of green structure, mangrove restoration will also serve the purpose as protection structure for eco-tourism site in Panjang Baru and Degayu (secondary protection structure, map attached in the annex 2) and aquaculture farm (primary and secondary, depending on the location).	1000 mangroves in each of the 4 targeted villages (Bandengan, Kandang Panjang, Panjang Baru and Degayu) and PIM facility with a total 70 mounds of mangrove trees covering a total restoration area of 10 Ha

ACTIVITY	BACKGROUND	TECHNICAL DETAILS	Target
		Existingly, bandeng and vennamei shrimp aquaculture farm owned by the community have very little to no protection to coastal flooding. T he farming area is directly exposed to the sea, resulting in significant economic loss when the flooding event came in contact with the farm. The existence of mangrove is expected to reduce this direct contact between flood and the farm. Accordingly the design of fish and vennamei shrimp pond will take account of mangrove belt that will be planted in the area; integrating mangroves into the design will increase the physical resilience of the coastline with natural and local-based structure intervention. The Avicennia sp. could grab sediment as its living media, thus it will generate a new land. In addition to coastal protection in aquaculture farming areas, mangrove restoration will also be conducted at Mangrove Information Centre (PIM), a facility managed and maintained by the municipal government of Pekalongan City. Lies within the administrative area of community Kandang Panjang. The mangrove restoration of PIM will extend coastal protection of Kandang Panjang and revitalise the mangrove condition here, as well as increasing protection to the facility itself. As mentioned earlier, mangrove belt in this facility will also be planted behind the geotube construction as secondary protection. The mangrove itself will be protected by geotube construction in Degayu Village and Kandang Panjang Village and BBWS' dam in Bandengan Village (that will also protect Panjang Baru Village), reducing their sensitivity to climate impact.	
		Reconstruction of individual sanitation facilities	25 individual sanitation facilities in each of the 8 targeted communities, totalling 200 units

ACTIVITY	BACKGROUND	TECHNICAL DETAILS	Target
		Due to recurring coastal flooding, most of community's individual latrines cannot be utilized, while their septic tank are also submerged. Aside for fulfilling basic needs, their daily and monthly income were spent for reconstructing their house, leaving them with not enough fund to fix their sanitation facilities. A prolong condition of poor sanitation condition could potentially leads to health risk (water-borne disease and unsanitary practices). Hence this program tries to decrease community's vulnerability from health sector by reconstructing individual sanitation facilities; their household toilet and septic tank. Preventing water-borne diseases and subsequently increase their adaptive capacity in facing climatechange impact. In addition to that, this program will also support national government target in achieving Universal Access for Sanitation in 2019.. Twenty-five (25) individual sanitation facilities will be constructed in each of the 8 targeted villages, making it 200 individual sanitation facilities in total that will be built under the program. Reconstruction of the existing sanitation facilities will be done to household that are located in a non-permanently inundated area. The facility itself will be ensured to be designed and constructed in water tight and permeable way, preventing water intrusion. This permeable character is also the requirements under SNI 03-2398-2002 and SNI 03-2399-2002 on Latrine and Septic Tank Design Procedure. Extending the above 200 facilities, 192 sanitation facility will additionally be built in 8 communites (24 in each community) under loan financing scheme (micro loan) managed by a financial institution.	24 individual sanitation facilities under micro loan financing scheme, totalling 192 units in each of the target communities. (Degayu, Krapyak, Panjang Wetan, Panjang Baru, Kandang Panjang, Padukuhan Kraton, Bandengan and Pasir Kraton Kramat))
		Construction of communal sanitation facilities Communal sanitation facilities will be dedicated to households with housing condition that are permanently inundated, making it impossible to reconstruct their individual sanitation facilities.	2 communal sanitation facilities in each of the 8 targeted communities 1 comunal sanitation facilitiy in each of the 8 targeted communities

ACTIVITY	BACKGROUND	TECHNICAL DETAILS	Target
		For area that are permanently inundated and directly facing the sea, considering the high density of building in the area, the facilities will utilize floating toilet design, with combination of floating biodigester and wetland system as the waste water management system. This floating design will be implemented in Bandengan Village, where BBWS dam will serve as the protection structure for the facility. This floating toilet is a toilet on a platform built above or floating on the water. Instead of excreta going into the ground they are collected in a tank or barrel. To reduce the amount of excreta that needs to hauled to shore, the floating biodigester and wetland system are combined as the waste water management system. While for other villages, the facilities will be located in an area with lower risk to coastal flooding, reducing its likelihood to be inundated by coastal flooding. The constructed facilities in these villages will be a standard communal toilet that equipped with simple wastewater management system (communal septic tank or anaerobic baffle system; depending on the site location). Two communal sanitation facilities will be built in each of the 8 targeted villages; where each facility can serve between 20-30 household. Similar to individual sanitation facilities, this communal facility is intended to increase sanitation access for the community that will subsequently reduce their health risk. Preventing the occurrence and spread-out of water-borne diseases and subsequently increase their health-related adaptive capacity in facing climatechange impact. The facility itself will be ensured to be designed and constructed in water tight and permeable way, preventing water intrusion. This permeable character is also the requirements under SNI 03-2398-2002 and SNI 03-2399-2002 on Latrine and Septic Tank Design Procedure; and became significant when considering the floating design. Extending the above facility, 1 communal sanitation facility will be build for each community under loan financing scheme managed by financial institute.	(Degayu, Krapyak, Panjang Wetan, Panjang Baru, Kandang Panjang, Padukuhan Kraton, Bandengan and Pasir Kraton Kramat))

