Environmental Assessment and Review Framework

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Indonesia: Flood Management in Selected River Basins Sector Project

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$1.00 = Rp13,129

ABBREVIATIONS

ADB – Asian Development Bank
AIF – ASEAN Infrastructure Fund
AMDAL – environmental impact assessment (Analisa Mengenai Dampak Lingkungan)
ANDAL – environmental impact analysis (Analisa Dampak Lingkungan)
AP – Affected Person
BAPPEDAs – Provincial and district planning agencies
BAPPENAS – National Planning Agency
BPN – National Land Agency
BWS/BBWS – River Basin Organization (Balai/Balai Besar Wilayah Sungai)
CBFRM – community-based flood risk management
CPMU – Central Project Management Unit
CPIU – Central Project Implementation Unit
CPS – country partnership strategy
DED – detailed engineering design
DGAI – Directorate General of Agricultural Infrastructure
DGRD – Directorate General of Regional Development
DGWR – Directorate General of Water Resources
DGAIF – Directorate General of Agricultural Infrastructure Facilities
DAI – Directorate of Agriculture Irrigation, DGAIF
DLP – Directorate of Land Development and Protection, DGAIF
DPIU – District Project Implementation Unit
DRC – Directorate of River and Coast
DWRI – Directorate of Water Resources and Irrigation
FRMP – Flood risk management plan
GPP – Grievance Point Person
GRM – Grievance Redress Mechanism
IA – Implementing Agency
KA-ANDAL – terms of reference for ANDAL
MOA – Ministry of Agriculture
MOHA – Ministry of Home Affairs
MPWH – Ministry of Public Works and Housing
NGO – nongovernment organization
O&M – operation and maintenance
PIU – Project Implementation Unit
PPIU – Provincial Project Implementation Unit
RBO – River basin organization
RENCANA – River basin plans
RBT – River Basin Territory
RKL/RPL – environmental management/monitoring plan
SPPL – Statement on Environmental Management (Surat Pernyataan Pengelolaan Lingkungan)
UKL/UPL – environmental management/monitoring measure (less stringent AMDAL requirement)

GLOSSARY

Flood Risk Management – FRM embraces a range of soft measures that address the three key components of flood risk management including (i) managing flood hazard, (ii) minimizing exposure to flood hazard, and (iii) reducing vulnerability of people and property exposed. Managing exposure to floods involves property acquisition, land use zoning, building codes, planning development controls, and building on platforms. Managing flood vulnerability involves nonstructural measures such as flood forecasting and warning, emergency response, community awareness and preparedness, post-flood early recovery strategies, and flood insurance.

NOTE

In this report, "$" refers to US dollars.

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I. INTRODUCTION

A. Background

1. This environmental assessment and review framework (EARF) was prepared by the Government of Indonesia (the Government), supported by the Asian Development Bank's (ADB) Project Preparation Technical Assistance (PPTA) 7364 INO: Flood Management in Selected River Basins (Phase II) completed in 2014. It was prepared to guide the environmental assessment process to screen subproject interventions, set up institutional arrangements in relation to environmental management and monitoring, and define environmental assessment requirements in accordance with the existing procedures to comply with the applicable laws and regulations of the Government and with ADB Safeguard Policy Statement (SPS 2009) for the Flood Management in Selected River Basins Sector Project (the Project).

2. The Project will support the Government and communities to better manage and mitigate flood risks and reduce the extent of economic and social damages in the Cidanau–Ciujung–Cidurian (3 Cis) river basin territory (RBT), Banten Province, and in the Ambon–Seram RBT, Maluku Province. This will be achieved through the implementation of process-oriented flood risk management (FRM) that provides a well-balanced mix of infrastructure improvement and soft interventions such as institutional strengthening and capacity building. Project interventions will (i) enhance data collection, information base, knowledge management and institutional coordination for managing floods, (ii) upgrade and construct flood protection infrastructure, (iii) reduce erosion and improve watershed condition, and (iv) prepare communities to manage floods. See Appendix 1 for details on project components and outputs.

3. The Project will strengthen coordination between river basin organizations (RBOs) and basin stakeholders in preparing comprehensive flood risk management plans (FRMPs) as the basis for investments in the selected river basins. This coordinated planning process—which will complement the development of river basin plans (RENCANA)—will be based on a robust knowledge base associating (i) improvement of hydro meteorological monitoring network and data management, and (ii) flood modeling and flood hazard mapping. The Project will ensure that FRMPs will be reflected in regional development plans, annual plans and spatial plans as the basis for issuance of related regulations (land use, river corridor, solid waste management, spatial planning, and building code). Community-based watershed rehabilitation and management activities will be introduced in mid catchment areas where unsustainable farming practices generate soil erosion. Communities in the flood plains will also implement small works and will benefit from capacity strengthening to improve flood resilience. Non-structural measures can demonstrate significant cost-benefit ratios, especially when implemented alongside structural measures and the Project will be catalyst to this effort.

