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:	**Safekeeping-Surviving-Sustaining towards Resilience: 3S Approach to Build 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:	**5,972,670** (in U.S Dollars Equivalent)

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.

Climate change is one of the significant factors contributing to severe flooding of Pekalongan City. There are many factors – human and natural – both are intertwined.
Thus we propose three pillars: 1. Adaptive Capacity [survival - sensing and knowing the problem collectively and largely, aligning with on-going government project/programme], 2. Ecological restoration [survival - social-ecological approach], 3. Sustainability [sustaining]

1. Project / Programme Background and Context:

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.

[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*

- 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 sustainability. The risks are 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 lives 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.

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].

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

[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)*
[9] Pekalongan Bureau of Statistics, 2015

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.

Figure 1. Map of Indonesia

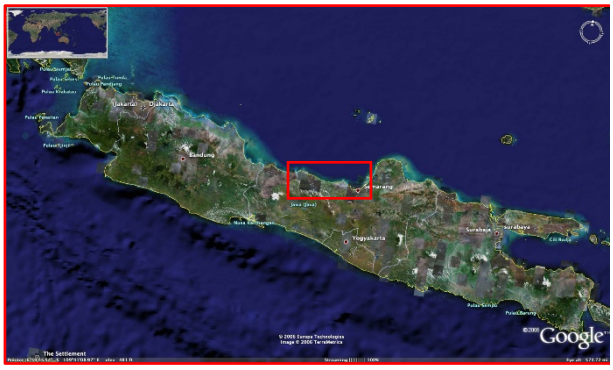


Figure 2. Map of Java Island

Figure 3. North coastal area of Central Java Province

[10] Pekalongan Bureau of Statistics, 2015

THE PROBLEM

1. From Creative City To urban vulnerability

Figure 4. Severe Flooding in Pekalongan City

7. Pekalongan City has been recognized by UNESCO (United Nations Educational, Scientific and Cultural Organization) as part of Creative City networks in 1st December 2015. Pekalongan City is well-known in Indonesia and beyond as the city of "Batik", the process of traditionally dyeing fabric, performed on cotton and silk using a resist technique, also recognized as World Intangible Cultural Heritage by UNESCO in 2nd October 2009.

8. 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.

2. Climate Change Projection

9. **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[11]. The impact of coastal flooding will not only affect coastal-related sector such as fishery and

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

tourism, but might also creating domino effect to other development sectors; posing an imminent threat to the sustainability of the city.

Figure 5. Projected Inundation in Pekalongan City Coastal Area in 100 Years Period (Pekalongan City Government, 2011)

10. **The same study also shows how the precipitation pattern and level in Pekalongan City have changed 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[12].

11. 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[13].

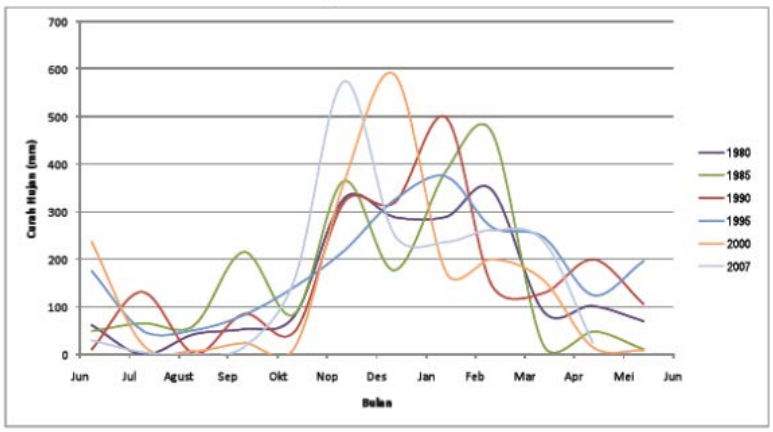


Figure 6. Precipitation Pattern in Pekalongan City in 1980-2007 Period (Pekalongan City Government, 2011)

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

3. Expected Impacts

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[14], 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[15]. 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-ponds) and adapting to recurring inundation in their neighbourhood. Overexploitation of groundwater further 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)[16].

4. Flood risks and vulnerability in Pekalongan

12. 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.

13. 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[17].**

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

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

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 Index. Based on the sensitivity assessment, being one of the major industries in Pekalongan,

[14] Marfai et.al., 2013, *Spatial Modelling of Coastal Flooding Inundation Based on Climate Scenario and Its Impact on Pekalongan Coastal Area*
[15] DKP, 2008 in Pekalongan City Government, 2011, *Pekalongan City Risk Profile*
[16] Akhmadi et.al., 2012
[17] Akhmadi et.al., 2012

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[18].

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

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

15. **Pekalongan Barat has the lowest Adaptive Capacity Index of 0.0010 which indicates the area is the most adaptive amongst other sub-districts[19].** For adaptive capacity index, the calculation take account of aspects that are highly needed for dealing with and recovering from climate-related disaster events, comprising of infrastructure, technology, health facilities, institutions and economic conditions.

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

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

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.

[18] Akhmadi et.al., 2012
[19] Akhmadi et.al., 2012

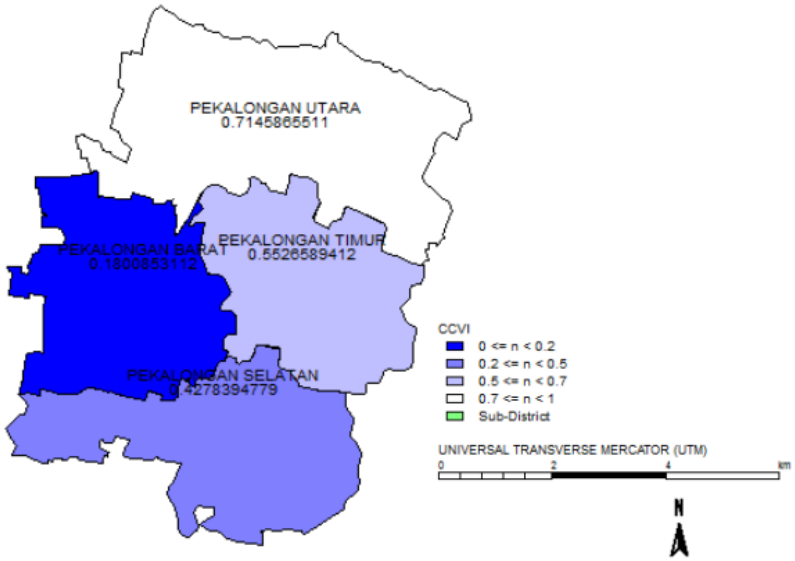


Figure 7. Climate Change Vulnerability Index of Pekalongan City (SMERU, 2012)

Economic Context

17. Pekalongan City's 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 GRDP contributor, it is fair to conclude 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 GRDP contribution in 2014 with over IDR 400 million of income, and attracts 4.65% of the population to work in the said sector[20].

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[21]. 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[22].

[20] Pekalongan Bureau of Statistics, 2015
[21] 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*
[22] Bintari, 2016, *Loss and Damage – Climate Change Impact in Coastal Area of Pekalongan City*

Figure 8. Pekalongan City Coastal Flooding-prone Map Year 2016 (Pekalongan City Government, 2017)

Social Context

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 municipal government of Pekalongan City to address this issue; both conducted self-sufficiently as well as with the assistance from third party. Self-sufficiently, the municipal 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 programme 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 programme expected that the city could develop the corresponding adaptation activities.

Environmental Context

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 had been able to provide the municipal government with sound input and recommendation particularly in providing climate perspective when discussing development issue. However, one glaring weakness of the group is that 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 programme; 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 programme 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 programme is expected to set an example on how to synchronize adaptation plan and programme 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.

25. **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 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 of Pekalongan City to declare state of emergency due to coastal flooding[23].

26. The inundated household has no access to adequate sanitation facilities since their latrine is also inundated. The municipal government of Pekalongan City has limited budget to provide

[23] Marfai et.al., 2013, *Spatial Modelling of Coastal Flooding Inundation Based on Climate Scenario and Its Impact on Pekalongan Coastal Area*

this access to the affected community, which then prompting open defecation practices (often to water body) in some communities. This unhygienic practices coupled with high frequency of coastal flooding have increased the potential of water-borne disease; leaving the community susceptible to health issue.

27. 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 programme achievement. The design of the proposed programme had considered this potential barrier by developing City Climate Risk Assessment and the subsequent action plan early in programme implementation; while also involving BAPPEDA as the leading sector for development plan within the programme. 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, municipal government officials that are involved in the proposal development had understood the connection between land subsidence and coastal flooding.

PROJECT APPROACH

28. Adaptation measures taken in Pekalongan City to address climate change issue are somewhat lacking in evaluation that derives from the non-existent of a comprehensive climate risk assessment. A such-complex issue such 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.

29. It is this gap that this proposed programme 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 programme 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 programme.

30. This programme 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.

31. This approach will be taken at **4 governance level; starting from community (*kelurahan*) 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.**

32. 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.

33. For the purpose of this programme, 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.

34. Furthermore, a **Participatory Climate Risk Assessment will also be applied**. The initial step of the programme 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.

35. 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 programme **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].

36. Pekalongan Utara constitutes of 7 *kelurahan* (an administrative area similar to Kampongs); in which *kelurahan* Panjang Wetan 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 programme will also include *kelurahan* 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 programme are categorized as highly prone to coastal flooding**.

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

37. Seeing these risks faced by the area, resilience building process in this proposed programme 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.

38. In view of this multifaceted issue, the proposed programme framework will be instilled by **multidisciplinary and iterative process**, with a series of assessment, study and activities to be derived from. Accordingly, the programme 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.

TARGET COMMUNITIES

Overall, the target communities within the municipality of Pekalongan City consist of 8 kelurahan:

Area 1 – Degayu
Area 2 – Krapyak
Area 3 – Panjang Wetan
Area 4 – Panjang Baru
Area 5 – Kandang Panjang
Area 6 – Padukuhan Kraton
Area 7 – Bandengan, and
Area 8 – Pasirkraton Kramat

PROJECT OBJECTIVES

Goals

39. 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. This will be achieved through three important actions namely: (1) safekeeping actions, (2) surviving actions and (3) sustaining actions with the objectives as follows:

Objectives

40. **Restoring natural protection** to increase resilience from flood hazards and risk exposure and vulnerability by restoring mangrove ecosystem and enhancing coastal protection where there is still gap. – [Safekeeping Actions].

41. **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**. – [Surviving Actions]
42. **Involving and engaging local government and city stakeholders in developing Local Climate Adaptation Action Plan** and **implement climate smart actions**. The proposed programme will conduct capacity building activities for local government and city stakeholders to develop the Plan and to implement climate smart actions. – [Surviving Actions].
43. **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. – [Sustaining Actions]
44. **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. [Sustaining Actions]

PROBLEM TREE PEKALONGAN CITY

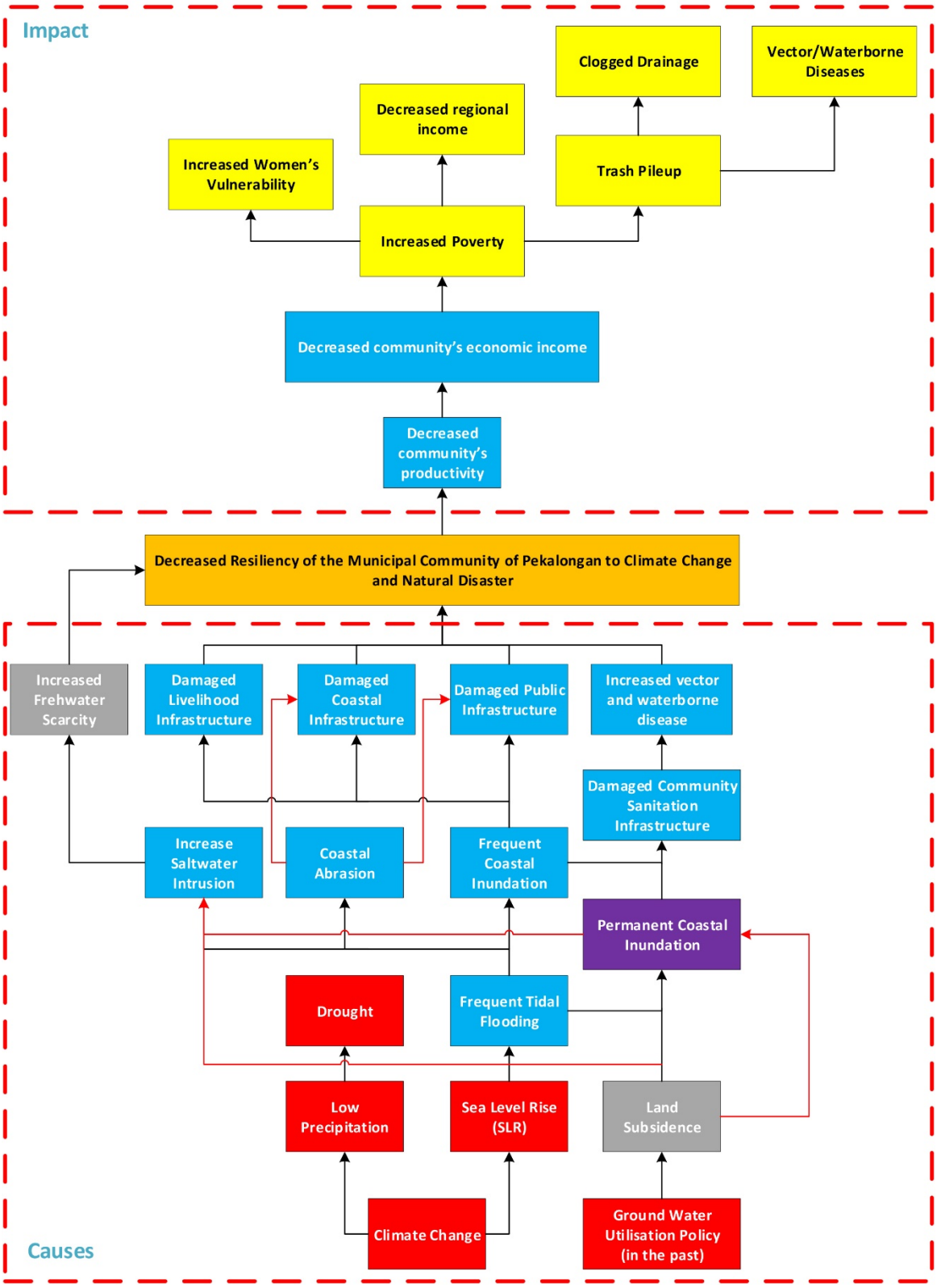


Figure 9. Problem Tree Pekalongan

Figure 10. 3S for Resilience Approach: Safekeeping-Surviving-Sustaining

PROJECT COMPONENT AND FINANCING

Project/Programme Components	Expected Outputs	Expected Outcomes	Amount (US$)
SAFEKEEPING			
1. Enhancing protection along the coastal line of Pekalongan City	1.1.1. Multilevel stakeholder engagement in the establishment of 6 kilometres of Mangrove Ecosystem	1.2. Increased coastal community resilience in Pekalongan City	**1,322,073**
	1.2.1. Construction of 300 m parapet at Slamaran Beach in kelurahan Degayu		
	1.2.2. Coastal embankment (geo-		