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
A	**National Level**			
1	**ICCTF** (Indonesia Climate Change Trust Fund); **RAN-API** (National Action Plan – Climate Change Adaptation) **Secretariate**; **Thamrin School**; **WALHI** (Friends of the Earth – Indonesia); **IESR** (Institute for Essential Services Reform); **ICA** (Indonesia Climate Alliance) – 20/04/16 and 02/05/16	•To get input from institutions and CSOs who have been heavily involved in the climate change issues and the development of climate change strategies in Indonesia, what type of climate change adaptation proposal concept that Kemitraan should be building. •To gain more knowledge of the vast working area and referring to the RAN-API framework from the government of Indonesia, which cluster of climate change adaptation should make the priority for work in Indonesia. •To identify the thematic and locations area(s) to focus on for climate change adaptation.	•RAN-API is undergoing second review and its monitoring and evaluation framework is in development. •Suggests that the climate change adaptation activities that should be proposed through AF funding, should be directed towards small islands areas. •Food security is also a crucial issue, especially for certain parts in Indonesia namely the Eastern parts. •Activites should not be only directed towards agriculture but also fishing, especially providing training of correct fishing for fishermen communities.	•Based on the consultations, Kemitraan will build the proposal concept under the Small Islands and Coastal Climate Resilience thematic area . •Will urgently request audience with MoEF and MoF in order to receive statement on who holds the NDA status.
2	**Director for Climate Change Adaptation** of the Directorate General of Climate Change Control at the **Ministry of Environment and Forestry** – 27/04/16:	•To gain input from the MoEF on the type of climate change adaptation proposal concept that Kemitraan should be building. •To receive information on who holds the Adaptation Fund NDA status in Indonesia.	•Issues of Health can also be raised in the Coastal areas. •There are 15 areas that are considered as priority for high climate risk (stated in RAN API, if Kemitraan can help in building the climate change adaptation plan in those areas that would be a welcomed initiative. •Use SIDDIK for data collection. •Received info that WFP has been deemed as fail to perform their Adaptation Fund program in Lombok, West Nusa Tenggara, Indonesia.	•Should focus in one of the 15 areas/locations priorities in RAN API •Use Sidik for climate risk assessment
3	**Deputy Director for International Cooperation and Climate Finance** at the **Ministry of Finance** – 31/05/16:	•To inform MoF about the Adaptation Fund NIE accreditated status received by Kemitraan, and the consultation process for proposal concept writing. •To receive information on who holds the Adaptation Fund NDA status in Indonesia.	•MoF seems to think that the NDA should be with them however.	•MoF will later confirm about the NDA status with MoEF.
4	**Director-General** for Directorate General of Climate Change Control at the **Ministry of Environment and Forestry** -29/07/16:	•To receive endorsement letter from the Director-General for Directorate General of Climate Change Control at the Ministry of Environment and Forestry, as the Adaptation Fund NDA in Indonesia.	•Ms. Masripatin has read the brief of the then proposal concept for the project Kemitraan intends to propose to Adaptation Fund, and she gave her approval.	•Director-General for Directorate General of Climate Change Control at the Ministry of Environment and Forestry gave the endorsement letter to Kemitraan to be submitted along with the proposal concept to Adaptation Fund.
5	**Research Associate** for Marine Research Center, Agency for Marine & Fisheries Research & Human Resource at the **Ministry of Marine & Fisheries** – 24/02/17:	•To gain input from MoMF on the climate change adaptation proposal concept that Kemitraan is currently writing, especially on the program currently developed, adaptation strategies, and problem solutions. •To receive information on MoMF related activities in the areas of climate change adaptation.	•MoMF Research Center is currently working together with BAPPENAS to create Indonesian Marine Health Index. •In the coastal areas might be important to focus into skills and other initiatives development for Fishermen; Sea products cultivator; and Salt cultivation as income source and livelihood improvement. • •	•In creating or implementing adaptation programs, it is important to include the geographical condition of the project location, especially when the program conducted has a lot to do with using local natural resources in improving the local livelihood. •The program that is to be implemented should be based on accountable field survey and directed towards generating alternative income and economic improvement for the local community in the coastal areas.
B	**Province Level**			
1	**BAPPEDA** (Local Development Planning Agency) of Central Java Province - 24/03/17:	•Gain information on Provincial plan in resolving the serious condition in Pekalongan, notably with the river infrastructure since the authority regarding river diversion etc., falls under the provincial geovernment. •To get data and information about coastal zone management areas in Central Java and Pekalongan.	•Confirmation on reclamation plan to be implemented. •The coastal zoning plan has just finished, a result of work by Marine and Fishery Agency and BAPPEDA of Central Java. •Hope for up-scaling the Kemitraan project in Pekalongan in other parts surrounding it.	•Kemitraan received substantial data from BAPPEDA of Semarang Province and commitmet to support Coastal resilience action in Pekalongan City