4. The overall Project falls into Category B for environment according to ADB’s SPS 2009. As representative of candidate structural subprojects, the construction of new dikes along a 11 km river stretch of the Ciujung river in the 3 Cis RBT has been selected as a core subproject. This core subproject, for which the detailed engineering design (DED), economic analysis, and

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1 Banten province is the most western province of Java island and Maluku Province is a group of islands located in Eastern Indonesia.

2 For example, Center for International Climate and Environmental Research–Oslo (CICERO). 2014. World Development Report 2014, Background Note: Disaster Mitigation is Cost Effective. Norway, provides an overview of a number of recent cost-benefit studies of disaster risk reduction measures. It quotes one study in the United States in which each dollar spent on disaster mitigation saves society $4 in real resource costs.
resettlement plan, initial environment examination (IEE) and bidding documents have been prepared, will set the benchmark for the preparation of the following subprojects. Table 1 outlines the Environmental Safeguard Requirements for the Project according to ADB SPS 2009.

Table 1: Environmental Safeguard Requirements for the Project According to ADB SPS 2009

<table>
<thead>
<tr>
<th>Safeguard Requirements</th>
<th>Trigger</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Environmental Assessment and Review Framework (EARF) for entire Project</td>
<td>Project with potential environmental impacts</td>
<td>Before project approval</td>
</tr>
<tr>
<td>2. Environmental Impact Assessment/Initial Environmental Examination (EIA/IEE) for sample subprojects</td>
<td>Category A/B subprojects</td>
<td>Before project approval</td>
</tr>
</tbody>
</table>

5. Most subproject components are expected to be Category B or C; however, there might be category A subprojects, albeit few, to be identified. If a category A subproject is proposed, the categorization of the entire Project will be changed to category A. The categorization and Rapid Environmental Assessment (REA) checklist of the first category A subproject will be submitted to ADB by the executing agency, upon which an internal process in ADB will start to review and consider approval the categorization of the entire project to category A. No further action will be taken by the executing agency until ADB has provided approval of the new categorization.

6. The Ministry of Public Works and Housing (MPWH) through the Directorate General of Water Resources (DGWR) will be the executing agency. A Central Project Management Unit (CPMU) will be established in the Directorate of Water Resources Development (DWRD). The Directorate of River and Coast (DRC), DGWR as Central Project Implementation Unit (CPIU) will provide technical guidance to the RBOs, the Balai Besar Wilayah Sungai (BBWS) 3 Cis and the Balai Besar Wilayah (BWS) Maluku as implementing agencies. The DRC will be responsible to select and appraise the structural subprojects in accordance with the criteria detailed in the project administration manual (PAM). The BBWS 3 Cis and BWS Maluku, together with the provincial land agencies, will be responsible to prepare and implement structural subprojects including LAR. The river basin coordination bodies (TKPSDA) will provide strategic guidance and intersectoral coordination.

7. The Ministry of Agriculture (MOA) through the Directorate General of Agricultural Infrastructure and Facility (DGAIF) will be responsible for the implementation of the sustainable agriculture practices in the 3 Cis RBT in cooperation with provincial and district agriculture agencies. A CPIU will be established in DGAIF, while Provincial Project Implementation Unit (PPIU) and District Project Implementation Unit (DPIU) will respectively be established in the provincial and district agriculture agencies.

8. Under the overall guidance and responsibility of the CPIU under the Directorate General of Regional Development (DGRD), Ministry of Home Affairs (MOHA), provincial and district planning agencies (BAPPEDAs) will ensure institutional strengthening, planning and coordination of provincial and district local disaster management, public works, land, social and

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3 Project Administration Manual (accessible from the list of linked documents in Appendix 2).
4 The TKPSDAs for the 3 Cis and Ambon–Seram RBTs have been legalized on 04 June 2013 and 2012 respectively through the Decrees of Minister of Public Work No. 243/KPTS/M/2013 and No. 437/KPTS/M/2012.
forestry agencies. PPIUs and DPIUs will be established in each of the provincial and district agencies involved in CBFRM activities. The BAPPEDAs will ensure that FRMPs are used for updating spatial, mid-term and annual plans of the various involved sectors.

9. Through the Directorate of Water Resources and Irrigation (DWRI), under the National Planning Agency (BAPPENAS), a CPIU will be established to support the NSCWR for the provision of independent monitoring, evaluation and strategic coordination of activities.

B. Requirements for the Environmental Assessment and Review Framework

10. The EARF has been prepared based on the (i) review of the proposed structural and non-structural interventions identified under the PPTA Flood Management in Selected River Basins (FMSRB) Phase 1; Phase 2 undertaken from January 2013 to August 2013; and Phase 3 undertaken from November 2013 to August 2014; (ii) discussion with the executing agency, provincial and district/city government officials from respective planning, public works and environmental agencies, nongovernment organizations (NGOs) and community members; (iii) review of the relevant documents related to the Project; and (iv) experience of the consultants with similar activities and works.