Project/Programme Components	Expected Outputs	Expected Outcomes	Amount (US$)
	tube/sand trap) at Kandang Panjang		
SURVIVING			
2. Enhancing coastal community capacity in developing and implementing Local Climate Change Adaptation Action Plan (RAD API), climate change information system, Climate Smart Initiative	2.1.1. Pekalongan City Climate Working Group reactivated	2.1. 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 village development plan	**290,967**
	2.1.2. Climate working group established and functioning in each of the 8 target *kelurahan*		
	2.1.3. Enhancing coastal community capacity in developing *kelurahan*'s information system and implementing the ensuing climate change adaptation actions		
	2.1.4. Engaging youth groups and building their capacity to become Agents of Change in climate change adaptation actions of Pekalongan City		
	2.2.1 RAD API developed based on Pekalongan City Climate Risk Assessment and Climate Coastal Impact	2.2. Enhanced capacity of local government and other city stakeholders' in developing climate risk assessment and utilizing the	**254,003**

Project/Programme Components	Expected Outputs	Expected Outcomes	Amount (US$)
	2.2.2 Strategy to integrate CCA into local government planning processes (annual work plan or mid-term development plan of city) is developed	results to develop local climate change adaptation action plan (RAD API)	
	2.3.1 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 programme across coastal villages/ upstream and downstream villages); and also evaluated for future reference	2.3. 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	**52,425**
	2.4.1 Climate change training and knowledge sharing conducted	2.4. Established knowledge management platform at city-level	**232,213**
	2.4.2 Knowledge product, Advocacy materials (i.e. lessons learned, research paper, newsletter)		

Project/Programme Components	Expected Outputs	Expected Outcomes	Amount (US$)
	published and shared		
	2.4.3 Local knowledge sharing platform established		
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 foster better climate-related policy on climate financing and bottom-up planning	3.1.1. Enhanced provincial capacity to develop RAD API	3.1. Enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan	**270,696**
	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		
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	**309,164**
	4.1.2. Strengthened vertical		

Project/Programme Components	Expected Outputs	Expected Outcomes	Amount (US$)
	coordination and collaboration between national and local government in climate adaptation context		
SUSTAINING			
5. Improving community's resilience through initiation of alternative livelihood and improvement of sanitation facility	5.1.1. Aquafarming in mangrove ecosystem developed and implemented by community	5.1. Increased economic income and improved community's health in 8 target *kelurahan* of Pekalongan City	**2,594,116**
	5.1.2. Mangrove ecotourism improved and involving wider participation of affected coastal community of Pekalongan City		
	5.1.3. Improved cultural economy through application of ecological batik using mangrove based colouring product		
	5.1.4. Improved food security through the application of urban farming as alternative to conventional agriculture practices		

Project/Programme Components	Expected Outputs	Expected Outcomes	Amount (US$)
	5.1.5. Developed circular economy through initiation integrated waste management system and processing		
	5.1.6. Improved sanitation facility in 8 target *kelurahan* to mitigate risks of waterborne disease		
6. Total Project/Programme Cost			**5,325,386**
7. Project/Programme Execution cost and ME cost Improved sanitation facility in 8 target *kelurahan* for better and healthier living condition			**559,018**
8. Project/Programme Cycle Management Fee charged by the Implementing Entity			**88,266**
Amount of Financing Requested			**5,972,670**

Projected Calendar

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.

45. **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 a large number of various 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.

46. This programme is specifically **designed to *Building Coastal City Resilience to Climate Change Impacts and Natural Disasters*** through 3S Actions: [safekeeping-surviving-sustaining], with a **particular focus on 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.

47. Another **key** to **effective adaptation** is that 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 programme in developing an effective local adaptation action plan.

48. **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 programme 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/*Kelurahan*). Following this approach, activities under this project will then be designed and implemented at four governance level (National, Province, City and Community/*Kelurahan*).

49. 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 of this programme. Participatory approach is not only going to be implemented during programme implementation phase, but also in programme 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.

50. The interventions approach to different levels 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 to climate change through local livelihood and economic improvement. This proposed programme 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 the 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.

51. **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.

52. **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 programme timeframe, but also in future time.

53. 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 programme can be further shared after the programme is ended, not only relying from programme 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.

54. Adaptation actions that will be implemented at city level will be focusing on:
    (1). **Enhancing the resilience of main productive sectors** through (i) development of aquafarming in mangrove ecosystem as an alternative income generation for the affected community (ii) construction of coastal embankment with geo-tube system. Aside from financial resources, one of the biggest challenges for aquafarming implementation in the targeted area is coastal and tidal flooding. 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 help protecting the mangrove plants in its early development years, in which the mangrove plants are still vulnerable to strong tidal wave. Moreover, the built embankment will also 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,
    (3). **Developing and promoting community-based ecotourism**. Despite its nature will be community-based, this ecotourism activity will fall 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,

(4). **Improving Pekalongan City's cultural economy** into more resilient and environmentally friendly production method through the application of mangrove based colouring material. This way, not only innovative production method is developed, but another economic opportunity through the production and sales of the natural batik colour can be developed,

(5). **Increasing food security** through the introduction of urban farming that offers affected local community with possibility to enhance its food source to meet their daily needs of nutrition on the one hand, and to generate income on the other hand,

(6). **Creating income opportunity through support to the Municipal Government of Pekalongan City** with an integrated waste processing facilities that separates organic and inorganic waste, offering income opportunity through organic fertilizers and recycling process of inorganic waste. This way, the Municipal Government of Pekalongan City can release affected community from monthly waste disposal fee, thus creating cleaner and healthier environment.

55. Additionally, **knowledge management platform will be established at city level**; enabling information sharing between stakeholders and creating a transparent programme 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.**

56. Activities at **provincial level** are more **focus in assisting the provincial team** to **develop climate risk assessment** with community or *kelurahan* level as the smallest level of analysis, in which the assessment results will be the **basis to develop RAD API**. The province 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 at city, province and national level.** 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 provincial 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.

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 Forestry (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 the risk index of their administrative area 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 programme will support the 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'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 programme 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 Programme Implementation at 4 Governance Level

59. **Combination of bottom-up and top-down approach will be implemented within the proposed programme** to ensure a cohesive climate adaptation plan/programme/policy and its implementation at all governance level. In general, the programme will focus on 4 aspects, which are capacity development, adaptation action, knowledge management and policy advocacy. Figure 11 below shows the interconnection between actions at different governance level within the programme, with brief information on each aspect.

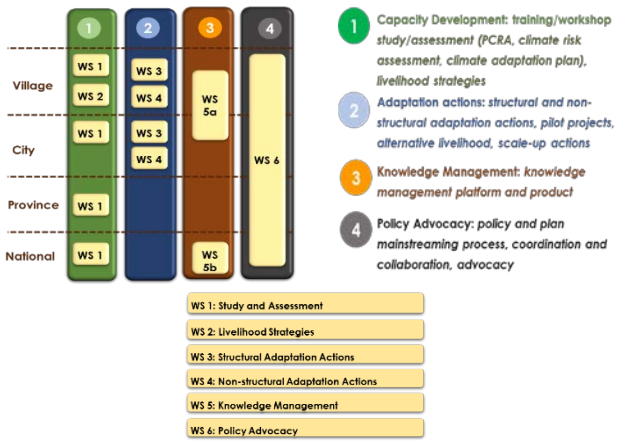
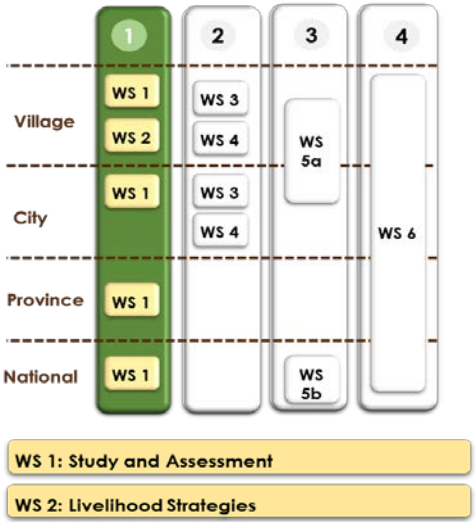


Figure 11. Interconnection of 4 Aspects at 4 Governance Level

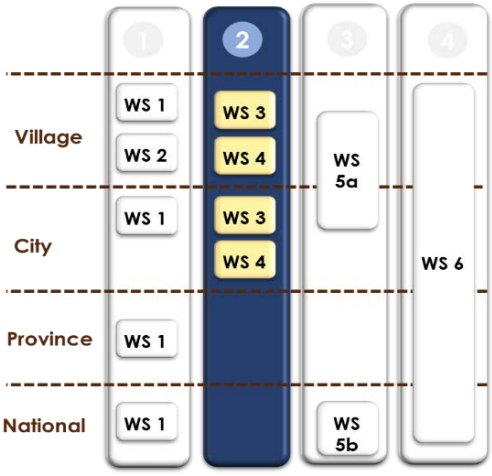
Capacity Development

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 (*kelurahan)* 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 municipal government of Pekalongan City for broader replication that complemented with financing scheme.



Adaptation Actions

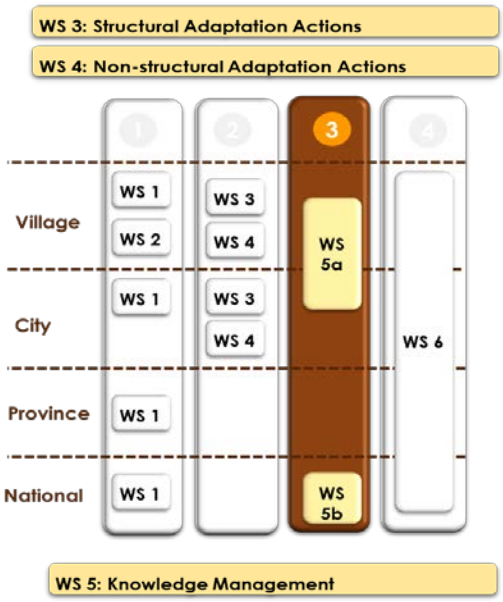
61. **Focusing in implementing physical and non-physical interventions** that are expected to assist Pekalongan City in reducing coastal-related climate risk. Considering the scope of programme implementation as well as the fact that local autonomy in Indonesia falls under city government (instead of province/state government) and its lower governance level, hence adaptation actions for this proposed programme 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

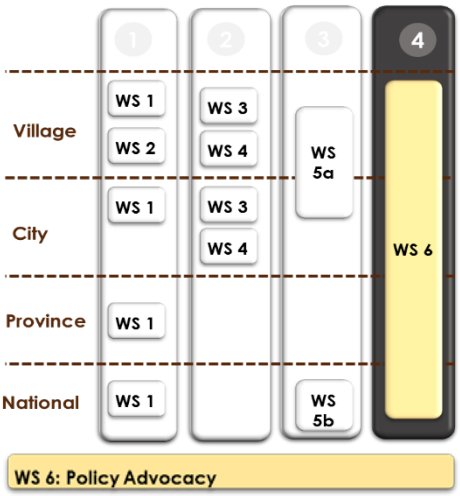
62. **Focusing in platform development for information dissemination and knowledge products development**. This aspect is aiming to ensure an effective horizontal and vertical information sharing on climate-related issue. For the purpose of this programme, knowledge management aspect is embedded in each 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 allows 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 (*kelurahan*) 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/programme/policy**. Policy advocacy will be a continuous and interconnected activity at 4



governance level within this particular programme. 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 (*kelurahan*) 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 programme, figure 12 below shows the applicable National Development Planning System in Indonesia. In this figure, it can be seen that community (*kelurahan*) level is not formally included in the framework of National Development Planning System. However, 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 programme, **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.

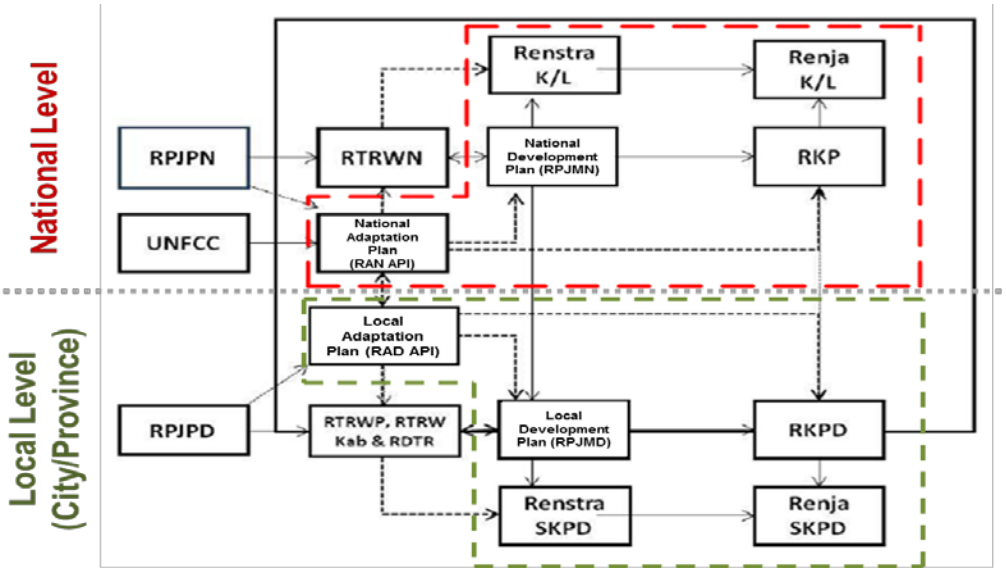


Figure 12. National Development Planning System

66. Meanwhile figure 13 shows how the local government (community (*kelurahan*), 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.