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
		•To have a mutual understanding on what activities that Kemitraan should conduct in order to compliment the activities done by BAPPEDA Semarang province in Pekalongan.		
2	**Head of Environment Agency** of Central Java Province - 24/03/17:	•To inform about Kemitraan's intention in having Pekalongan as the project location for Kemitraan's climate change adaptation project, funded by Adaptation fund.	•Briefing on the consultation process done in Pekalongan with the Mayor of Pekalongan and multi-stakeholders; with the BAPPEDA of Semarang province. •A description on the type of project that is planned to be implemented in Pekalongan, as a result of multi-stakeholders consultation.	•Head of Environment Agency of Semarang province is well informed and support Kemitraan's climate change adaptation proposal concept to Adaptation Fund on focusing coastal city resilience in Pekalongan City
C	**City Level**			
1	**Head of BAPPEDA** (Local Development Planning Agency) **in Pekalongan** – 20/03/17	•To inform the government of Pekalongan about Kemitraan's intention in having the town as the project location for Kemitraan's climate change adaptation project, funded by Adaptation fund. •To gain the government of Pekalongan's support and approval for Kemitraan contacting as well as visiting multi-stakeholders in Pekalongan for data collection. •To get a formal endorsement from the government of Pekalongan for Kemitraan's concept proposal.	•Government of Pekalongan understands the Kemitraan's climate change adaptation concept proposal and provides official support for submitting the proposal to the Adaptation Fund. •The BAPPEDA Pekalongan aided Kemitraan in contacting and inviting the multi-stakeholders to attend the FGD.	•Government of Pekalongan's endorsement for Kemitraan's concept proposal and their support for the project development and implementation. •BAPPEDA suggest kemitraan can focusing on nine climate vulnerables communities in Pekalongan City
2	**Former Mayor of Pekalongan** (period of 2005-2010 and 2010-2015) – 20/03/17:	•To inform about Kemitraan's intention in having the town as the project location for Kemitraan's climate change adaptation project, funded by Adaptation fund. •To gain information on the past initiatives done in mitigating the climate change related in Pekalongan.	•Past initiatives avoided any nature reconstruction activities (reclamation), tend to sort for building geo-tube, mangrove restoration (with the intention to also develop alternative income from the habitat through crab, Panami shrimp cultivation). •Other activities involved creating rivers to collect the water from the flood; also by channelling the flow of the floods into the selected rivers; relocation of 40 – 60 households who used to live in the riverbanks;	•For mangrove restoration, there are some issues related to land ownership by community as well as the Pekalongan District. •Even though building embankments are needed but not exactly required. Aids should be directed mostly towards geo-tube construction, ponds revitalization programs. •Mr. Ahmad (former mayor) assisted in notifying Mayor of Pekalongan about Kemitraan's project concept intention, as well as other officials in the different institutions.
3	**Multi-stakeholders Focus Group Discussion** for Adaptation Fund in Pekalongan District – 21/03/17	•To inform the multi-stakeholders in Pekalongan about Kemitraan's intention in having the town as the project location for Kemitraan's climate change adaptation project, funded by Adaptation fund. •To get necessary contacts in order to gain access for data collection.	•Gained information on past and current programs undertaken by different institutions: Pekalongan was the first town issued a local regulation on coastal area management but the content was more directed towards natural disaster risk management. •Gained comments and inputs on the current conditions faced by Pekalongan, for instance: the national program of "Cities Without Slums" that was not making so much success; one of the causes of tidal floods and the high floodwaters was also due to poor infrastructure, and lack of initiatives from the ponds farmers to build water tunnels; the whole drainage system of Pekalongan was designed as irrigation system and not as water tunnels. •Towards the end of the FGD, the Mayor of Pekalongan stated the importance of bottom-up approach in his administration in order to get all the neighborhoods in Pekalongan to understand the local government vision and mission through 2021. He mentions the importance for geographical area mapping and finding solution to the tidal flood spectre problem. In 2017 the	•The FGD had succeded in giving Kemitraan contacts to gain access to various data of Pekalongan. •The acknowledgement of Kemitraan's climate change adaptation project concept development in Pekalongan by the Mayor of Pekalongan at the FGD, has given additional boost in gaining support from the multi-stakeholders.