11. The proposed Project components are expected to improve environmental conditions from the upstream watershed to downstream and estuary (mouth of river). However, proposed (especially structural) interventions have the potential to exert certain adverse impacts on the natural and social environment, especially during the construction phase. This EARF is designed to ensure that environmental effects are assessed at the appropriate time, positive outcomes maximized and adverse effects addressed with adequate management and monitoring.

12. Above all, this exercise ensures that the subprojects will not deteriorate or interfere with the environmentally sensitive areas, but rather minimize and mitigate potential adverse environmental impacts, and improve environmental quality of the area. Moreover, any component included in the subproject shall comply with the environmental requirements of the Government, the respective local government regulations, and ADB’s SPS 2009.

13. The purpose of the EARF is to guide the BBWS of 3 Cis and the BWS of Maluku, as implementing agencies for civil works, in identifying anticipated environmental impacts of the Project, developing and implementing mitigation measures for these impacts, and monitoring environmental impacts for timely interventions. The EARF outlines environmental screening procedures, assessment methodologies, environmental management (mitigation, monitoring and documentation), climate change adaptation and reporting for the components of the Project; and specifies institutional structure and mechanism to carry out compliance with the environmental management plan.
II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

A. Legal Framework

1. ADB Policy

14. ADB policy requires consideration of environmental issues in all aspects of its operations as described in SPS 2009. This policy states that ADB requires environmental assessment of all project loans, program loans, sector loans, sector development program loans, loans involving financial intermediaries, and private sector loans. The objective of the policy in regard to the environment is to "ensure the environmental soundness and sustainability of projects and to support the integration of environmental considerations into the project decision-making process" (SPS 2009, page 17).

15. The nature of the environmental assessment required for a project depends on the significance of environmental impacts, which are related to the type and location of the project, the sensitivity, scale, nature and magnitude of its potential impacts, and the availability of cost-effective mitigation measures. Projects are screened for their impacts and assigned to one of the following four categories:

   (i) **Category A.** Projects could have significant adverse environmental impacts. A full-scale Environmental Impact Assessment (EIA) is required to address significant impacts.

   (ii) **Category B.** Projects could have some adverse environmental impacts, but of lesser degree or significance than those in category A. An Initial Environmental Examination (IEE) is required to determine whether significant environmental impacts warranting an EIA are likely. If an EIA is not needed, the IEE is regarded as the final environmental assessment report.

   (iii) **Category C.** Projects are unlikely to have adverse environmental impacts. Neither EIA nor IEE is required, although environmental implications are reviewed.

   (iv) **Category FI.** Projects involve a credit line through a financial intermediary or an equity investment in a financial intermediary. The financial intermediary must apply an environmental management system, unless all projects will result in insignificant impacts.

2. Indonesian AMDAL Procedure

16. According to Indonesia's environment regulations, all projects must comply with the review and clearance procedures (Figure 1) specified under Indonesia's environmental system and other related law and regulation, among others:

   (i) Government Regulation No. 27/2012 on Environmental Permit;

   (ii) Decree of Minister of Environment No. 05/2012 on Screening Criteria (type/scale/magnitude of activities requiring AMDAL/EIA);

   (iii) Regulation of Minister of Environment, Republic of Indonesia No. 16/2012 on Guideline on Preparation of Environmental Document;

   (iv) Decree of Ministry of Environment No. 17/2012 on Community Participation and Information Disclosure in Environmental Impact Assessment;
(v) Regulation of Minister of Public Works, Permen PU No. 10/PRT/M/2008 on the Environmental Management Measure (UKL) and Environmental Monitoring Measure (UPL) Criteria; and
(vi) Regulation of Ministry of Environment (Permen LH) No. 07/2010 on Competence Certification of AMDAL Preparation and Training Requirements for AMDAL Preparation.

Figure 1: Flowchart of Indonesian Environmental Clearance

17. A key aspect of the legislation and regulations (Permen LH No. 07/2010) is that an Environmental Impact Assessment (AMDAL) must be prepared by suitably trained and registered experts. The Team Leader (1) and at least two (2) experts from the AMDAL team should be certified by LSK (Institution for Competence Certification) of AMDAL, which is approved by the Minister of Environment. One of the LSK is LSK-INTAKINDO (Association of Indonesian Consultants). In addition to standard requirement of experts (i.e. physical/chemical specialist, biologist, social economic and culture specialist, and public health specialist), the composition may require other specific experts.