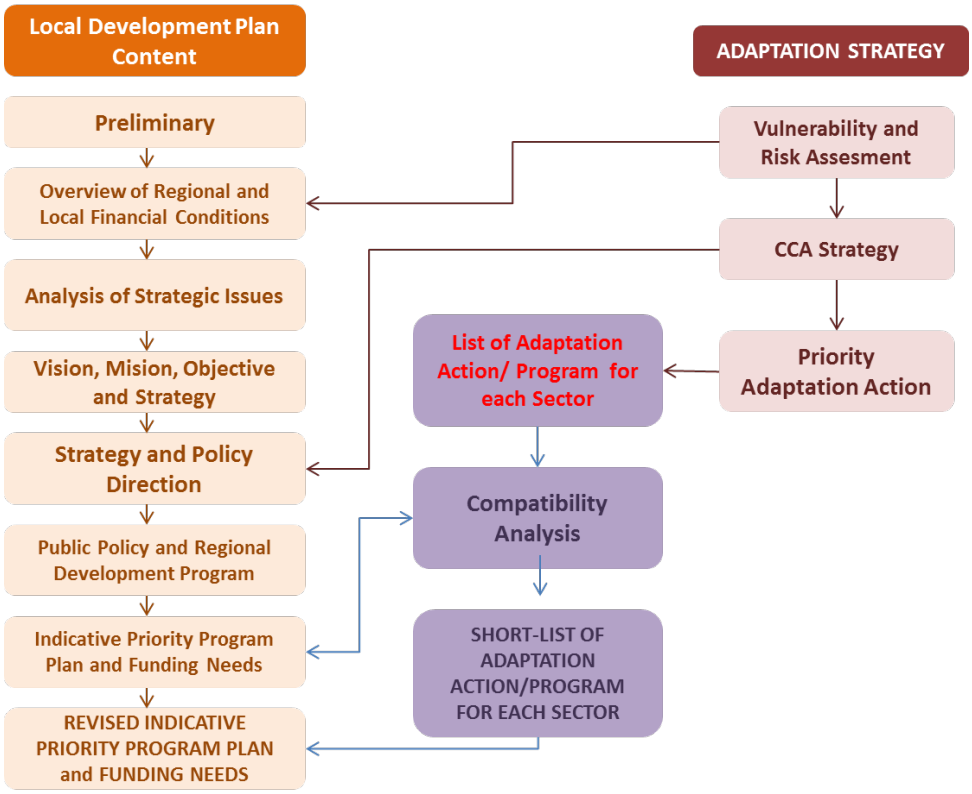


Figure 13. Potential Scheme to Integrate Climate Change Adaptation into Local Development Plan

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 programme implementation will generate economic, social and environmental benefits and contribute in improving gender equality, women's empowerment, engagement of youth groups 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 / programme 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 programme and from various actions mainstreaming gender at every stage of programme 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 and engagement of youth. In general, benefits that can be obtained from this

programme including protection of the livelihood assets of coastal communities, sustainability of ecotourism and reducing impact from waterborne disease.

Tidal flood, abrasion and siltation of rivers

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

Causes	Impact
- Many development activities don't comply with the "AMDAL" [Environmental Impact Assessment] - Lots of artesian excavation - Many companies make water drill wells - 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	- Damaged roads - The difficulties of the transportation - Daily activities are disturbed (ponds) - Home industry is paralyzed - 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) - Disrupted sanitation - Decreasing groundwater level - Disrupted education (children don't want to go to school, the school/study location were moved) - Increasing living costs (repairing motorbikes, houses, etc) - Damaged/destroyed properties - Need more energy and people to clean the house affected by tidal flood - Disappearing beach (loss of tourist spot/recreation area) - Plants died - Loss of children's playground (open land is flooded) - Domestic violence

Community proposal/suggestions

69. From a series of programme 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 construction of Parapet (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 the *kelurahan* of Panjang Wetan, 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. Improvement of public channels and household channels in the Padukuhan Kraton ex-Pabean community
11. Normalization of the channel in Pasir Kraton Kramat Community because the sediment is already high.
12. Repair of 'MCK' in Pasir Sari, Kelurahan Pasir Kraton Kramat
13. Elevation of the road in Kramat Sari ('angkatan 66'). It is because the water overflows into the area.
14. 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).
15. Training: selling, convection and sewing, food (processed fish such as shredded meat), dressing
16. Training on waste recycling to reduce waste generation while increasing income
17. Socialization regarding waste management
18. Optimization of waste banks, currently many garbage banks are flooded due to tidal flood

Barriers / challenges faced by women in programme participation:

70. To ensure women's participation in the entire programme 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 tidal flood, from waking up until they sleep at night.
    2. Women must do extra work caused by the tidal flood. Among others: cleaning the house (sweeping, mopping), clearing household items, maintaining and saving children, helping to provide consumption for those cleaning the environment after the tidal flood.
    3. Female rest periods (including sleep) are much less. 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 programmes.
    4. Meeting activities in the community are often held during the evening, but as mothers it is rather difficult to leave children at this particular time.
    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, the proposal is usually 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 amount 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 prioritized.

71. The programme framework is formed in a way that it ensures **broader Pekalongan City community could reap the benefit from programme implementation**. At community level, the programme 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 *kelurahan*, 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 programme **will ensure the fulfilment of representatives of both women and men in consultation at all stages of the project / programme 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 at *kelurahan* level (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 programme tries to **provide a broader impact** by not only **targeting direct beneficiaries** in the forms of people that are involved in target implementation sites, but **also indirect beneficiaries** which are the wider Pekalongan City community through advocating and fostering a climate-resilient development plan and action plan. The programme 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.

Capacity Building

74. **Capacity development** activity at **community level** in the 8 target *kelurahan* 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 to 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).

75. Further, this programme will also **provide social benefit to the local government, both the Municipal Government of Pekalongan City and the Provincial Government of Central Java,** 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 programme is expected to remedy these previous practices, fostering a better and more synergized planning, and also a more effective and on-target resource allocation.

76. 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 programme since they will receive technical training that will be useful for their future operational activity in the area.

Advocacy

77. 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 opportunity for Pekalongan City to tap funding access from the national government budget. The municipal government of Pekalongan City 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

78. **Potential adaptation actions at community level** in the target *kelurahan* 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 benefits are:

- **Extending the existing mangrove belt** to increase the resilience of the coastline community with natural and local-based structure. Intervention will be done in the targeted communities that are prone to coastal flooding, mainly the community of Panjang Wetan, Kandang Panjang and Bandengan. 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 these environmental benefits would in turn create economic benefit for the coastal community by increasing fish population from better water quality and provision of complex food web that supports different kind of numerous commercial valuable species. Mangrove ecosystem is known as natural habitat of a number of fish species, among others milkfish, white snapper, mudskipper and mullet; shrimps and prawns, as well as fiddler crab and mud crab.

- **Installing 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 2 communal latrines (as pilot implementation) in each of the 8 targeted communities (total 16 communal latrines in total). To complement these latrines, 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 takes the ease of access and maintenance for the community into account, so that the facilities will be well maintained throughout the time and continually benefit the community. Consultation with the community has been conducted on the design of the communal latrine. Yayasan Bintari (Bintari Foundation) has built upon this consultation with the community a pilot communal latrine for the community of Bandengan (see Annex XX for the design and construction). This programme will continue the construction of the communal latrines in the target *kelurahan* based on the result of consultation conducted by, also in collaboration with, Yayasan Bintari including the provided design and construction.

Alternative Livelihood

79. **Alternative livelihood will be introduced** in this programme 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 programme and will be implemented at city level.

80. 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 for Pekalongan City 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.

81. Being the habitat for various kinds of species with commercial value, healthy and well conserved mangrove ecosystem can serve not only as alternative source of livelihood for capture fishermen but also a destination for recreational fishing, both for local community or for visiting tourists.

82. In addition to the above, the Municipal Government of Pekalongan City has raised the issue on waste management in Pekalongan City in the affected area of the 8 target *kelurahan*, especially in the community of Bandengan, Panjang Wetan and Kandang Panjang, which are severely affected by tidal flooding and in some part permanently inundated. The main issue is that the poverty has led to insufficient income of the community and they therefore struggle to even pay the monthly rate for waste disposal. This issue causes the community to pileup their trash, which than washed away once another coming flood. Existing drainage systems are often clogged because of this issue and thus exacerbates the condition of the flood.

83. The Municipal Government of Pekalongan City, led directly by the Mayor, is developing a solution of an integrated waste processing centre, in which the trash are separated and process to income generating waste products, such as organic fertilizer and recycled plastic. A study has been conducted to neighbouring city of Purwokerto that is successfully managing its waste, becoming a zero waste community, in which trash are collected and processed in rapid manner without having to end at the landfill. Innovative trash separating machine is applied here that can separate organic and light-weight non organic waste (plastic, paper) automatically. Based on the study, the government asked for assistance to develop the waste processing facility that can also offer job opportunity to the surrounding community. The idea was to build one facility in each *kelurahan*, but before that, a pilot needs to be established. The request is to assist with the establishment of this pilot facility in one of the target *kelurahan*, which is Krapyak.

84. With a total population of approx. 302,000, with around 90,000 people occupying the 8 target *kelurahan*, and between 0.4 to 0.6 kg of trash per person per day, the whole Pekalongan City produces up to 180 tons of domestic waste, of which around 54 tons come from the 8 target *kelurahan*. Based on the study, 1 kg organic fertilizer and 1kg recycled plastic can reach an average turnover of approx. IDR 35,000.- (around USD 2.5.-). 50 tons of domestic waste has therefore the value of IDR 1.75 billion (around US 125,000.-). Properly processed, domestic waste can therefore contribute quite significant to local economy.

85. From the abovementioned activities and benefits, the **vulnerable groups that will gain benefits** from this programme 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 programme 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, aquaculture farmers and batik entrepreneur

In 2014, 4.65% Pekalongan City population works in Agriculture, Forestry and Fishery sector and XX% are involved in the industry, mainly the batik industry. This percentage represents over 13,700 people. For these people whose works are highly influenced by climate variability, this programme will assist them in creating a livelihood strategy that is more resilient and sustainable; fostering a potential economic benefit for them. This programme provide not only opportunity for fishermen and aquaculture farmers to increase their income through capture fisheries, but also with innovative, ecological solution to the city's batik industry through the development of mangrove based natural batik colouring products.

Well maintained mangrove environment can be beneficial for small scale capture fishery, providing source of protein for local community and additional income through the marketing. A collaborative study conducted by Wetlands International and The Nature Conservancy (TNC) indicated an economic potential of up to USD 1394 /ha/year[26].

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

From approximately **109,011 population of 8 communities** that become the geographical **scope of the programme**, around **49,1% of the population are women**, **including women who act as the head of their household**. This programme 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 programme will build 16 communal latrines, 2 in each of the 8 target *kelurahan*.

Programme 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)	• 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

[26] Hutchinson, Spalding and zu Ermgassen, 2014, *The Role of Mangrove in Fisheries Enhancement*

	• 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	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 especially	• 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 • Rebuilding of coastal belt and protection against

	in poor urban communities	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.

86. As described under project objectives, the goal of the programme are to be achieved through safekeeping (component 1), surviving (component 2, 3 and 4) and sustaining (component 5) actions. Following table describe the cost-effectiveness of each component of this programme:

Expected result	Output	Cost-effectiveness (assessment of alternative approaches)
SAFE KEEPING		
1 Enhancing protection along the coastal line of Pekalongan City 1.1. Increased coastal community resilience in Pekalongan City	1.1.1. Multilevel stakeholder engagement in the establishment of 6 kilometres of Mangrove Ecosystem 1.1.2. Construction of 300 m parapet at Slamaran Beach in kelurahan Degayu 1.1.3. Coastal embankment	Building natural coastal protection with mangrove belt is not only cost effective but can also give economic benefit both for the community and for the City of Pekalongan. While serving as ecological tourist destination and/or recreation site, well maintained and conserved mangrove ecosystem also provides source of protein and offer income opportunity for the affected community through capture fishery.