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
			government has allocated 30 Million rupiahs to tackle the problem, which 20 Million allocation comes from local government budget, and the remaining 10 Million comes from provincial government budget.	
4	**Mayor of Pekalongan** (period of 2015-2020) – 21/03/17:	•To gain a formal endorsement from the Mayor of Pekalongan for Kemitraan's concept proposal.	•Mayor of Pekalongan understands the Kemitraan's climate change adaptation concept proposal and provides official support for submitting the proposal to the Adaptation Fund.	•Mayor of Pekalongan's endorsement for Kemitraan's concept proposal and his support for the project development and implementation.
5	**Regional Secretary of Pekalongan** – 21/03/17:	•To gain information of the past and current programs related to the climate change adaptation activities in Pekalongan. •To get feedback on priority locations and types of climate change adaptation activities for Kemitraan's concept proposal development.	•Received information about the climate change adaptation and mitigation programs and activities that have been and will be held by, or with support, of the government of Pekalongan. •Received substantial information and geographic priorities for the project;	•Activities to be proposed in Kemitraan's concept proposal should be synergized with programs and activities that are to be implemented by the local government of Pekalongan.
6	**BINTARI** (Bina Karta Lestari) **Foundation** – **CSO** – 20/03/17: **Amalia**	•To gain information on the impact of climate change in Pekalongan; the activities already carried out, both by the government and CSOs; the mitigation activities; the condition of the effected community in Pekalongan; the nature of cooperation with the local and provincial government.	•Based on observation, from 2000 – 2016, with the worst being 2008 onwards, the water from the sea has penetrated deep into the living areas of some heavily effected communities. •Using Bandengan community, as the worst effected community as an example, starting from 2000 the water from the wells were no longer drinkeable. •There are houses which are permanently flooded; houses that had to make additional higher modification to the based of the building which then resulted in the shorter and smaller doors and windows; toilets in the house which could no longer be used; •They did not have many alternatives to move due to the fact that many of the men in the community cannot abandon their livelihood. As a consequence, those who did not move and have the inside of their houses flooded had to adapt by wearing boots while inside the house and even sleep in the flood. •The health effect on the condition is the increase in diarrhea and dermatitis related illnesses. •Those who used to be rice farmers now switched to *wareng* seawed and fish pond. There were those who used to own lands for farming now had to revert on being paid workers for fish ponds and as construction workers, pedicab drivers, factory workers, fishermen.	•Many more in the community actually have the desire to learn how to cultivate seaweed and fish but request initial fund and continuous guidance from any able institutions. •It is imperative to get contacts from the FGD, in order to get access to collect various of required data. •Very important to document the real-life condition in Bandengan and other effected communities. •The community in Bandengan community should have received aid from the government for relocation but no such assistance ever been done.
7	**Local Disaster Management Agency of Pekalongan** - 22/03/17	•To gain information of the disaster vulnerability of Pekalongan.	•Received information about the condition and history of disaster in Pekalongan based on Disaster Risk Map.	•A clearer wholesome image of existing and potential climate and development related catastrophe in Pekalongan.
8	**Head of Environment Agency of Pekalongan** - 22/03/17	•To gain information on the status of Pekalongan's working group on climate change and adaptation strategies and mitigation implementation in Pekalongan.	•The understanding of importance to enable the working group of climate change in Pekalongan. •Proposed some adaptation activities to be included in the Kemitraan concept proposal.	•The Environment Agency's support for Kemitraan to submit the concept proposal to the Adaptation Fund.
9	**Public Work Agency of Pekalongan** – 23/03/17	•To gain information of the past and current programs carried out related to the climate change adaptation activities, in particular	•In attempt to resolve the tidal flood issues, the PWA in Pekalongan mainly focused their activities in	•Public works Agency ask kemitraan project concept will work at the activity level, concrete actions and the policy level.

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
		tidal flood problem mitigation, in Pekalongan.	bettering infrastructure by building drainage system. •For Bandengan they are planning on building a dam that hopefully can start in 2018. •The Northern areas of Pekalongan are the ones heavily effected by the tidal floods. •They are looking into solving the problem of tidal floods without having to cause other environmental damage resulted from taking boulders from the sea banks. •There has been talk about implementing reclamation as a strategy. •PWA of Pekalongan has cooperated with the research unit of LIPI (Indonesia Institute of Science) for trying to mitigate the tidal floods problem.	•Kemitraan received substantial data.
9	**Focus Group Discussion on** Potential Adaptation Activities at Community and City Level – 09/04/2018 Attended by community leaders from 8 communities, NGO and local government officilas	•To draw information from community and city officials on their needs related to adaptation actions and the most suitable actions to be implemented	•Structural adaptation actions under this program should consider the construction of concrete coastal embankment initiated by the national government; how it will complement each other to address coastal flooding issue in Pekalongan City •Degayu area has the potential for ecouturism development. City Tourism Agency and BAPPEDA agreed on this potential and will support its development •There are potential idle land for fisheries development •Vennamei shrimp has a high potential to increase community's economic productivity, yet its development is hindered by financial constraint and low level of technical skill •The community needs technical assistance in post-production process of fisheries products in order to provide added-value to the product	• The program will provide alternatives for coastal embankment's location •Ecotourism and secondary fisheries product development will be among alternative livelihood proposed under this program •Introduction of alternative livelihood will be complemented with continuous technical assistance
10	**Agriculture and Marine Agency** – 23/04/2018	•Follow up to the previous Focus Group Discussion on Potential Adaptation Actions •Assessing potential for collaboration during program implementation	•Aquaculture in the form of Venamei shrimp is highly feasible in eastern area of Pekalongan City. At the moment its development is hindered by financial and technical constraint •Western area of Pekalongan City are more suitable for aquaculture in the form fish and seaweed •Construction of coastal embankment should consider its impact to water flow in area behind the embankment. Will it affect community's pond? •At the moment, community still focusing in selling fresh fisheries product. It is expected that they could sell secondary product to increase the selling price. Technical assistance is needed on this matter, including marketing access and campaign (ways to introduce new products to community)	• The proposed program will take account information on potential location for adaptation actions •The proposed alternative livelihood will be complemented with apt technical assistance (work in collaboration with Agriculture and Marine Agency), including those related to marketing context
11	**Focus Group Discussion on** Gender Aspect with Women Group's Representative – 29/04/2018 **Women Champion from 8 communities, women formal and informal leader**	•To assess how women's group perceived and deal with the impact of coastal flooding on their daily life •To identify adaptation strategies for women affected by climate change	•Not all women are house-wife, some of them also have permanent jobs. •Community meeting often held in the evening where most women have other responsibilities at home •Coastal flooding have become a burden for them since they have to clean their house from flood water in daily basis on top of their other formal works and household responsibilities •The program should consider not only physical disruption of the area but	• Proposed program structure will include gender perspective within, for instance in the PMU structure, meeting and training design (including timing for the meeting), potential adaptation actions that also considered mental status of the targeted beneficiaries, and also alternative livelihood for women group •The impacts of climate change are felt by women, especially as they are in daily life more dependent on natural