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AMDAL refers to environmental impact assessment at whole, while ANDAL is part of the assessment where environmental impact analysis (ANDAL) carried out for the significant issues. In addition to ANDAL report, the assessment will be supported with RKL/RPL (equivalent to EMP) for managing/mitigating the impacts and subsequently monitoring the effectiveness of the environmental impacts management/mitigation.
18. There is no specific certification required for preparation of an Environmental Management Measure (UKL) and Environmental Monitoring Measure (UPL).

19. In addition to Indonesia national regulations, this EARF also considers provincial/local regulations related to environmental management, spatial planning [RTRW (regional spatial planning) and zoning regulation], forest conservation, and others. Even customary law will also be respected, if any and applicable.

20. The Indonesia AMDAL system generally conforms in intent to ADB’s environmental management guidelines. According to the regulation, all projects should undergo environmental clearance before proceeding to implementation. Table 2 shows the relationship between the ADB environmental categorization and those under Indonesia’s regulations/policies. Essentially, an AMDAL study corresponds to an EIA, and an Environmental Management Measure (UKL) and Environmental Monitoring Measure (UPL) corresponds to an IEE. The AMDAL and EIA are somewhat equivalent, though the criteria used for categorization under the Government of Indonesia’s AMDAL procedure and the ADB’s EIA requirement are slightly different. Indonesia regulation provides quite rigid quantitative criteria, while ADB rely on quantitative criteria (significance). For example, Indonesia’s AMDAL procedure classifies projects based on specific magnitude (length, depth, width, size, or other physical dimensions), whereas ADB’s SPS 2009 categorizes projects based on the “significance of impacts”.

<table>
<thead>
<tr>
<th>ADB Project Categories</th>
<th>AMDAL Project Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category A</strong>: Projects with potential for significant adverse environmental impacts, requiring an environmental impact assessment (EIA)</td>
<td><strong>AMDAL</strong>: Projects that according to law requires an Environmental Impact Assessment (AMDAL)</td>
</tr>
<tr>
<td><strong>Category B</strong>: Projects judged to have some adverse environmental impacts, but of lower degree and/or less significant than those for category A projects. Category B projects require an initial environmental examination (IEE)</td>
<td><strong>UKL/UPL</strong>: Projects that according to law requires Environmental Management Measure (UKL) and Environmental Monitoring Measure (UPL). However, special discretion and judgment of environmental agencies at local and national level (based on particular consideration) may override the category, and UKL/UPL Category may be “upgraded” to AMDAL Category.</td>
</tr>
<tr>
<td><strong>Category C</strong>: Projects unlikely to have adverse environmental impacts. No special requirement, but the environmental aspects are reviewed as well.</td>
<td><strong>SPPL</strong>: Projects that do not require AMDAL or UKL-UPL are obliged to submit a ‘statement of management and environmental monitoring ability’ or SPPL.</td>
</tr>
<tr>
<td><strong>Category FI</strong>: Projects involve a credit line through a financial intermediary or an equity investment in a financial intermediary. The financial intermediary must apply an environmental management system, unless all projects will result in insignificant impacts.</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

21. Because of the different categorization criteria, subprojects classified as A and B according to ADB may require AMDAL study according to the Indonesian system. For future subprojects, the AMDAL reports will be accepted by ADB as the EIA for category A subprojects or IEE for category B subprojects provided they are reviewed by ADB and considered to be consistent with SPS 2009 requirements of EIA/IEE specified in this EARF.
B. International Conventions on Environment

22. As a commitment to global environmental issues, Indonesia has ratified several international conventions, including, among others:

(i) ASEAN Agreement on the Conservation of Nature and Natural Resources, in 1985, which is to ensure that conservation and management of natural resources are integrated in development planning at all stages and at all levels of respective national laws;

(ii) Convention on Biological Diversity, in 1996, for parties to require the environmental assessment of their proposed projects that are likely to have significant adverse effects on biological diversity with a view of avoiding or minimizing such effects;

(iii) United Nations Framework Convention on Climate Change, in 1995, and subsequent protocols, for parties to take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects; and

(iv) Vienna Convention for the Protection of the Ozone Layer, in 1998, and subsequent protocol and amendments, for parties to take appropriate measures to protect human health and the environment against adverse effects likely to arise from human activities that will/likely modify the ozone layer.

C. Institutional Capacity

23. At present BBWS 3 Cis and BWS Maluku have only limited or lack of sufficiently trained and skilled personnel with deep knowledge about Government’s environmental assessment and review process as well as limited capability in environmental management of projects. In particular, BWS Maluku has no or very limited experience in executing/implementing foreign-funded projects. Most BBWS/BWS staff are not familiar with, or have limited experience in environmental assessment and management. To fill the gap they usually engage services of external consultants in project development and implementation supervision related to environmental management.

24. The Central Project Management Unit (CPMU) under DGWR, which will be responsible for providing the BBWS/BWS technical guidance in the planning and implementation of the works, needs assistance from environmental consultants to effectively carry out its role and responsibilities in meeting environmental requirements, such as preparation of Environmental Assessment reports, implementation of environmental management and monitoring plans (EMPs) and the preparation of environmental monitoring reports.