	(geotube/sand trap) at Kandang Panjang	Reducing risk of flooding through parapet can be costly in construction, but in the long term, parapet can prevent damage to existing coastal livelihood facility. It will be even more costly to relocate community and create alternative livelihood at the same time in other area, especially if vast area of land are to be purchased for that purpose. Yet, not to mention the possibility of other environmental issues caused by the establishment of new settlement and the needs for economic development. Most part of the coastal area of Pekalongan City suffered under strong abrasion. The municipal government has therefore taken the initiative to construct permanent coastal embankment, such as parapet and dikes. Still, the construction cannot cover all section of the coast. Where there are still opening to the beach, abrasion threat. Mangrove belt can provide solution to reduce abration, but high tide and wave attack can easily damage new planted, young mangrove saplings. Here, geotube construction will be helpful to protect the young mangrove from being washed up by the wave, thus increase the possibility for the mangrove to grow. This approach appears to be cost effective and environmentally friendlier than construction of sea wall or dikes, especially that it provides economic benefit for the community and Pekalongan City once the mangrove belt is established as previously explained.
SURVIVING		

2 Enhancing coastal community capacity in developing and implementing Local Climate Change Adaptation Action Plan (RAD API), climate change information system, Climate Smart Initiative 2.1 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	2.1.1 Pekalongan City Climate Working Group reactivated 2.1.2 Climate working group established and functioning in each of the 8 target *kelurahan* 2.1.3 Enhancing coastal community capacity in developing the *kelurahan's* information system and implementing the ensuing climate change adaptation actions 2.1.4 Engaging youth groups and building their capacity to become Agents of Change in climate change adaptation actions of Pekalongan City	Project Management Unit (PMU) of this programme will work closely with Pekalongan city team in programme 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, this will ensure the ownership of all planning document developed and implemented adaptation actions 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 be ineffective in addressing the targeted risk. Planning arrangement without involving local community will only result in 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 programme ownership and subsequently the maintenance of the interventions after the programme 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
2.2. Enhanced capacity of local government and other city stakeholders' in developing climate risk assessment and utilizing the results to develop local climate change adaptation action plan (RAD API)	2.2.1. RAD API developed based on City Climate Risk Assessment and Climate Coastal Impact 2.2.2. Strategy to integrate CCA into local government planning processes (annual work plan or mid-term development plan of city) is developed	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 programme is reactivating the working group. Activating and optimizing the role of city team in this programme 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 programme but included in the RPJMD /RKP (including integration of city-wide replication/scaling up of adaptation actions funded by the programme); the programme 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 programme 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
2.3. 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	2.3.1. 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 programme across coastal communities/ upstream and downstream communities); and also evaluated for future reference	
2.4. Established knowledge management platform at city-level	2.4.1. Climate change training and knowledge sharing conducted 2.4.2. Knowledge product, Advocacy material (i.e. lessons learned, research paper, newsletter) published and shared 2.4.3. Local knowledge sharing platform established	

		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. Strengthening vertical coordination by enhancing provincial government's capacity in mainstreaming climate change		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 programme/activity (provincial government responsible for one national budgeting channel to city).

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 3.1. Enhancing provincial government's capacity in mainstreaming climate change adaptation and resilience into Central Java Province development plan	3.1.1 Enhanced provincial capacity to develop RAD API 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	Considering this role, the programme 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 programme 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. Strengthening vertical coordination and collaboration between national and local government in climate adaptation context and Enriching knowledge, toolkits		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

and methodologies coastal resilience for the national government 4.1. Enriching SIDIK as risk assessment tools for coastal area based on local experience	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 4.1.2. Strengthened vertical coordination and collaboration between national and local government in climate adaptation context	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 programme 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.
SUSTAINING		
5. Improving community's resilience through initiation of alternative livelihood and improvement of sanitation facility 5.1. Increased economic income and improved community's health in 8 target kelurahan of Pekalongan City	5.1.1. Capture fishery in mangrove ecosystem developed and implemented by community 5.1.2. Mangrove ecotourism improved and involving wider participation of affected coastal community of Pekalongan City	Vast areas of agriculture and aquafarming were lost or severely damaged due to sea level rise causing frequent tidal flood that frequently hit the coastal area of Pekalongan City. To date, many families have lost their regular income and thus fell into poverty. Many have to do irregular jobs to survive, including women that still have to take care of the household at the same time. One possibility to restore the loss livelihood facilities is to relocate to other areas, which can be very costly and might not cover all those affected. Not to mention the needs to develop new settlement areas in the case of relocation to other part of the city or even to the rural suburbs. Capture fishery and eco-tourism through mangrove restoration and expansion provide less costly solution of alternative livelihood,

	5.1.3. Improved cultural economy through application of ecological batik using mangrove based colouring product 5.1.4. Improved food resiliency through the application of urban farming as alternative to conventional agriculture practices 5.1.5. Developed circular economy through initiation integrated waste management system and processing 5.1.6. Improved sanitation facility in 8 target *kelurahan* to mitigate risks of waterborne disease	while at the same time improve coastal protection and can contribute to recovery of the frequently or even permanently inundated areas in the long term. Well maintained and vast area of mangrove can even apply to improve local batik industry and reduce environmental impact through its utilisation as natural colouring product. Further, replacing lost agricultural land, especially bound with relocation of community, can also be as costly as replacing damaged aquaculture facility. Urban farming can be more cost efficient and suitable for promoting urban style agriculture that can cover daily nutrition and eventually be commercially beneficial, even if it is not in the same dimension as land intensive agriculture activity. Waterborne disease can easily spread to wide area, especially during flood and poor sanitation are involved. Without proper solution to the latter, waterborne disease can evolve to an epidemic condition that could affect economic situation in Pekalongan City. Poverty in the affected target community has also led to another issues related to hygiene condition, which is the pileup of domestic waste that exacerbates the impact of tidal flood, and can also lead to rain flooding, due to clogged drainage, causing prolong inundation. Improvement of sanitation condition and proper waste management plan can provide better living condition, help reduce risks of waterborne disease and increase the community's adaptive capacity to climate change impact at coastal area, and thus prevent further social and

		economic damage to the affected communities.

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**
Improvement of water and sanitation condition to reduce risks of waterborne disease	Communal Latrine	The alternative would be to construct drainage pipes in 8 communities in North. However, because of lower densities and other situations (i.e. land ownership) would not be cost effective. Moreover, possible drainage pipes channels considered would be less effective in addressing flash flood 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 way too expensive. Moreover, with this approach, the most vulnerable / poor people will benefit.
Protection of coastal areas and mangrove restoration activity	Coastal embankment with geotube	Hard infrastructure embankment is too expensive. Geotube is less Ecosystem disruption from mobilization and construction process. And concept of sand traps from geotube system is part of natural development. 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 geo-tube structure.
Establishment of mangrove belt and enhancement of the mangrove information sites	Integrated Mangrove plantation with capture fishery and ecotourism	Planting mangroves along the coast is very good, but the main challenge is land ownership issue. More than 80% of the land is private land. Indeed, the Municipal Government of Pekalongan City has declared its support for mangroves development and to, if necessary, acquire land for this purpose.

		The integration model of mangrove restoration with ecotourism becomes attractive for private landowners to join the project based on the opportunity to be involved in ecotourism business.

87. Bintari Foundation had conducted loss and damage studies by taking a sample of North Bandengan Community in North Pekalongan, concluding that loss and damage per household in the Bandengan Community is USD 1,800 / year. The indicators for the losses 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. There are 11,065 households in the 8 target *kelurahan*, so the potential loss if not doing anything can reach up to 19,917.00 / years. The expected benefits after the end of this project is to prevent loss and damage or decrease in income of no more than 10%.

88. Activities proposed are **expected to be completed in three-year period.** The first year will be programme 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 programme. 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 within a time frame of 6-months. Afterwards, the programme will focus in actions implementation. This arrangement is aimed to ensure the programme 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 programmes of action, or other relevant instruments, where they exist.

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

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

89. 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 programme 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)

90. **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.

91. This proposed programme 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 programme 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

92. 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

93. Considering that city and provincial government are obligated to develop their Environmental Protection and Management Plan, hence the **proposed programme 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

94. 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 programme 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 programme 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

95. 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 programme 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 programme will surely support the aforementioned government target.**

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

96. 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 programme.** 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

97. 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, programme and policy. As described on this proposal, **general approach and activities that are outlined for this programme are referring to and in line with the abovementioned steps; ensuring programme 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

98. 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 programme 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 programme is the example of this cross-level and cross-sector synergy. The development process of city development plan that take account of programme'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

99. 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 programme 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 programme 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)

100. **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 programme**, and thus the programme 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

101. 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 programme 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 programme.

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

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

103. Approach for the proposed programme 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, programme 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.

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

104. 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 programme 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

105. **The approach and methodology for this proposed programme 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.

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

106. **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 programme, to advocate the integration of CRA into SEA process, the proposed programme 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*

107. 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 programme, 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 programme.

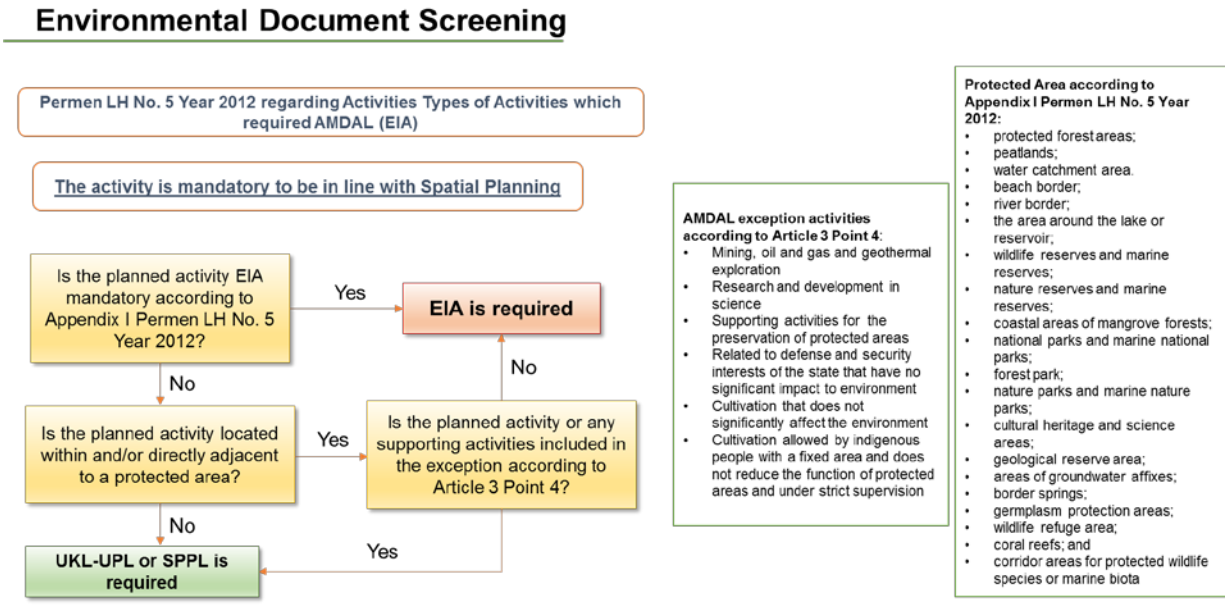


Figure 14. Environmental Document Screening Process

108. **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 programme 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 programme implementer should submit UKL-UPL
- **Geo-tube construction;** the total length for geo-tube construction under the programme 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.

109. To conclude:

- **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 programme does not categorized as activities that need to be complemented by EIA.
- Mangrove restoration with a size that is proposed in this programme is not included in Environment Ministry Regulation PermenLH 5/2012 as activities that required to have EIA.

110. 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 programme, 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 programme implementation, and will carry out the necessary mitigation measures. The development of climate risk assessment, UKL-UPL, SPPL and ESMP within the programme 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*

111. **Hard structure that will be constructed as part of the proposed programme in future time will be ensured to conform to 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 programme. The facilities' design and construction process will adhere to the aforementioned applicable standard to prevent negative impacts to the surrounding environment.

112. **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.

113. 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 programme. Meanwhile for building codes, the omission is due to its irrelevancy with the selected adaptation actions under this programme. Indonesia National Standard (SNI) is 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 activities; and the proposed activities within the programme (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 adequate to obtain relevant environmental permit

114. 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 programme since awareness building approach that will be taken under the programme 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

115. 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

116. Other external party that works closely in Pekalongan City is **Mercy Corps Indonesia (MCI)**, where one of the organization's programmes is run in the said city, which is **Asian Cities Climate Change Resilience Network (ACCCRN)**. This programme is aiming to build climate change resilience knowledge in the city. Pekalongan City was selected as ACCCRN Replication City, and the programme 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 programme 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 programme 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 programme. This programme will reactivate the working group that will work closely with the programme's PMU. Aside from the city team, this particular programme will also draw upon lessons from the implementation of adaptation actions under ACCCRN programme; where it fails and where it succeeded, including reflecting on the sustainability of the implemented actions.

JICA

117. 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 programme is completed in 2015, hence the proposed programme 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 programme 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

118. Earlier this year, the **Central River Region Pemali 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 programme will complement this BBWS project, and will be built in the eastern part of Pekalongan City, specifically in Degayu Community (see Figure 11 below).

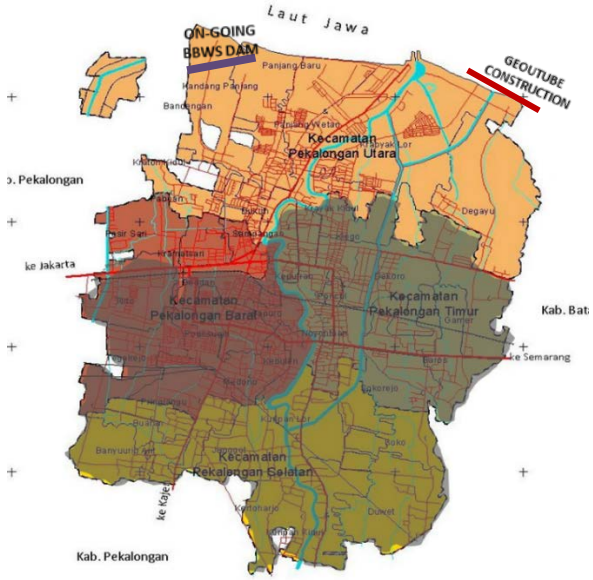


Figure 15. Location of BBWS Pemali Juana Dam and Geo-tube Construction

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.

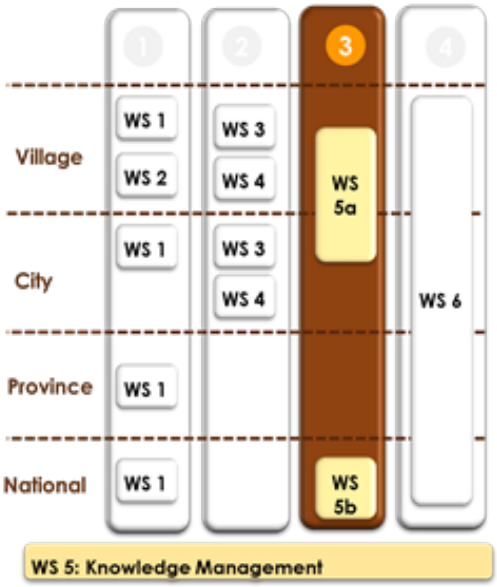


Figure 16. Knowledge Management Component is Embedded at Different Level of Governance

126. **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 programme encompassing regular newsletter, social media platform and knowledge board (contain information on climate-related issue as well as programme progress) in community centre or community office. Lessons learned obtain at this level will also be communicated to stakeholders at city level.