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
			also mental state of the affected people •Training on alternative livelihood is very much welcome but need to be complemented with capital and marketing support (particularly in the beginning)	resources that are exposed to climate change impacts. •Their limited mobility often constraint and limit their capacity to cope with the effects of climate change. •Women participating in the FGD have played a role and have the potential to become effective actors or agents of change related to climate change adaptation. They have basic knowledge and skills that can be utilized in adaptation strategies. •When responding to the impacts of climate change, establishing gender-sensitive strategies is critical to ensure the rights of women affected by climate change can be met, including in terms of access to resources and their participation in the decision-making process. Some women have often been included in decision-making regarding responses to climate change impacts. However, this situation needs to be improved in order to be more equitable, as these participants (mostly) are indeed women who are actively organizing or even formal leaders (one of them is the Chief Community) in their respective communities. •Information related to the role of Women Affected by Climate Change can be used to address knowledge and data gaps related to the vulnerability and impacts of climate change on women and to accelerate learning on effective gender adaptation measures and strategies. •It is necessary to rebuild consultation rooms for the affected women consultation to better explore their knowledge, skills and experience in the process of implementing adaptation action in Pekalongan City •for revolving fund , all participants agree if wife or women should know and come when the money landing and used
12	**City Stakeholder Focus Group Discussion on** Framework and Potential Implementation of The Proposed Program – 20/07/2018 Attended by community leader, local NGO, academicians and local government representatives	•To disseminate and reach an agreement on the proposed program's framework and activities •To disseminate potential risks associated with program implementation	• Clarification that river flooding is the main cause for inundation at Tirto Community •The stakeholder agreed on the proposed implementation area and the selected adaptation actions • The stakeholder believes that program implementation should focus not only on action implementation, but also strengthening stakeholder capacity, building knowledge management and advocacy process to higher government level • City stakeholders committed to support program implementation should the proposal is approved • City stakeholders are made aware and understand on the potential risks associated with the program from the communication of ESMP draft during the event	• Tirto community will not be included as implementation area at community level; and thus Implementation at community level will only cover 8 communities, they are: Degayu, Krapyak, Panjang Wetan, Panjang Baru, Kandang Panjang, Padukuhan Kraton, Bandengan and Pasirkraton kramat •Adaptation actions and implementation location proposed within the proposal are the results of consultation and agreement with the relevant stakeholders, including local community and local government institutions. For instance, eco-tourism site is agreed by Tourism Agency and coastal embankment is agreed by BAPPEDA. •Framework for the proposed program is focusing on 4 aspects: Capacity development, Adaptation Action, Knowledge Management and Advocacy; in which those aspect will be exercised in 4 governance level • Initial commitment and support acquired from the city stakeholders; a significant capital for program commencement