25. Environmental management capacity development is proposed for the Project in several ways, including:

- Ensuring that environmental management and monitoring are being undertaken in the subprojects in accordance with this EARF, IEE’s and AMDALs – and

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6 But some staff of BBWS/BWS have environmental background.
provide opportunity for detailed on the job training of the Government and agency staff in these matters.

- Providing specific training sessions to the supervising engineers for the implementation of structural subprojects.
- On-the-job training by providing specific environmental comments, explanation and demonstration for the range of non-structural project components.\textsuperscript{7}

\textsuperscript{7} Training on improving competence for candidates of AMDAL experts carried out by a registered LPK (Institution for Competence Training)
III. ANTICIPATED ENVIRONMENTAL IMPACTS

A. Subprojects to be financed under the Project

26. The full suite of potential interventions to be financed under the Project is given in the following table.

Table 3: Types of Structural Flood Management Interventions

<table>
<thead>
<tr>
<th>Type of intervention</th>
<th>Priority subprojects</th>
<th>Possible future subprojects (location to be identified)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Core subproject</td>
<td>Future subprojects</td>
</tr>
<tr>
<td></td>
<td>Ciujung</td>
<td>3 Cis RBT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ambon Seram RBT</td>
</tr>
<tr>
<td>New Dike construction (including Borrow Pit Areas)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Existing Dike enlargement</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>River widening</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>Possible enlargement</td>
</tr>
<tr>
<td>River deepening</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Dedicated dredging disposal area</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Concrete embankments (parapet)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible excavation disposal</td>
</tr>
<tr>
<td>Piling</td>
<td>Possible</td>
<td>Possible</td>
</tr>
<tr>
<td>Dredging &amp; disposal</td>
<td>Possible</td>
<td>Possible</td>
</tr>
<tr>
<td>Check dams</td>
<td>Possible</td>
<td>Possible</td>
</tr>
</tbody>
</table>

27. The overall Project falls into Category B for environment according to ADB’s SPS 2009. The Ciujung core subproject which involves dike construction and watershed management falls into category B for environment, and the IEE has been finalized. Together with the EARF, the IEE form the set of environmental safeguard documents for the project. The remaining subprojects and their components are to be identified and their actual categorization will depend on the project specifications (scheme, engineering design, size or scale, and location).

B. Potential Environmental Impacts

28. The subprojects mainly involve the rehabilitation or new construction at locations close to the respective rivers. However, in some instances there will be a requirement for borrow areas, dredging disposal areas, and quarries to support construction and dredging activities. For these, potential direct, indirect, cumulative and induced environmental impacts and risks to physical, biological, socioeconomic, and physical cultural resources and determine their significance and scope have been identified.

29. Adverse environmental impacts associated with structural and non-structural interventions are primarily related to the construction and post-construction phase of the individual structural projects. Degree, magnitude and intensity of actual impacts depend upon the nature of the intervention. Impact of civil (structural) works will be very different from the impact intensity associated with watershed rehabilitation (non-structural interventions). The main environmental impacts of the structural and non-structural intervention (both negative and positive) can be grouped as the following types:
(i) Change of land use;
(ii) Change of river morphology;
(iii) Community disturbance (noise, traffic, access, dust, business);
(iv) Soil erosion, compaction, and contamination;
(v) Changes to aquatic environment (water quality, aquatic biota);
(vi) Occupational health and safety;
(vii) Changed drainage and flooding regimes;
(viii) Complementary beneficial works (water supply, sanitation, aquaculture, etc.) and
(ix) Changed access to river.

30. Project impacts related to social, economic, and culture, including resettlement and gender mainstreaming have been studied in a separate part of the PPTA, and become integral part of the social safeguard documents.
IV. ENVIRONMENTAL ASSESSMENT FOR SUBPROJECTS/COMPONENTS

A. Environmental Criteria for Subproject/ Works Selection

31. In general the criteria to be adopted for selection of the subprojects under the Project are as follows:

(i) The subprojects shall only be selected from the list of projects prioritized by the Government;
(ii) The subprojects shall only involve activities that follow all the Government regulations;
(iii) The subprojects are not types of projects listed in ADB SPS’s Appendix 5 (ADB Prohibited Investment Activities List) that do not qualify for ADB’s financing; and
(iv) The subprojects shall meet environmental requirements. They are subject to mandatory environmental assessment, especially those that may have considerable adverse impacts to the environment or are located in environmentally sensitive areas.