127. **At city level**, transfer of results and lessons learned to other communities across community and broader city area will be promoted. The programme'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 programme 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.

128. **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 programme 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.

129. **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 programme, 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 programme period, the programme will apply as the platform member.

130. Additionally, the **proposed programme 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.

131. Knowledge management in this programme 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 programme 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.

132. **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 programme period is ended. These efforts enable the generated knowledge to be disseminated to wider stakeholders, and not only those directly involved in the programme; creating a potential for replication in other area by other actors. During the course of the programme, 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 programme is ended.

133. 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.

134. **PIM is a local platform in Pekalongan City that specifically works in mangrove-related issue.** Despite the programme 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.

135. 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 programme 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

136. Mobility constraint and lack of involvement in decision-making process are two main barriers for women participation regarding CCA activities. In this programme, 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.

137. 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 Programme.]

138. 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 programme 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 programme 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 programme 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.**

139. Indeed, during preparation of full proposal, the Municipal Government of Pekalongan City through its BAPPEDA has declared its endorsement for this project and its plan and readiness to compensate land use for green open areas incl. for mangrove restoration purpose (Annex 4).

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

Component	Baseline	Additional (with AF)
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
Enhancing local government and other city	• Lack of capacity of the local governments officer and related stakeholders to lead climate	• Local governments and related stakeholders can lead climate change

Component	Baseline	Additional (with AF)
stakeholders' capacity in developing local climate change adaptation action plan (RAD API) and implement Climate smart	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 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	adaptation action and disaster risk reduction plan thus mainstreaming into city development plan • 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
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

Component	Baseline	Additional (with AF)
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 programmes 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 programme 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 programme, it is thus important to ensure the sustainability of the programme in order to spread out the benefit to wider community. Approach taken for this programme rely heavily on **stakeholders involvement and collaboration**, hence the derived activities for those two aspects are designed to ensure the programme's sustainability.

Building Sense of Ownership in the Municipality of Pekalongan

141. At community level in the 8 target *kelurahan*, **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 programme's outcome in the targeted area.

142. Meanwhile for Pekalongan 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 programmes, 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 tourism partnership, including ecotourism is Rp. 2,625,000,000

Knowledge Platform Establishment and Engagement

143. Multi-stakeholder involvement and knowledge platform engagement within the programme is also designed to allow programme 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 programme and its benefit. The more people take ownership, the more sustainable the programme 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 programme benefit to wider city stakeholders. This role will support in **building a sense of ownership to the actions and alternative livelihood produced under the programme.** During the implementation stage, particularly the workshop series, the programme 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 programme development. Throughout the course of the programme, 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 programme period, the programme will apply as the platform member. This membership will end after the programme 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.

Programme Mainstreaming at City Level

146. Aside from community, this programme place **government institutions as the core subject**. Hence, other means to ensure programme sustainability relies on government involvement. During the programme period, the adaptation actions will still be conducted under the programme 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, Programmes and activities included in the plan has their own budget allocation and must be implemented according to the schedule. For the programme case, a successful advocacy and mainstreaming process will see the inclusion of adaptation actions into city government's programmes 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 programme and replication). It will also show government commitment to continue and replicate the actions in future time even after the AF-funded programme period ended. This will further ensure the programme 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[27]. 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[28]. For this reason, this project was built and put forward the revolving fund as one of the alternative livelihood (generating income).

Exit Strategy Development

150. All in all, this programme believed that maintaining the programme 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 programme 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 programme.

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

[28] 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)

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

151. Environmental and Social Impact Assessment has been conducted for the programme to assess potential risks arising from programme 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 programme 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 programme; 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 programme 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 programme'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 programme is designed to ensure fair allocation of access to the community, including in information dissemination. To further disseminate knowledge related to the programme, knowledge board will be built in community centre or community office; making it accessible to all community. Participatory approach employed by the programme will further ensure access and equity principle being undertaken during programme 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 programme information and implementation process. Despite the effort in ensuring access and equity principle being carried out within the programme, there still a minor potential social risks that could arise during programme 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 programme. They will not only act as the passive actor within the programme, but also actively involved in the programme implementation. Meanwhile marginalized group was identified as not residing in the programme area. They live in the central and southern part of the city. So that they will not be the main focus under the programme, yet they will be the indirect beneficiaries of the programme. The proposed programme 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 programme 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 programme <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 Programme'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 programme 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	None

	Rights into Law Number 11/2005 and International Covenant on Civil and Political Rights into Law Number 12/2005. The proposed programme will adhere to these laws and ensure that Human Rights principles are being carried out throughout the course of the programme.	
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 programme 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 programme, where their representative will be selected as Community Working Group member. • The programme 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	None
Core Labour Rights	Relevant to labour rights, the nationally applicable regulations are as below:	None

	• 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 programme will adhere to the above laws, including payment issue. Additionally, the programme 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 programme. The programme will not pose any risk on labour rights since it will equip the community member with additional skills	
Indigenous Peoples	Community resides within the geographical scope of the proposed programme came from similar ethnicity, and has a well-established social norm. Accordingly, there is no risk related to indigenous people for this proposed programme	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 programme.	None
Protection of Natural Habitats	-	As a coastal area, protection of natural habitat is essential to be taken throughout the course of the programme. 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:

		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 programme'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 programme is not only focusing on human resilience, but also considering the corresponding biodiversity. <u>Potential risks:</u> • 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 <u>Requirements:</u> • 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 programme'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 programme 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 programme 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 programme'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 programme. The	None

	programme 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	
Physical and Cultural Heritage	There is no risk to physical and cultural heritage from the programme since there is no physical and cultural heritage located within the geographical scope of the proposed programme.	None
Lands and Soil Conservation	-	Inundation from coastal flooding in the targeted programme area has resulted in adverse impact, transforming productive land into unproductive one. This proposed programme aims to reduce the inundated area, preventing them from turning into unproductive land by implementing diverse adaptation measures. <u>Potential risks:</u> • 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 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 coherent with the programme'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).

152. Based on the assessment above, it can be seen that the programme 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 programme can be categorized as "**Category B"** where it has potential adverse impacts but in small number, small scale, not widespread and easily mitigated.

153. 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 programme to mitigate the potential risks and also ensure the compliance of programme implementation to AF Environmental and Social Policy.

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

A. Record of endorsement on behalf of the government[29] *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. Ruandha Agung Sugardiman *Director General for Control of Climate Change*	Date*: January, 17, 2020*

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.

Inda Presanti Loekman
Executive Director a.i. of Kemitraan
Implementing Entity Coordinator

Date: 17th Jan 2020	Tel. and email: +62-21-7279 9566; Inda.Loekman@kemitraan.or.id
Project Contact Person: **Dewi Rizki**	
Tel. and Email: +62-21-7279 9566; 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.

MINISTRY OF ENVIRONMENT AND FORESTRY
DIRECTORATE GENERAL OF CLIMATE CHANGE
Manggala Wanabakti Building Block VII 12th Floor, Jalan Gatot Subroto – Senayan, Jakarta 10270
Phone : +62 21 5730144 Fax. : +62 21 5720194
Website :http ://ditjenppi.menlhk.go.id email : tusetditppi@gmail.com

Our Ref. S.13/ PPI /API/ KLN.0/1/2020 Jakarta, 16 January 2020

Subject Supporting Letter

The Adaptation Fund Board
c/o The Adaptation Fund Board Secretariat

Dear Adaptation Fund Board,

Referring to my previous letter S.254/PPI/API/KLN-D/8/2019 regarding Letter of Endorsement related to proposals for Adaptation Fund, as my capacity as the National Designated Authority of Adaptation Fund in Indonesia, fully supports the approved proposals below, to be granted support from the Adaptation Fund Board :

1. Perkumpulan Payo-Payo; OASE (organization on Social and Environment Issues), entitling **Adaptation to Climate Change through to Sustainable Integrated Watershed Governance in Indigenous People of Ammatoa Kajang Customary Area in Bulukumba Regency, South Sulawesi Province, Indonesia ;**
2. Universitas 17 Agustus 1945 (UNTAG - University of 17 August 1945) Surabaya, entitling **EMBRACING THE SUN: Redefining Public Space as a Solution for the Effects of Global Climate Change in Indonesia's Urban Areas;**
3. Harmoni Alam Foundation, entitling **Enhancing the Adaptation Capability of Coastal Community in Facing the Impacts of Climate Change in Negeri Asilulu, Ureng and Lima of Leihitu District Maluku Tengah Regency , Maluku Province**; and
4. Kemitraan Partnership (Partnership for Governance reform), entitling **Building Coastal City Resilience to Climate Change Impacts and Natural Disasters in Pekalongan City , Central Java Province.**

Thank you for your kind attention and cooperation,

Your Sincerely

Dr. Ruandha Agung Sugardiman
Director General for Climate Change

cc :
- Kemitraan (Partnership governance reform)

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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

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.

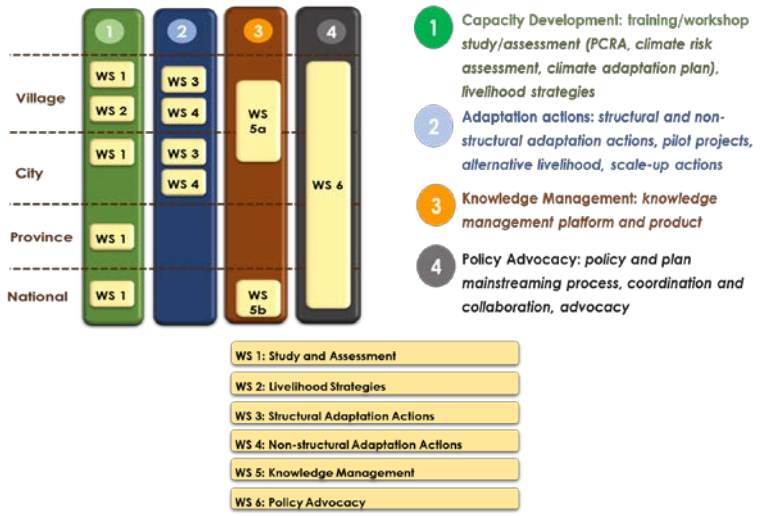

Figure 1. Interconnection of 4 Aspects at 4 Governance Level

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

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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
~~O.~~

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

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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.

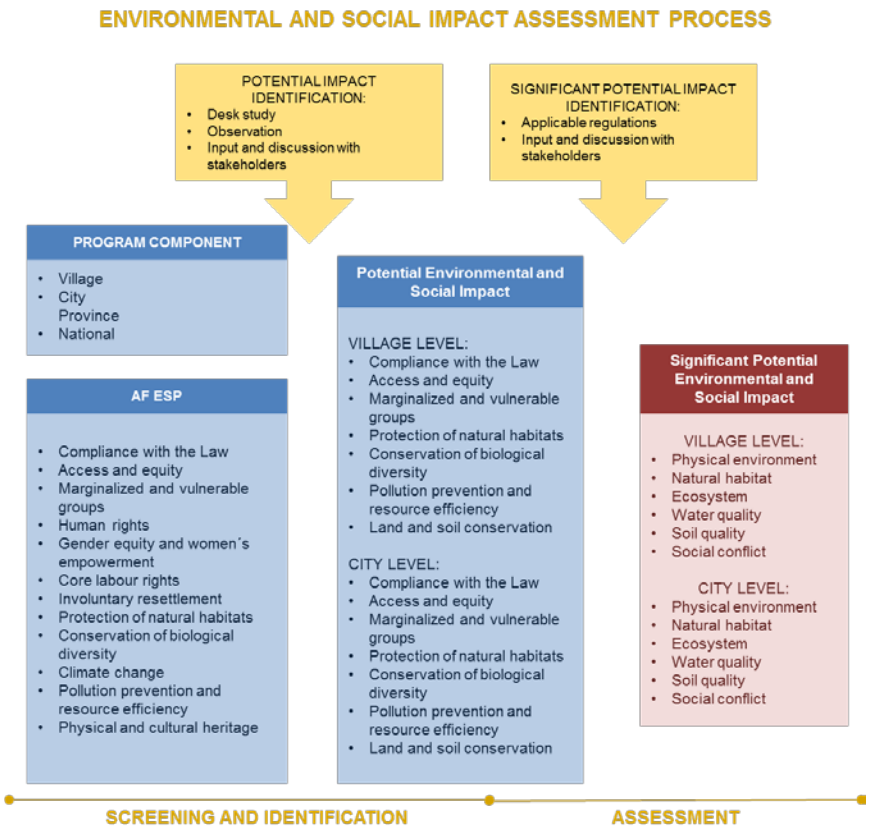

Figure 2. Environmental and Social Impact Assessment Process

1.6.1. Environmental and Social Impact Screening and Identification

The screening and identification process is 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 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.