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
D	**Community Level**			
1	**Leader of Farmers Group "Tani Makmur"** in Bandengan Community - 21/03/17	•To gain information on the condition of social, cultural and community institutions as well as the impact of a tidal flood disaster in the community.	•The clearer picture of the condition of the community areas affected by tidal flood. •Gathered information on community profiles, groups and community conditions, of which the stories told by the farmer pretty much corroborated the earlier information received from BINTARI. •Information on community activities plan in adapting to the tidal flood disaster.	•Direct observation on the areas of Bandengan community affected by tidal flood disaster. •Was shown a business development proposal written by the farmers group for fish and seawed cultivation in Bandengan community. •Bandengan community's support for Kemitraan's planned activities for the community.
2	**Community group of Degayu Community** - 22/03/17	•To gain information on the condition of social, cultural and community institutions as well as the impact of a tidal flood disaster in the community.	•The clearer picture of the condition of the community areas effected by tidal flood. •Gathered information on community profiles, groups and community conditions. •Information on community activities plan in adapting to the tidal flood disaster.	•Direct observation on the areas of Degayu community effected by tidal flood disaster. •Degayu community's support for Kemitraan's planned activities for the community.
3	**Head of Tirto Community and the Community group** - 23/03/17:	•To gain information on the condition of social, cultural and community institutions as well as the impact of a tidal flood disaster in the community.	•The community income mainly come from Batik (Batik artists) which are mostly home industry, and factory workers. •Like Bandengan, they lost their rice farming to tidal floods. •Whenever the tidal floods occur they cannot continue with their livelihood, they had to wait until it subsided, which could take up to weeks. •One of the source of tidal floods was the river Bremi that goes through the community, and the shallow structure of the river also cause the puddles however, pumping out the water has not always been effective, especially when water hyacinth populate the river too much.	•Direct observation on the areas of Tirto Community effected by tidal flood disaster. •Tirto community's support for Kemitraan's planned activities for the community.
4	**Degayu Community** – 21/04/2018	•Follow up to the previous Focus Group Discussion on Potential Adaptation Actions •Assessing potential adaptation actions that can be implemented in the community based on their issue and needs	•The existing geo-tube had been able to protect the area to some extent, but its height considered as not sufficient enough for an effective protection. At the moment, the construction had been destroyed due to the construction and operation of small scale shipyard behind the geo-tube line •Vennamei shrimp is highly potential to be cultivated in Degayu, but the community needs capital and technical support for this. Most of the successful shrimp farmer in Degayu are supported by investor •Traditional shrimp pond which operated without investor often experience failed harvesting due to improper water and feedstock management (lack of financial and technical capacity to properly managed the pond) •Groundwater extraction believed as contributing to the severity of coastal flooding impact in Pekalongan City •Community empowerment is important, for instance by implementing community-based eduecotourism in Degayu	•Adaptation action in Degayu will be focusing on structural shoreline protection and alternative livelihood with adequate technical and financial support
5	**Kandang Panjang Community** – 21/04/2018	•Follow up to the previous Focus Group Discussion on Potential Adaptation Actions •Assessing potential adaptation actions that can be implemented in the community based on their issue and needs	•Since their productive land is mostly affected by coastal floding, some Kandang Panjang community now have unsteady jobs. They get additional income by catching fish and crab in their free time •Some Kandang Panjang community have joined as Community	•Fisheries sector remains the primary economic activity option for Kandang Panjang community

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
			Supervising Group member that work in collaboration with city government in operating Mangrove Information Center (eduecotourism managed by city government) •Crab fattening activities are the most desired livelihood for the community, however the said activity need large capital	
6	**Fisheries Product Collector in Bandengan Community –** 22/04/2018 Interview with Women fisheries product collector	•Assess supply chain for fisheries product and potential for collaboration	•Receive product from 4 communities •Crab is the largest commodity, while other product that also collected are shrimp and different species of fish •Most of the commodity are sold to large scale collector in other cities (majority to Pemalang, and then Batang and Jakarta in that order). Most of the large scale collector then sold the product to Jakarta. Locally sold commodity is mostly shrimp •Provide crab seed for crab fattening and willing to buy back the large products	• Potential for collaboration in crab fattening activities if desired by Kandang Panjang community
7	**Fisheries Product Collector in Degayu Community –** 22/04/2018 Man Fisheries product collector	•Assess supply chain for fisheries product and potential for collaboration	•Receive product from Degayu and Batang Regency •Vennamei shrimp is the largest commodity, while other product that also collected (at a small scale) are different species of fish •Most of the commodities are sold to large scale collector in other cities (majority to Pemalang, and Batang). The large collector often sold the product to Jakarta. •Did not supply locally	•
8	**Bandengan Community –** 24/04/2018 Interview with women groups	• Follow up to the previous Focus Group Discussion on Potential Adaptation Actions •Assessing potential adaptation actions that can be implemented in the community based on their issue and needs	•Majority of Bandengan community works as labour, only around 10% works as fishermen since most of their productive land are permanently inundated or cannot cope with the strong current •Historically, Bandengan community works as farmer instead of fishermen, hence they would prefer to be equipped with agricultural land instead of pond •Women groups are highly interested in processing fisheries product, but they impeded by capital issue and low technical information •Despite the need for physical intervention to address coastal flooding issue, the community also need emotional assistance •Bandengan community also face water scarcity issue since clean water piping network in the area is either broken or submerged	• Actions in Bandengan community will be focusing in increasing community's adaptive capacity by providing alternative livelihood and addressing water and sanitation issue
9	**Secretary of Bandengan Vilalge –** 24/04/2018 Interview with Bandengan women formal leader	•Follow up to the previous Focus Group Discussion on Potential Adaptation Actions •Assessing potential adaptation actions that can be implemented in the community based on their issue and needs	•Fisheries is not the main economic sector in Bandengan. Most of the fisheries product are Bandeng and seaweed •Despite their housing area are permanently inundated, relocation or resettlement is out of question. City government have provided City-owned Apartment, but only the young family who are willing to move there. Hence the city and community officials are mostly focusing on reconstruction of low quality housing	•Actions in Bandengan community will be focusing in increasing community's adaptive capacity by providing alternative livelihood and addressing water and sanitation issue •Resettlement will not be considered in the program

The proposed program is categorized as **"Category B"** with potential risks that are minor, small scale and easily mitigated by implementing mitigation measures. Table below summarizes the potential environmental and social risks that could arise from the program and the corresponding mitigation measures. As part of the risk management process, an Environmental and Social Risk Management Plan has been developed for the program and can be found in Annex 1 of the proposal.