32. Any subproject, which does not meet the general criteria listed above, will not be selected for financing under the Project. Rapid Environmental Assessment (REA) Checklists are used to identify impacts, assess their likely significance and examine how negative impacts may be mitigated. The checklists comprise a series of questions regarding the location and potential impacts of a project. Impacts are identified and assessed in the responses to each question. The REA checklist template is provided in Appendix 2 and has been applied for the structural core subproject (i.e., Ciujung Dike Construction) for initial implementation.

33. In addition to those set forth in ADB SPS 2009, the criteria used in project categorization will also refer to Government’s regulation, including sector and regional/local regulation. The criteria will be used to judge whether the environmental impact of the subproject is significant or otherwise. If it is significant, further studies may be recommended.

B. Procedures for Environmental Assessment and Review

34. The environmental assessment of subprojects must fulfill requirements of ADB, as described in ADB SPS 2009, and the government regulations. At an early stage of subproject preparation, potential direct, indirect, cumulative and induced environmental impacts and risks to physical, biological, socioeconomic, and physical cultural resources will be identified and their significance and exposure determined. Subprojects will be screened to determine whether they should be classified as Category A, B, C or FI. Depending on the significance of project impacts and risks, the assessment may comprise a full-scale EIA for category A projects, or an IEE or equivalent process for category B projects. Meanwhile, for Category C and FI (if any) require no formal environmental documentation, though its environmental aspect is also reviewed.

35. The following flowchart shows the hierarchy and relationship of environmental assessment and review process, as refer to ADB SPS 2009. In this case, EARF will be general document for environmental assessment and review for the subprojects. More specific and detail environmental assessment and review will be derived from the document; for sample the IEE for River Dike Construction of Ciujung subproject has been prepared.
1. **Screening and Classification**

36. The Project covers the 3 Cis and Ambon-Seram RBTs. The Ciujuang core subproject (i.e., River Dike Construction) is intended to improve the flood management in Ciujuang River Basin, as well as the complementary works of water resource conservation, raw water supply and aquaculture/ agriculture. The types of activities to be included in the subprojects cover structural and non-structural interventions. For that reason, the environmental assessment applies inter-region and inter-agencies approach as discussed below.

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8 Based on interpretation of ADB guidelines and PAM.
a. ADB Screening

37. Rapid Environmental Assessment (REA) Checklists are used to identify impacts, assess their likely significance and examine how negative impacts may be mitigated. The checklists comprise a series of questions regarding the location and potential impacts of a project (see Appendix 2). Impacts are identified and assessed in the responses to each question. The REA checklist has been applied for the structural core sub-project (i.e., Ciujung Dike Construction) and it is classified as Category B for environment.

38. The categorization is based on the most environmental sensitive component, which implies that if any component of a subproject has potential of significant adverse environmental impacts, then the subproject is to be classified as Category A regardless of potential impacts of other aspects of the project. In general a subproject will be classified as Category A if the subproject or component:

(i) has a significant level of environmental impacts requiring complex mitigation measures to be prepared through an in-depth assessment of the impacts and detailed study for preparing mitigation measures. To date, studies have shown that this is unlikely for any proposed activity but may be triggered depending on the dredging and spoil disposal option for future Ciujung dredging at the downstream of the toll road; and

(ii) will generate impact on an ecologically sensitive area, particularly if the project is located in buffer or core zone of any designated specially protected areas, or area of international significance (such as Ramsar site) or cultural heritage and archaeological sites. To date all studies have indicated that these factors are not relevant for the Ciujung subproject.

39. Other subprojects that do not fall into the above category are typically classified as Category B, C or FI depending upon the type and scale of impacts. It is expected that future sub-projects would mostly be Category B although a category A subproject might be possible, in which case categorization of the overall Project will be changed to category A.

40. The screening can further address the environmental sensitivity of an area, where a subproject is to be sited. Factors that affect the sensitivity evaluation include quality of ecosystem; importance and rarity; ability of the ecosystem to accommodate change; significance of the change in local and regional context, and maturity of the ecosystem.

b. Government Screening

41. According to the Government Regulation a mandatory AMDAL is required for any business and/or activity of which boundary overlaps with a protected area and/or potential impacts of the business and/or activity are predicted to affect nearby protected areas. Indonesia AMDAL screening criteria for selected relevant sectors is presented in Appendix 3. Furthermore, the new Government Regulation PP No. 27/2012 (Article 4) mentions that location of an activity should comply with spatial plan. In case of non-compliance, the AMDAL application will be refused.

42. Annex III of the Decree of the Minister of Environment No. 05/2012 on Type of Business and/or Activities Requiring Environmental Impact Assessment, identifies 20 (twenty)
classifications of protected areas (by regulation under Ministry of Forestry, Ministry of Public Work, etc.) as follows:

(i) Protected forest area;
(ii) Peat area;
(iii) Watershed (catchment) area.
(iv) Coast demarcation (corridor);
(v) River demarcation (corridor);
(vi) Area around lake or reservoir;
(vii) Flora sanctuary and marine sanctuary;
(viii) Natural reserve and marine reserve;
(ix) Mangrove forested coast area;
(x) National park and national marine park;
(xi) Forest park;
(xii) Natural tourism park and marine tourism park;
(xiii) Cultural and knowledge heritage area;
(xiv) Natural geology reserve area;
(xv) Groundwater recharge area;
(xvi) Spring demarcation;
(xvii) Genetic protection area;
(xviii) Fauna refugee area;
(xix) Coral reef; and
(xx) Corridor area for protected flora or marine biota.