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	√	√	-	-

1.6.2. Environmental and Social Impact Assessment

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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 2	Compliance with the Law	~~*Village Level*~~Enhancing protection along the coastal line of Pekalongan City	Output 1.~~2.~~1.1 Multilevel stakeholder engagement in the establishment of 6 kilometres of Mangrove Ecosystem ~~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~~ Output 1.2.1 300 m parapet constructed at Slamaran Beach in kelurahan Degayu ~~.2 Implement agreed adaptation action in 8 villages~~	Physical environment disruption from mobilization and construction process -	-	-	-	-	-

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			Output 1.2.2 Coastal embankment (geo-tube/sand trap) at Kandang Panjang ~~Construction of communal sanitation facilities~~	Physical environment disruption from mobilization and construction process Minor physical environment disruption from mobilization and construction process such as minor damage to road access from construction material	-	-	-	-	-
		Enhancing coastal community capacity in developing and implementing Local Climate Change Adaptation Action Plan (RAD API), climate change information system, Climate Smart Initiative ~~City Level~~	Output 2.~~3~~2.1 Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference ~~Innovative and collaboration adaptation actions are implemented~~	-	-	-	-	-	-
		Improving community's resilience through initiation of alternative livelihood and improvement	Output 5.1.1 Aquafarming in mangrove ecosystem developed and implemented by community	-	Minor disturbance to marine habitat through introduction of capture	Minor disturbance to mangrove ecosystem through introduction of capture fishery	-	-	-

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		of sanitation facility			fishery in mangrove ecosystem				
			Output 5.1.2 Mangrove ecotourism improved and involving wider participation of affected coastal community of Pekalongan City	Minor physical environment disruption from mobilization and development process	-	-	-	-	-
			Output 5.1.3 Improved cultural economy through application of ecological batik using mangrove based colouring product	-	-	Minor disturbance to mangrove ecosystem	-	-	-
			Output 5.1.4 Improved food security through the application of urban farming as alternative to conventional agriculture practices	Minor physical environment disruption from mobilization and development process	-	-	-	-	-
			Output 5.1.5 Developed circular economy through initiation integrated waste management system and processing	Physical environment disruption from mobilization and construction process	-	-	-	-	-

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			Output 5.1.6 Communal latrines constructed to improved water & sanitation in 8 target *kelurahan* to mitigate risks of waterborne disease	Minor physical environment disruption from mobilization and construction process such as minor damage to road access from construction material	-	-	-	-	-
~~3~~2 4	Access and equity	Enhancing coastal community capacity in developing and implementing Local Climate Change Adaptation Action Plan (RAD API), climate change information system, Climate Smart Initiative ~~Village Level~~	Output 2.3.1 Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference ~~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)~~	-	-	-	-	-	~~-~~Social conflict might arise from selection of community member that will be the implementer and beneficiaries of adaptation actions

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		Improving community's resilience through initiation of alternative livelihood and improvement of sanitation facility	Output 5.1.4 Improved food security through the application of urban farming as alternative to conventional agriculture practices	-	-	-	-	-	Social conflict might arise from selection of community member that will be the implementer and beneficiaries of adaptation actions
~~5~~3 ~~6~~	Marginalized and Vulnerable Groups	Enhancing coastal community capacity in developing and implementing Local Climate Change Adaptation Action Plan (RAD API), climate change information system, Climate Smart Initiative ~~Village Level~~	Output 2.3.1 Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference ~~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)~~	-	-	-	-	-	Social conflict might arise from selection of community member that will be the implementer and beneficiaries of adaptation actions -
		Improving community's resilience through initiation of	Output 5.1.4 Improved food security through the application of urban farming as	-	-	-	-	-	Social conflict might arise from selection of

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		alternative livelihood and improvement of sanitation facility ~~City Level~~	alternative to conventional agriculture practices ~~Output 2.2.1 Innovative and collaboration adaptation actions are implemented~~						community member that will be the implementer and beneficiaries of adaptation actions -
~~7~~4~~8~~	Protection of Natural Habitats	Enhancing protection along the coastal line of Pekalongan City~~Village Level~~~~City Level~~	Output 1.1.1 Multilevel stakeholder engagement in the establishment of 6 kilometres of Mangrove Ecosystem	-	Mobilization and planting process of mangrove belt could potentially impact the surrounding ecosystem	Minor disturbance to mangrove ecosystem through introduction of capture fishery	-	-	-
		Improving community's resilience through initiation of alternative livelihood and improvement of sanitation facility	Output 5.1.1 Aquafarming in mangrove ecosystem developed and implemented by community~~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)~~	-	Minor disturbance to marine habitat through development/enhancement of diverse organisms and other marine species -	-	-	-	-

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			Output 5.1.2 Mangrove ecotourism improved and involving wider participation of affected coastal community of Pekalongan City ~~Output 2.2.1 Innovative and collaboration adaptation actions are implemented~~	-	Mobilization and planting process of mangrove belt could potentially impact the surrounding ecosystem -	-	-	-	-
			Output 5.1.3 Improved cultural economy through application of ecological batik using mangrove based colouring product	-	-	-	-	-	-
			Output 5.1.4 Improved food security through the application of urban farming as alternative to conventional agriculture practices	-	Minor disturbance to existing micro habitat at selected farming sites	-	-	-	-
			Output 5.1.5 Developed circular economy through initiation integrated waste management system and processing	-	Disturbance to existing micro habitat at selected pilot site might occur through applied	-	-	-	-

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					physical construction				
			Output 5.1.6 Communal latrines constructed to improved water & sanitation in 8 target *kelurahan* to mitigate risks of waterborne disease	-	Minor disturbance to existing micro habitat at selected construction sites	-	-	-	-
5	Conservation of Biological Diversity	Enhancing protection along the coastal line of Pekalongan City~~City Level~~	Output 1.1.1 Multilevel stakeholder engagement in the establishment of 6 kilometres of Mangrove Ecosystem	-	-	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
			Output 1.2.1 300 m parapet constructed at Slamaran Beach in kelurahan Degayu	-	-	Disturbance to surrounding coastal ecosystem might occur during material mobilization and construction process	-	-	-

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			Output 1.2.2 Coastal embankment (geo-tube/sand trap) at Kandang Panjang	-	-	Ecosystem disruption from mobilization and construction process of geotube	-	-	-
		Improving community's resilience through initiation of alternative livelihood and improvement of sanitation facility	Output 5.1.2 Mangrove ecotourism improved and involving wider participation of affected coastal community of Pekalongan City	-	-	• 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	-	-	-

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~~11~~ 6 ~~12~~	Pollution Prevention and Resource Efficiency	Enhancing protection along the coastal line of Pekalongan City~~Village Level~~	Output 1.1.1 Multilevel stakeholder engagement in the establishment of 6 kilometres of Mangrove Ecosystem ~~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)~~	-	-	-	Water pollution from mangrove belt planting process -	-	-
		Improving community's resilience through initiation of alternative livelihood and improvement of sanitation facility	Output 5.1.6 Communal latrines constructed to improved water & sanitation in 8 target *kelurahan* to mitigate risks of waterborne disease	-	-	-	Ground water or sea water pollution from construction process of the facilities and the effluent of sanitation facilities (during its operational phase)	-	-
~~13~~ 7 ~~14~~	Land and Soil Conservation	Enhancing protection along the coastal line of Pekalongan City	Output 1.2.2 Coastal embankment (geo-tube/sand trap) at Kandang Panjang	-	-	-	-	Soil pollution from solid waste, oil-based waste and waste watre during mobilization and	-

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								construction process of geotube	
		Improving community's resilience through initiation of alternative livelihood and improvement of sanitation facility ~~Village Level~~	Output 5.1.2 Mangrove ecotourism improved and involving wider participation of affected coastal community of Pekalongan City	-	-	-	-	Soil pollution from waste generation and waste water contamination during operational activities in the eco-tourism site	-
			Output 5.1.6 Communal latrines constructed to improved water & sanitation in 8 target *kelurahan* to mitigate risks of waterborne disease ~~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)~~	-	-	-	-	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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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.

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

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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*

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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.

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.

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

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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

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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.

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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*

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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

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    - 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)

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.

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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 dis~~r~~ruption 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	Construction company and PMU	NIE, Environmental Agency, Public Works Agency and Local Development Planning Board of Pekalongan City
			Eco~~-~~tourism	Physical environment disrruption from mobilization and construction process		Tourism Agency, PMU, and local community	
			Construction of communal sanitation facilities ~~Reconstruction of individual sanitation facilities~~	Minor physical environment disruption from mobilization and construction process such as minor damage to road access from construction material ~~Minor physical~~		Construction company and PMU ~~Construction company and PMU~~	

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				~~environment disruption from mobilization and construction process such as minor damage to road access from construction material~~	document • Report the implementation and montioring of UKP-UPL to the City's Environmental Agenct in six-monthly basis		
2	Access and equity	Social	Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference ~~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 city level ~~Social conflict arising from selection of community member that will be the implementer and beneficiaries of adaptation~~	• 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	PMU ~~PMU~~	City Working Group ~~Village Working Group~~

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				~~actions and alternative livelihood at village level~~	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		
3	Marginalized and Vulnerable Groups	Social	Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference~~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	PMU	City Working Group~~Village Working Group~~

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					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		
4	Protection of Natural Habitats	Environmental	Mangrove restoration ~~Vennamei shrimp aquaculture farm~~	Mobilization and planting process of mangrove belt could potentially impact the surrounding ecosystem ~~Aquaculture preparation process could disrupt the existing natural habitat~~	• 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	Local community and PMU ~~Local community and PMU~~	~~Cleanliness Agency, Environmental Agency, Public Works Agency, Mairne and Fisheries Agency and Local Development Planning Board of Pekalongan~~

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			~~Bandeng aquaculture farm~~	~~Bandeng farm preparation process could disrupt the existing natural habitat~~	Protection and Management and its derivative regulations, particularly section on natural habitat protection ~~• 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~~	~~Local community and PMU~~	~~City, Local community~~

					~~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~~		
			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	Construction company and PMU	

					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)		
			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	Construction company and PMU	

					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		
			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	Tourism Agency, Local community and PMU	

					• 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		

5	Conservation of Biological Diversity	Environmental	Mangrove restoration~~Vennamei shrimp aquaculture farm~~	Minor environmental and ecological disruption from alteration of resource management from introduction of new mangrove species to the environment~~• Minor ecological disruption from introduction of vennamei shrimp to body of water • Minor disruption in benthic community from aquaculture facilities installation and 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 new mangrove species will interact in a new environment • Assess the most appropriate location to introduce the new mangrove species~~• Develop and submit UKL-UPL document for aquaculture farming activities to obtain environmental permit for its~~	Academician, local community and PMU~~Academician, local community and PMU~~	~~Marine and Fisheries Agency and Local Development Planning Board of Pekalongan City, Local community~~

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					~~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~~		
				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	Academician, local community and PMU	

					mangrove restoration site by involving the identified land owner		
			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	Construction company and PMU	Environmental Agency, Tourism Agency, Public Works Agency and Local Development Planning Board of Pekalongan City, Local community

					sediment and oil trap during facilities construction to prevent sedimentation and inflow of oil-based material to body of water (for floating design)		
			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	Construction company and PMU	

					geotube construction process to control abrasion, sedimentation, oil-based material flow to ecosystem		
			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	Tourism Agency, Local community and PMU	

					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		
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

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			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
			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	Local community, Tourism Agency and PMU	Environmental Agency, Cleanliness Agency, and Local Development Planning Board of Pekalongan City, Local community

					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)		
			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	Local community and PMU	Environmental Agency and Local Development Planning Board of Pekalongan City, Local community

					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		
11	Land and Soil	Environmental	Geotube construction	Soil pollution from solid waste, oil-based waste	• Develop and submit UKL-UPL document for geotube	Construction company and PMU	Environmental Agency, Public Works Agency and

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	Conservation			and waste water during mobilization and construction process of 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		Local Development Planning Board of Pekalongan City

			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	Local community, Tourism Agency and PMU	Environmental Agency, Tourism Agency, and Local Development Planning Board of Pekalongan City, Local community

					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)		
			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	Construction company and PMU	Environmental Agency, Public Works Agency, and Local Development Planning Board of Pekalongan City, Local community

					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		

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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 facilitator 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 andmitigation 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.

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.

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	Once	Construction Company, Tourism Agency and PMU
			Construction of communal sanitation facilities~~Re construction of individual sanitation facilities~~	Minor physical environment disruption from mobilization and construction process such as minor damage to road access from construction material~~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	Monitoring report for geotube and ecotourism site	Six-monthly	Construction company and PMU PMU
2	Access and equity	Social	Pilot innovative adaptation measures are implement	Social conflict arising from selection of community member that will be the	• Ensure the selection of appropriate project implementer and site	Background of working group member	Record of representation of working group member	Once	PMU Working

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			ed in collaboration with other stakeholders and evaluated for future reference ~~Implement agreed adaptation action in 8 villages~~	implementer of adaptation actions and alternative livelihood at city level ~~Social conflict arising from selection of community member that will be the implementer of adaptation actions and alternative livelihood at village level~~	location, fair allocation of roles and responsibilities • Ensure that working group member represent the voice and interest of all layers of community and city stakeholder	% of women representative in working group % of women representative attendace in working group meeting Number of stakeholder mapping document	Minutes of meetings for working groups meetings Documentation of stakeholders mapping process and results	Every three months Once	Group and PMU Working Group and PMU
3	Marginalized and Vulnerable Groups	Social	Pilot innovative adaptation measures are implemented in collaboration with other stakeholders and evaluated for future reference~~Implement agreed adaptation action in 8 villages~~	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~~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~~	• 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	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	Availability of Social impact assessment and management plan document Record of representation of working group member Minutes of meetings of working group meetings	Once Once Every three months	PMU Working Group and PMU Working Group and PMU

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				~~exposed to the program~~	and city stakeholder	Number of produced visibility materials Number of people received the visibility materials	Visibility materials and its dissemination records	Every six months	Working Group and PMU
4	Protection of Natural Habitats	Environmental	Mangrove restoration ~~Vennamei shrimp aquaculture farm~~	Mobilization and planting process of mangrove belt could potentially impact the surrounding ecosystem ~~Aquaculture preparation process could disrupt the existing natural habitat~~	The availability of environmental procedure for mangrove restoration activity~~- Issuance of environmental permit for implementation of adaptation action - Aquaculture site location~~	Number of environmental procedure for mangrove restoration activity~~Number of Issued Environmental Permit~~ ~~Number of potential aquaculture site location~~	Environmental procedure for mangrove restoration activity~~UKL-UPL document for aquaculture farm~~ ~~Document submission and approval report~~ ~~Map of potential aquaculture site location~~	Once~~Once~~ ~~Once~~	PMU~~Local community and PMU~~ ~~Local community and 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	SPPL document Documentation of sediment trap and oil trap construction and operations	Once Once	Construction company and PMU

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						construction phase			
			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, development and operational activities could pollute the water and subsequently disrupt natural habitat	• Sediment trap construction to control abrasion and sedimentation within mangrove ecosystem • Availability of environmental procedures that comply with local regulation for ecotourism site, including	Number of UKL-UPL document Number of operating sediment and oil trap facilities during construction phase Number of environmental procedures	UKL-UPL document Documentation of sediment trap construction and operations Environmental procedures (including waste management	Once Once Once	Cleanliness Agency, Local community and PMU Cleanliness Agency, Local communit