AF ESP	Type of Risks	Risks Description	Mitigation Measures
Compliance with the Law	Environment	Disruption of physical environment from mobilization, construction and implementation of adaptation actions (geo-tube, mangrove restoration, sanitation facilities, aquaculture farming and eco-tourism site)	• Prepare the required environmental documents prior to the implementation of adaptation actions, where this environmental document will be in coherent with the program's ESMP • The required environmental documents are: o Individual and communal sanitation facilities (latrine): SPPL document o Aquaculture: UKL-UPL document o Geo-tube construction: UKL-UPL document o Eco-tourism: UKL-UPL document • Prepare the necessary environmental management plan for each activity listed in ESMP. • Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex 1). PMU will ensure that the monitoring and management plan is being adhered
Access and equity	Social	Social conflict arising from selection of community member that will be the implementer of adaptation actions and alternative livelihood	o Conduct stakeholders mapping during project planning stage as the basis for determining the appropriate project implementer, allocating fair roles and responsibilities among stakeholders, and selecting the appropriate activities site location (including knowledge board location) that could benefit wider community o Involving community working groups (which members are community representative) in the selection process o Select working group member that could really represent the voice and interest of all layers of community and city stakeholder
Marginalized and Vulnerable Groups	Social	Social conflict arising from selection of priority activities site and design which could raise envy from other community member that will not directly exposed to the program	• Conduct social impact assessment and develop the corresponding management plan on potential adaptation actions during prioritization process. This impact assessment and management plan will be in coherent with Program's ESMP • Social impact assessment and management plan for the adaptation options will be integrated under UKL-UPL and SPPL document and will be submitted to the city agency. • Put priority on pro-poor adaptation actions (action that could benefit those who have the least economic adaptive capacity but has a high exposure to climate risk) Adaptation action design (the site location and structural design) will take account of the needs and suitability for elderly, children groups, and disable groups • Develop visibility materials that outlines background from the selection and communicate the materials to wider community • Involving community working groups (which members are community representative) in the selection process • Select working group member that could really represent the voice and interest of all layers of community and city stakeholder
Human Rights	No risks identified		
Gender Equity and Women's Empowerment	No risks identified		
Core Labour Rights	No risks identified		
Indigenous People	No risks identified		

Involuntary Resettlement	No risks identified		
Protection of Natural Habitats	Environmental	Minor natural habitat disruption from aquaculture preparation activity, mangrove restoration process, as well as mobilization and construction process of geo-tube, eco-tourism site and communal sanitation facilities. For instance: • the impact of geo-tube construction process to the existing surrounding ecosystem • waste generation and water pollution from ecotourism site development and operational activities • aquaculture farming preparation process	• Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are: o Individual and communal sanitation facilities (latrine): SPPL document o Aquaculture: UKL-UPL document o Geo-tube construction: UKL-UPL document o Eco-tourism: UKL-UPL document o The environmental document will be in coherent with the program's ESMP • Prepare the necessary environmental management plan for each activity listed in ESMP. • Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex 1) • Activities conducted in the natural habitat area will follow Law 32 Year 2009 on Environmental Protection and Management and its derivative regulations, particularly section on natural habitat protection • Build temporary sediment trap during geo-tube construction process as well as ecotourism site development to control abrasion and sedimentation within mangrove ecosystem • Develop sound and applicable environmental procedures that comply with local regulation for ecotourism site, including waste management plan • Ensure that aquaculture farming will only be done in existing aquaculture area or idle aquaculture land so that the activities will not open a new area and disrupt the existing natural habitat
Conservation of Biological Diversity	Environmental	Minor environmental and ecological disruption from geo-tube. communal sanitation facilities and ecotourism site construction process	• Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are: o Individual and communal sanitation facilities (latrine): SPPL document o Geo-tube construction: UKL-UPL document o Eco-tourism: UKL-UPL document • The environmental document will be in coherent with the program's ESMP • Prepare the necessary environmental management plan for each activity listed in ESMP. • Mitigation measures for the impacts are stated in the Environmental and Social Management Plan (Annex 1). • The program will ensure compliance to applicable laws and regulations on biodiversity conservation, including Ministry of Marine and Fisheries Regulation No. 16 Year 2008 on Management Plan of Coastal Area and Small Islands and other • Build temporary sediment trap during structural coastal defence construction process as well as ecotourism site development to control abrasion and sedimentation within mangrove ecosystem • Develop sound and applicable environmental procedures that comply with local regulation for ecotourism site, including waste management plan
	Social	The targeted mangrove restoration site might be privately owned, and there is a potential that the land owner reluctant to 'donate 'their land for the activity	• Identification of land-ownership in the targeted mangrove restoration site. Involvement of the private land owners in relevant workshops at community
	Environmental	Minor environmental and ecological disruption from alteration of resource management including:	• Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are: o Aquaculture: UKL-UPL document. The document content will include the potential impact from the