43. For these areas, the Decree of Minister of Environment No. 05/2012 considers that uses not in line with the purpose of the original protection should be avoided. These areas are normally identified in Spatial Planning documents and based on current studies are not likely to be associated with the Project.

44. This sitting criterion also corresponds with ADB Environmental Safeguard – Good Practices Working Source Book (2012 Draft), which prevents sitting of projects on critical habitat. According to this sourcebook critical habitat is defined as an area that has high biodiversity value and may include sites that are legally protected or officially proposed for protection such as areas that meet International Union for Conservation of Nature (IUCN) classification criteria, Ramsar List of Wetlands of International Importance, and United Nations Educational, Scientific, and Cultural Organization (UNESCO) world natural heritage sites.

2. Preparation of Environmental Assessments

45. An IEE for the Ciujung core subproject has already been prepared and submitted to ADB. An AMDAL has also been prepared and approved in accordance with the Government requirements. The environmental management and monitoring plan of the AMDAL has been included in Appendix 4 of the IEE to ensure consistency.

46. To avoid duplication of efforts, for the future subprojects that are to be identified, the full AMDAL or UKL/UPL reports—depending on categorization—will be prepared and finalized in consultation with ADB. Upon incorporation of ADB’s comments to ensure that the AMDAL or

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9 AMDAL document has been approved by BLH Kabupaten Serang (Ref. 666/97/Penceg/BLH/2014 dated 29 October 2014), and subsequently endorsed by Regent of Kabupaten Serang by issuing Environmental Permit (Ref. 666.1/105/BLH/2014 dated 03 November 2014).
UKL/UPL meet SPS 2009 requirements, the English version of government approved AMDAL will be submitted to ADB and accepted as the IEE/EIA. The operational steps for ensuring environmental safeguard implementation will be included in the relevant standard operation procedures (SOP).

47. For AMDAL or UKL/UPL studies to be accepted by ADB as an EIA (for a category A subproject) or IEE (for a category B subproject), they need to be prepared in accordance with the requirements of ADB’s SPS 2009. The assessment will be undertaken as part of the Feasibility Study and the environmental assessment team will work closely with the technical planning and design group to ensure that environmental considerations are integrated into the project design.

48. An IEE study deals with the same issues as an EIA, but is narrower in scope and issues may be covered in less detail. An IEE examines the project’s potential negative and positive impacts and recommends measures needed to prevent, minimize, mitigate or compensate for adverse impacts and improve environmental performance. As mitigation is relatively straightforward, the IEE may not require a comprehensive analysis of project alternatives nor detailed Environmental Management Plan (EMP) as in an EIA, and may involve less public consultation. Stakeholders will however be consulted at least once (during the preparation of IEE\textsuperscript{10}), and may be involved at an earlier stage if deemed necessary by PIUs and/or ADB.

49. If a Category A subproject is considered for financing, the AMDAL will be undertaken at Detailed Engineering Design (DED) stage, or if carried out earlier during the Feasibility Study, the assessment and its findings will be reviewed during the DED and revised if necessary to reflect any changes in the project or to revise interpretations as a result of more information becoming available.

50. For an AMDAL to be accepted as an EIA, it will examine the project’s potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the “without project” situation), and recommends measures needed to prevent, minimize, mitigate or compensate for adverse impacts and improve environmental performance. The EIA is a more comprehensive and detailed study than an IEE and as mitigation is generally more complex, an EIA should always include an Environmental Management Plan (EMP) setting out in detail how each mitigation measure will be provided and monitored. An EIA also requires a greater degree of consultation, as stakeholders are involved at an early stage in deciding the scope of the EIA study, as well as determining its outcome and the nature of the mitigation at draft final report stage.

51. The preparation of the documents will consider all potential impacts and risks of the project on physical, biological, socioeconomic (occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods) and physical cultural resources in an integrated way. Impacts and risks will be analyzed in the context of the project’s area of influence, which encompasses:

(i) the primary project site(s) and related facilities;
(ii) associated facilities that are not funded as part of the project;
(iii) areas and communities potentially affected by cumulative impacts; and

\textsuperscript{10} Consultations done for IEE for the Cujung Dike Construction core subproject.
(iv) areas and communities potentially affected by impacts from unplanned but predictable developments caused by the project.