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					waste management plan	for eco-tourism site operations Number of UKL-UPL monitoring report	plan) for eco-tourism site Monitoring report of UKL-UPL document	Six-monthly	y and PMU
			Mangrove restoration	Minor environmental and ecological disruption from alteration of resource management from introduction of new mangrove species to the environment	• The availability of environmental procedures for mangrove restoration actiity that outline mitigation measures for potential risks associated with the activity • Ensure that the proposed mangrove species is appropriate for the location	Number of environmental procedure for mangrove restoration activity Number of assessment on appropriateness of the proposed mangrove species for mangrove belt planting activity in the proposed location	Environmental procedure for mangrove restoration activity Assessment on appropriateness of the proposed mangrove species for mangrove belt planting activity in the proposed location	Once Once	Academician,working group and PMU

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				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

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			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	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	UKL-UPL document Documentation of sediment trap construction and operations Environmental procedures (including waste management plan) for eco-tourism site Monitoring report	Once Once Once Six-monthly	Cleanliness Agency, Local community and PMU

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					with local regulation for ecotourism site, including waste management plan	monitoring report	of UKL-UPL document		
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	Number of environmental procedure for mangrove restoration activity	Environmental procedure for mangrove restoration activity	Once	Academician,working group and PMU

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					with the activity				
			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	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, and immplemented by the involved community Waste	Number of UKL-UPL document Number of operating sediment and oil trap facilities during constructio n phase Number of environme ntal procedures for eco-tourism site operations Number of community member involved in the ecotourism manageme nt being trained for environme ntal proceures Number of UKL-UPL	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	Once Once Once Six-monthly Six-monthly	Cleanlines s Agency, Local communit y and PMU Working Group and PMU Working Group, Local communit y and PMU PMU

					management activity in ecotourism site that involves local agency and local community	monitoring report Number of community member involved in waste management activity	document Community-based waste managememt activity implemented in the surrounding ecotourism area	Six-monthly	Working Group, Local community 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 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 utilization and maintenance procedure for the	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) Availability of utilization and maintenance procedure	Once Once Once Every six months Once	Construction company and PMU PMU Working group and PMU

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						facitlies Number of trainings and visibility materials on good sanitation behaviour	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
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 operational	Availability of UKL-UPL document that outline mitigation measures for potential risks	Number of UKL-UPL document Number of operating sediment	UKL-UPL document Documentation of sediment trap construction and	Once Once	Cleanliness Agency, Local community and PMU

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				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	and oil trap facilities during constructio n phase Number of environme ntal procedures for eco-tourism site operations Number of community member involved in the ecotourism manageme nt being trained for environme ntal proceures Number of UKL-UPL monitoring report Number of community member involved in waste manageme nt 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	Working Group and PMU PMU Working Group, Local Communit y and PMU
			Constructio n of communal	Soil pollution from construction process of the facilities and	Availability of SPPL document Availability of	Number of SPPL document	SPPL document	Once	Constructi on company and PMU

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			sanitation facilities	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)	sediment and oil trap facilities Water tight design of sanitaiton facilities Water quality of the surrounding area Community implement good sanitation behaviour	Number of operating sediment and oil trap facilities during constructio n phase Availiability of document on facilities design Number of surface water quality monitoring report Number of trainings and visibility materials on good sanitation behaviour	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 Every six months Every three months Every six months	PMU PMU Working group and PMU Working group and PMU

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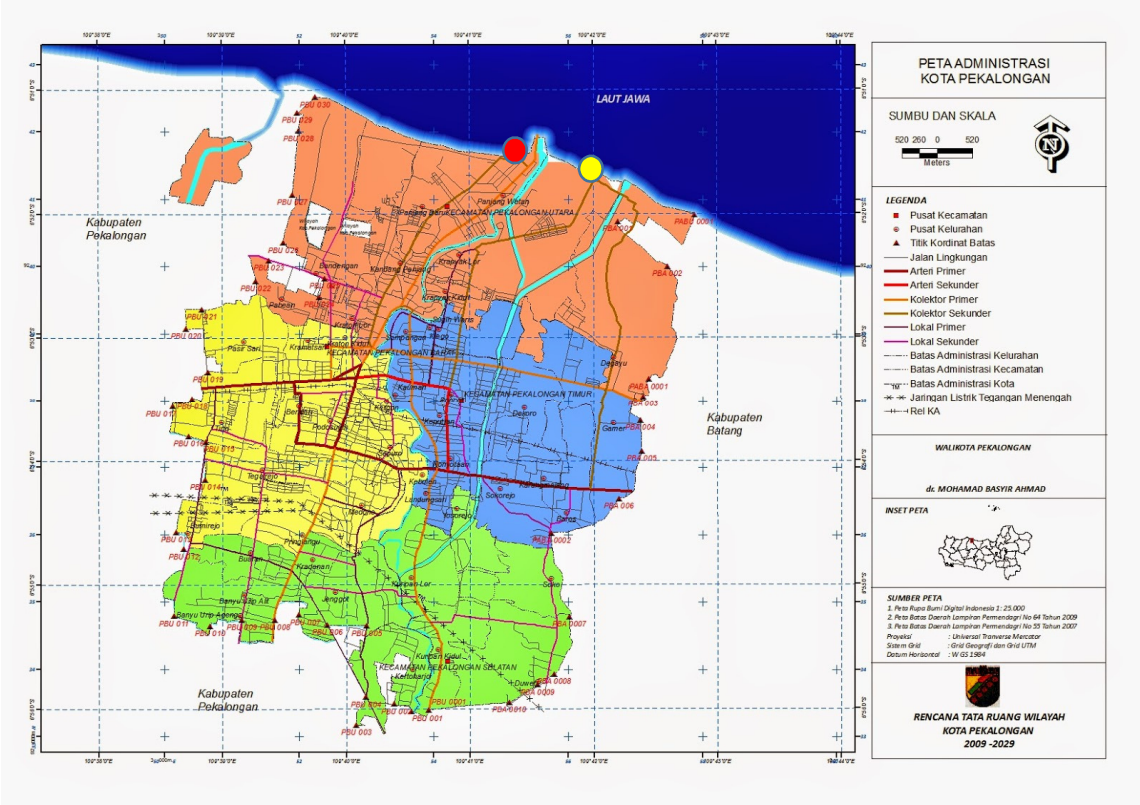
ANNEX 2

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 develoomento 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. [signature]
2.	Minarsih	Degayu	P	2. [signature]
3.	M. Fauzan	[illegible]	L	3. [signature]
4.	Azizah. R	Bandengan	P	4. [signature]
5.	Abimanyu S. Ag.	Kemitraan	L	5. [signature]
6.	Khair Ranggi	kemitraan	P	6. [signature]
7.	Budi. Ch	kemitraan	L	7. [signature]
8.	TAUFIK	—	L	8. [signature]
9.	Adetya. R.	—"—	P	9. [signature]
10.	Kaylsah	Padukuhan Kraton	P	10. [signature]
11.	Nurul [illegible]	[illegible]		11. [signature]
12.	Sutapaningsih	Kand Panjang	P	12. [signature]
13.	Sukosroso Hadi	Panjang Baru	L	13. [signature]
14.	Sylviana Dewi	PKK	P	14. [signature]
15.	Tuginanto	kel P. Wetan	P	15. [signature]
16.	Rosiana	Kel Bandengan	P	16. [signature]
17.	AMALIA FUBANI	KEMITRAAN	P	17. [signature]
18.	Arif Nurdiansah	kemitraan	L	18. [signature]
19.	Zubaidah	TKRJU	P	19. [signature]
20.	NURYATI	PANJANG BARU	P	20. [signature]
21.	Agus P	Degayu	L	21. [signature]
22.	Garong	—"—	L	22. [signature]
23.	Anita Maryari	BAPPEDA	P	23. [signature]
24.	M. Rosidi P	"		24. [signature]
25.	Amalia	BAPPEDA	P	25. [signature]
26.	FACHRUL RISQI	RT	L	26. [signature]
27.	Sulistyanto	RT	L	27. [signature]

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	Degayu	085741513734
4.	Azizah . R	Bandengan	085865531532
5.	Kayisah	Padukuhan Kraton	085728361661
6	NURUL HIDAYATI	PADUKUHAN KRATON	085870912572
7.	TRISNAWATI	KEL. PANJ. WETAN	085 742 880 929
8.	ROSIANA	KEL. Bandengan.	085876397744.
9	Sutapaningsih	kel. Kand Panjang	081542218522
10	Zubaidah	Kel TIRTO	085869879235
11	NURYATI	Panjang Baru	085643654014.
12	SUKOSRONO Hadi	Panjang Baru	081542236999
13.	Ujianto P	Bapeda	085866389211.
14.	Ganang	Krapyak	085643298511
15.	Anita Nanjani	BAPPEDA	082135122708
16.	A. Rusdi	"	0857000625 25

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 is the country's priority • 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	• To gain input from MoMF on the climate change adaptation proposal concept that Kemitraan is currently	• MoMF Research Center is currently working together with BAPPENAS to create	• In creating or implementing adaptation programs, it is important to include the geographical condition of the

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
	Research & Human Resource at the **Ministry of Marine & Fisheries** – 24/02/17:	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.	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.	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. • 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.	• 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
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	• 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

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
		Pekalongan for Kemitraan's concept proposal.		
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 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.	• 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
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.

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
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 tidal flood problem mitigation, in Pekalongan.	• In attempt to resolve the tidal flood issues, the PWA in Pekalongan mainly focused their activities in 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.	• Public works Agency ask kemitraan project concept will work at the activity level, concrete actions and the policy level. • 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	• 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

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
			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	
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 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)	• 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 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.

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
				• 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	• 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,

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
			• City stakeholders are made aware and understand on the potential risks associated with the program from the communication of ESMP draft during the event	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
13	**Head of Environment Agency of Pekalongan City** - 02/12/19	• Collecting information on the current status of the adaptation progress in Pekalongan City	• The progress of the dyke construction in the 2 *kelurahan* Bandengan and Kandang Panjang have reached approx. 90% • Mangrove rehabilitation and enhancement at the Mangrove Information Centre continues. Support needed in the provision of seedling embankments at the nursery to provide seedlings from being washed up by tidal flood • The two coastal tourism areas of Pasir Kencana Beach and Slamaran Beach are planned to be connected through a skybridge to support the development of integrated coastal tourism	• Kemitraan plan to support the Municipal Government of Pekalongan City needed to be changed, since all planned construction has been initiated by the Municipal Government • The rehabilitation of Mangrove Information Centre faced challenges in the development of mangrove seedling through the frequently occurring tidal flood. The Head of the Environment Agency of Pekalongan City requested support to enforced the nursery area with mounds
14	**Meeting with Bintari Foundation (Amalia) at Bandengan** – 03/12/19	• Visit to the pilot communal latrine built by Bintari Foundation with community's participation latrine in *kelurahan* Bandengan	• Bintari Foundation has conducted consultation with the community of the 8 target *kelurahan* to determine the model of communal latrine to be constructed. Three construction designs have been presented to the community and the current pilot model is the one agreed upon	• There is urgent need for Kemitraan to collaborate with Bintari Foundation to replicate the communal latrine now being constructed in Bandengan • Bintari Foundation could currently support with the pilot latrine and inquired the opportunity for Kemitraan's support
15	**Secretary of Pekalongan City's Bappeda** – 03/12/19	• Collecting information on development progress in the target *kelurahan* affected by climate change impact	• Confirmation of the information given earlier by the Head of Environment Agency re dyke construction progress in the 2 *kelurahan* Bandengan and Kandang Panjang • Confirmation on the plan to build sky bridge connecting two coastal tourism areas • Information on the progress of parapet construction from Bandengan up to the Slamaran Beach in Degayu • Request to Kemitraan to extend the existing parapet at Slamaran Beach for an additional approx. 300 m that are still exposed to tidal flood	• Confirmation for Kemitraan not to support with dyke construction, since it is already covered by Pekalongan City's budget • After ground checking to Slamaran Beach, where the parapet construction ended, it is visible that adjacent area mentioned during the meeting was still very much exposed to the sea and just behind the area are community fish ponds. With no protection, it is possible that tidal flood can inundate the area and reach the fish ponds

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
			• The Secretary also informed that development of fish/shrimp ponds and paddy fields in coastal area are now interdicted by the Municipal Government for an unlimited time • Addressed issues on domestic waste that became potential factor to escalating health issues in the targeted 8 *kelurahan*. The Secretary asked Pekalongan City's Mayor Advisors for presentation in this issue	• Kemitraan needs to change its intervention strategy based on the interdiction of fish/shrimp farming in the coastal area • Meeting with Mayor's Advisors informing why the issue on domestic waste in the 8 target *kelurahan* is indirectly related to climate change, the frequent tidal flooding and inundation. The Municipal Government of Pekalongan City has thrown a plan of integrated waste processing facility and asked Kemitraan to assist with the pilot project
16	**Meeting with Bintari's Manager, M. Nurhadi** – 04/12/19	• Explore possible collaboration with Bintari Foundation related to communal latrine for the affected community • Discuss on the opportunity of alternative livelihood apart from fish/shrimp farming	• Bintari agreed to collaborate in the construction of communal latrine and provide documentation on the construction design • Bintari proposed to develop urban farming based on the study they have conducted and availability of developing in 4 potential sites in Bandengan as pilot	• The construction of communal latrine is urgent in regard to the health and hygiene condition of the community, especially to reduce risks of waterborne disease's break out • After further discussion with Bintari and internally at Kemitraan, urban farming appeared to be potential livelihood alternative for the affected community
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.	• 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.