		• Introduction of new fisheries species to the body of water • Introduction of new mangrove species to the environment •	introduction of Bandeng fish to a new environment and how it will interact. • The environmental document will be in coherent with the program's ESMP • Prepare the necessary environmental management plan for each activity listed in ESMP, including potential impact from the introduction of new mangrove species to the environment during mangrove restoration process. • The program will ensure compliance to applicable laws and regulations on biodiversity conservation, including Ministry of Marine and Fisheries Regulation No. 16 Year 2008 on Management Plan of Coastal Area and Small Islands and other • Primary assessment to see how the new marine species will survive and interact in a new environment (Bandeng and Vennamei shrimp) • Assess the most appropriate location to introduce the new mangrove species •
Climate Change	No risks identified		
Pollution Prevention and Resource Efficiency	Environmental	• Water pollution from the construction and implementation of geo-tube, eco-tourism site, and mangrove belt	• Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are: o Geo-tube construction: UKL-UPL document o Eco-tourism: UKL-UPL document • Prepare the necessary environmental management plan for each activity listed in ESMP, including potential impact from mangrove restoration process • Build temporary sediment and oil trap during geo-tubeg construction process, and ecotourism site development to control influent of oil, and also abrasion and sedimentation
	Environmental	Water pollution from aquaculture farming practices, including: • Potential for overpopulation within the aquaculture farm • By-product from aquaculture farming • Sedimentation (increased concentration of organic matter) due to accumulation of fish feed in aquaculture farm • Traditional harvesting method that allows aquaculture water flows into drainage system • Non-existent aeration that allows sedimentation accumulation at the bottom of the pond	• Submit UKL-UPL document for aquaculture farming to obtain environmental permit for its implementation • Educate the community on environmentally friendly aquaculture farming method/practices, including efficient use of feed and proper harvesting technique • Equipped the farm with small windmill that allow aeration in the pond • Create sediment trap that is suitable for the farm • Develop environmental procedures for aquaculture farming activities, including water and waste management plan • Regular monitoring of surface water quality inside the farm and in drainage system connected to the farm
	Environmental	Water pollution due to waste generation from ecotourism activities	• Implement UKL-UPL of the eco-tourism site and submit its monitoring report to the CIyt Agency every 6 months • Develop sound and applicable environmental procedures that comply with local regulation for ecotourism site, including waste management plan • Coordinate with Cleanliness Agency of Pekalongan City in the waste management activities • As a community-based ecotourism, involve the community in the waste management process, including train them to be able to utilize the waste as additional income; either by creating added value to the waste (compost, recycling) from the waste or collect waste that has monetary value (plastic, paper, metal)
	Environmental	Water pollution from the construction and effluent of sanitation facilities	• Submit SPPL document for communal sanitation facilities to obtain environmental permit for its implementation

			• Design the sanitation facilities in accordance with SNI 03-2398-2002 and SNI 03-2399-2002 • Rigorous assessment on the most appropriate sanitation facilities for the area's characteristics (including geographical and soil characteristics), to minimize potential risks of pollution • Regular water quality monitoring on the body of water where the sanitation facilities effluent is being conveyed • Together with the community develop utilization and maintenance procedure for the facilities, where the said procedures will be undertaken by them • Educate the community on good sanitation behaviour
Public Health	No risks identified		
Physical and Cultural Heritage	No risks identified		
Land and Soil Conservation	Environmental	Soil pollution from the construction of geo-tube and eco-tourism site development	• Submitting the relevant environmental document for each adaptation action to obtain environmental permit for its implementation. The needed documents are o Geo-tube construction: UKL-UPL document o Eco-tourism: UKL-UPL document • The environmental document will be coherent with the program's ESMP • Prepare the necessary environmental management plan for each activity listed in ESMP. • Build temporary sediment and oil trap during geo-tube construction process, sanitation facilities construction process, as well as ecotourism site development to control influent of oil, and also abrasion and sedimentation
	Environmental	Soil pollution from sanitation facilities use and construction	• Submit SPPL document for communal sanitation facilities to obtain environmental permit for its implementation • Design the sanitation facilities in accordance with SNI 03-2398-2002 and SNI 03-2399-2002 • Rigorous assessment on the most appropriate sanitation facilities for the area's characteristics (including geographical and soil characteristics), to minimize potential risks of pollution • Regular water quality monitoring on the body of water where the sanitation facilities effluent is being conveyed • Together with the community develop utilization and maintenance procedure for the facilities, where the said procedures will be undertaken by them • Water tight construction for the sanitation facilities (particularly the waste water management installation) to minimize potential leakage to the soil
		Soil pollution due to waste generation from ecotourism activities	• Implement UKL-UPL of the eco-tourism site and submit its monitoring report to the Clyt Agency every 6 months • Develop sound and applicable environmental procedures that comply with local regulation for ecotourism site, including waste management plan • Coordinate with Cleanliness Agency of Pekalongan City in the waste management activities • As a community-based ecotourism, involve the community in the waste management process, including train them to be able to utilize the waste as additional income; either by creating added value to the waste (compost, recycling) from the waste or collect waste that has monetary value (plastic, paper, metal)