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
			• 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.	
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 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	• Fisheries sector remains the primary economic activity option for Kandang Panjang community

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
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	• Fisheries is not the main economic sector in Bandengan. Most of the fisheries product are Bandeng and seaweed	• Actions in Bandengan community will be focusing in increasing community's adaptive capacity by providing alternative

No.	Stakeholder	Consultation Objective	Outcome	Conclusion
		community based on their issue and needs	• 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	livelihood and addressing water and sanitation issue • Resettlement will not be considered in the program

Annex 9

Documentation on community consultation

Community Introduction workshop

Community Introduction Workshop

Smart citizen for Pekalongan smart city

Smart citizen for Pekalongan smart city

Training for community campaign on environment

Training for community campaign on environment

Movie making with community

Movie making with community during Independence Day commemoration

Writing workshop

Writing workshop

Training in campaign photography

Photograph by community member after training

CCGA dissemination with Municipal Government of Pekalongan City

CCGA dissemination at Asia River Conference

CCGA dissemination to the Governor of Central Java (right corner wearing black t-shirt)

CCGA dissemination with community

Development of Community Action Plan for 2019

Development of Community Action Plan for 2019

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	• 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 geotube, 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

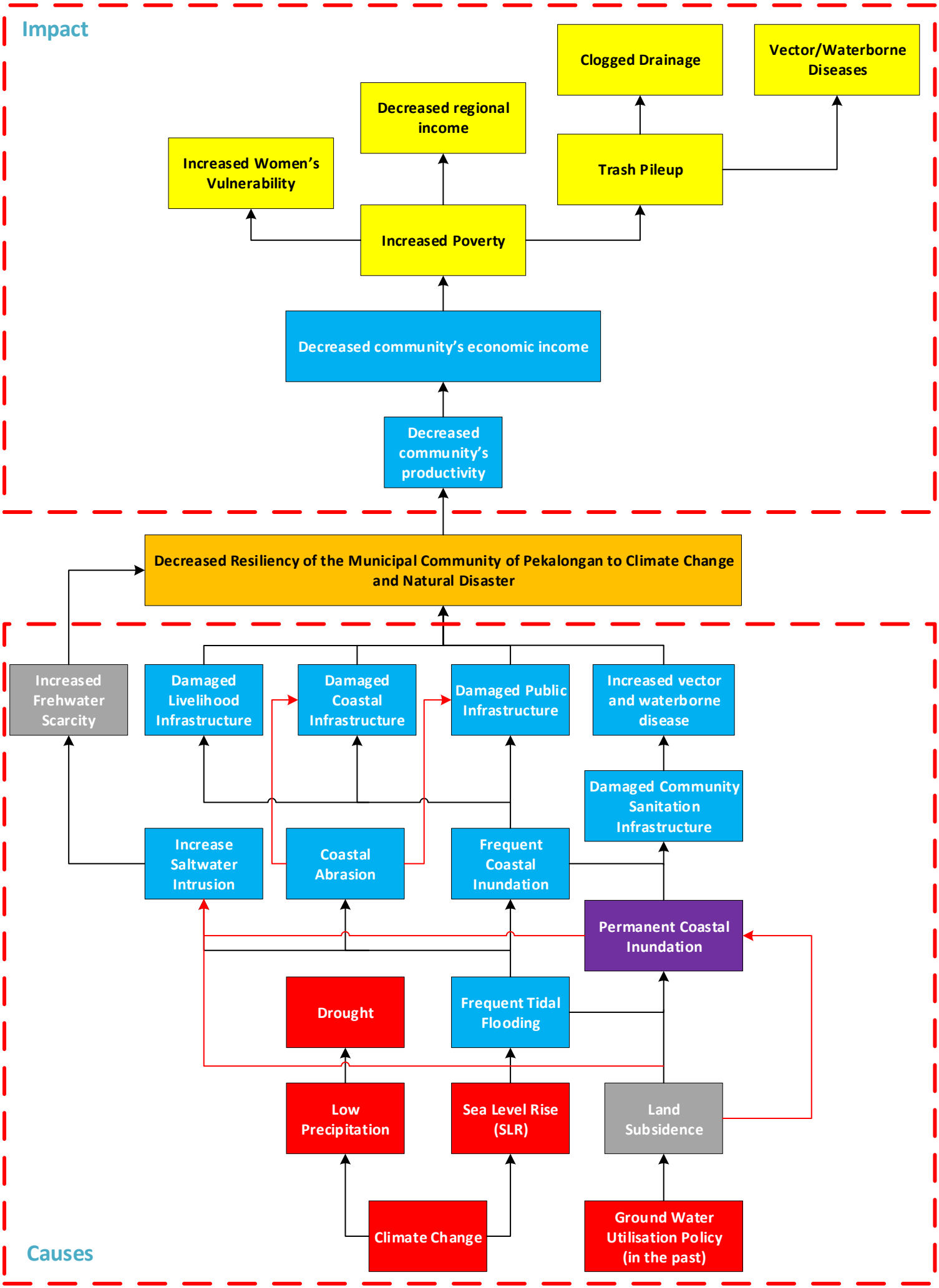
			• Build temporary sediment trap during structural coastal defence construction process as well as ecotourism site development to control abrasion and sedimentation within mangrove ecosystem • Develop sound and applicable environmental procedures that comply with local regulation for ecotourism site, 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 • Municipal Government of Pekalongan's willingness to support in the acquisition of lands for mangrove restoration if necessary
	Environmental	Minor environmental and ecological disruption from alteration of resource management including: • Introduction of new mangrove species to the environment • Introduction of new marine species to the body of water as a result of expanding mangrove	• 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 • 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 geotube, ecotourism 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 Geotube construction: UKL-UPL document o Ecotourism: 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 geotube construction process, and ecotourism site development to control influent of oil, and also abrasion and sedimentation
	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 Sanitary 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 geotube and ecotourism site development	• Submitting the relevant environmental document for each adaptation action to obtain

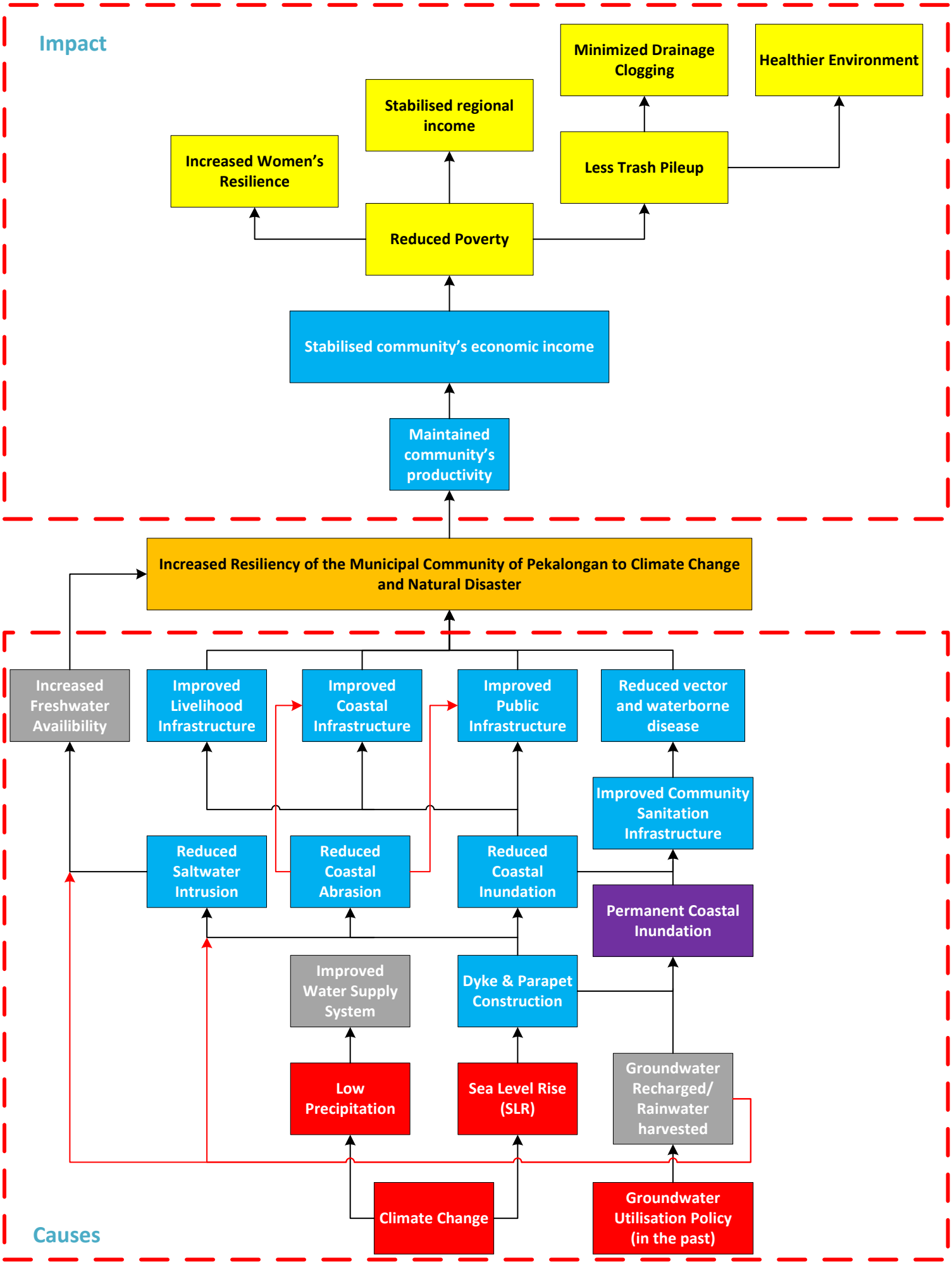
			environmental permit for its implementation. The needed documents are o Geo-tube construction: UKL-UPL document o Eco-tourism: UKL-UPL document • The environmental document will be coherent with the program's ESMP • Prepare the necessary environmental management plan for each activity listed in ESMP. • 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 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)

PROBLEM TREE PEKALONGAN CITY



OBJECTIVE TREE PEKALONGAN CITY



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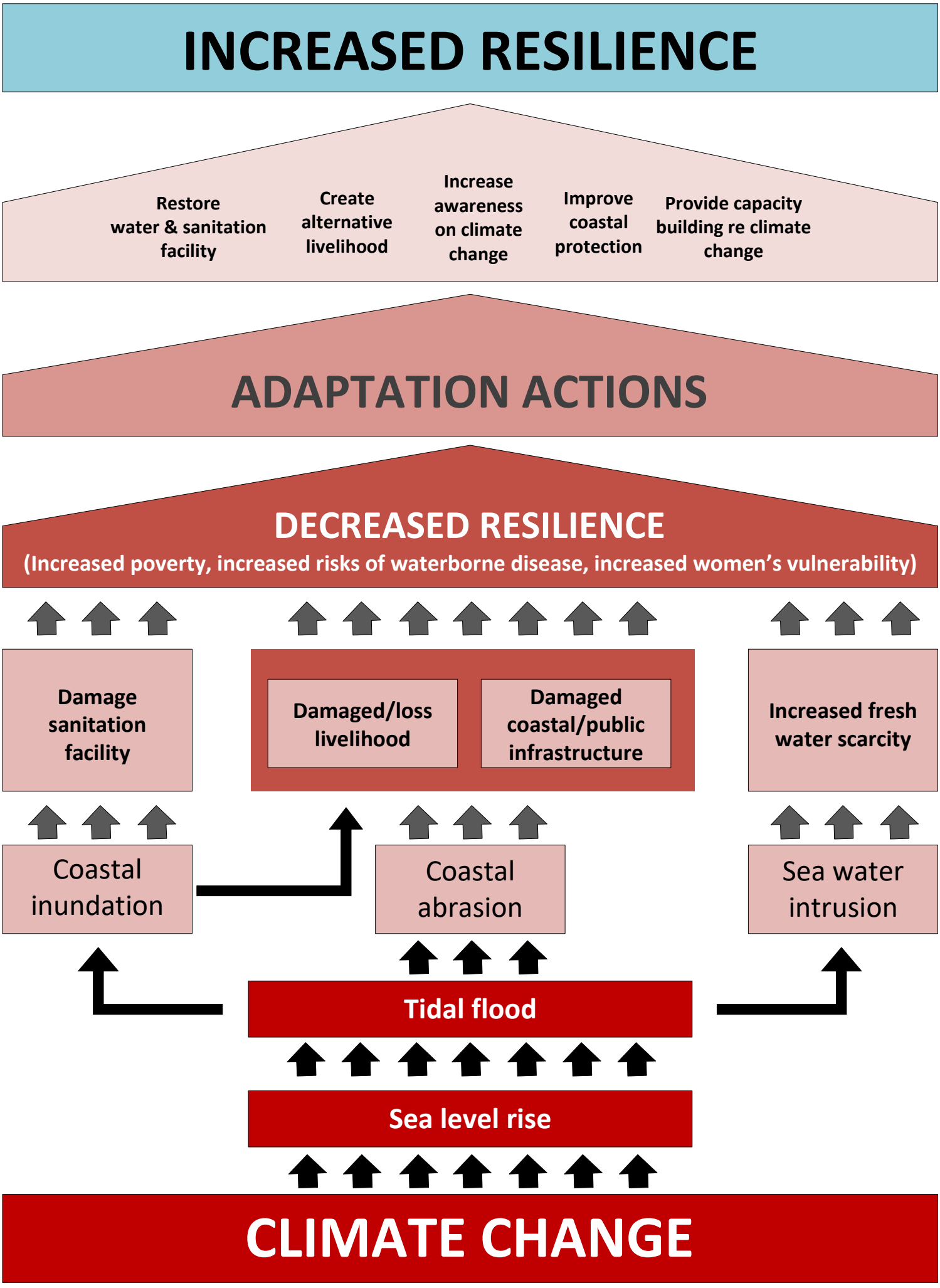

kemitraan
partnership

governance
reform in
indonesia

Jakarta , 17 Januari 2020

Our Ref : 006/SGS/Jan/2020

Subject : New Executive Director of NIE

The Adaptation Fund Board
c/o The Adaptation Fund Board Secretariat

Dear The Adaptation Fund Board,

I am writing to you to inform our new Executive Director, Dr. Laode Muhamad Syarif, who is expected to start his duty in February 2020 effectively. Dr. Laode Muhamad Syarif is the former Commissioner of the Indonesia Anticorruption Commission.

During the transition period, I am acting as the Executive Director ad Interim. I have been given the authority by our Executive Board to sign formal documents on behalf of Kemitraan.

Thank you for your kind attention.

Kind regards,

Inda Presanti Loekman
Executive Director a.i.

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