52. Environmental impacts and risks will also be analyzed for all relevant stages of the project cycle, including pre-construction, construction, and post construction (operations and maintenance) activities. Potential trans-boundary effects such as air pollution, as well as global impacts such as emission of greenhouse gases (climate change) are considered highly unlikely to be relevant for any Project activity. Impacts on endangered species and habitats would be considered. The environmental assessment will examine whether particular individuals and groups may be differentially or disproportionately affected by the project’s potential adverse environmental impacts because of their disadvantaged or vulnerable status, in particular the poor, women and children, and indigenous peoples (if any).

3. Preparation of Environmental Management Plans

53. The project proponent shall prepare an Environmental Management Plan (EMP) for each of the subprojects. The EMP will address the potential impacts and risks identified in the environmental assessment. The EMP will include the proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organizational arrangements, capacity development and training plans, implementation schedule, cost estimates, and performance indicators. The outline of the EMP is provided in Appendix 4. An EMP outlining the specific environmental measures to be adhered to during implementation of the Ciujung Dike Construction core subproject has been prepared and included in the IEE of the subproject.

54. EMPs of future subprojects will be prepared by the PIUs with assistance from the national environmental safeguard specialist following ADB SPS 2009 and Government’s regulations. Each EMP will include the proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators. If some residual impacts are likely to remain significant after mitigation, the EMP will also include appropriate compensatory measures (offset) to ensure that the project does not cause significant degradation of the environment. The EMP will define expected outcomes as measurable events to the extent possible and will include performance indicators or targets that can be tracked over defined periods. The EMP will be responsive to changes in project design such as a major change in project location, or in technology, unforeseen events, and monitoring results. The EMP will incorporate pollution prevention and control measures consistent with international good practice, measures to provide workers with safe and healthy working environment, and preventative measures and plans to address risks to and potential impacts on the safety of affected communities.

55. Considering the importance of the construction phase in this Project with respect to potential environmental effects, specific focus is being given to effective integration of the EMP during the design of the subproject, and then into the bid/contract documents and actual construction.

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11 Initial Environmental Examination: Ciujung Core Subproject (accessible from the list of linked documents in Appendix 2 of the Report and Recommendation of the President to the Board of Directors).
56. For subprojects with potentially significant adverse impacts that are diverse, irreversible, or unprecedented (category A), if they are to be proposed, there will be examined alternatives to the project's location, design, technology, and components that would avoid, and, if avoidance is not possible, minimize adverse environmental impacts and risks. The rationale for selecting a particular subproject location, design, technology, and components will be properly documented, including, cost-benefit analysis, taking environmental costs and benefits of the various alternatives considered into account. The "no action" alternative will be also considered. The current core subprojects do not have "significant adverse impacts that are diverse, irreversible, or unprecedented". For future subprojects, this aspect will be checked.

57. During project implementation, the PIUs monitor execution of the EMP as well as the mitigation of any unexpected adverse environmental impacts. If there is a significant change in project scope, the PIUs shall ensure that an environmental assessment is triggered, undertaken by the project proponent. PIUs shall prepare and submit to the CPMU a semi-annual monitoring report, which describes EMP implementation and results, compliance with loan covenants and applicable national environmental legislation, and the overall performance of PIU's environmental management system and any required improvements. Finally PIUs shall ensure that the EMP is included in tender and contract documents for projects. The CPMU will consolidate all monitoring reports from the PIUs and submit the consolidated the semi-annual monitoring reports to ADB no later than 60 days since the end of the reporting period.

58. Where unanticipated environmental impacts become apparent during project implementation, the PIUs will update the environmental assessment documents and EMP or prepare a new environmental assessment to assess the potential impacts, evaluate the alternatives, and outline mitigation measures and resources (new EMP) to address those impacts.
V. CONSULTATION, INFORMATION DISCLOSURE AND GRIEVANCE REDRESS MECHANISM

A. Consultation and Disclosure Mechanism

59. ADB’s SPS 2009 requires projects to carry out meaningful public consultations on an ongoing basis. Additional consultation/s may be held as necessary. The Government’s Decree on AMDAL requires public consultation during the early stage of AMDAL preparation. For both Category A and B subproject investments, the PIUs will consult with people and groups likely to be potentially affected by the proposed development, plus local non-governmental organizations and other stakeholders. For category B subprojects at least one consultation will be conducted, with the aim of informing stakeholders about the project, its potential impacts and likely mitigation. For Category A subprojects there will be at least one further consultation at the beginning of the AMDAL study, to involve stakeholders in determining the scope of the AMDAL and allow them to raise any issues of particular local concern. In all cases, additional consultations will be held (with particular groups or individuals, or with all stakeholder representatives) if considered necessary.

60. The PIUs as implementing agencies will carry out consultation with affected people and other concerned stakeholders, including civil society, and facilitate their participation. The consultation process will (i) begin early in the project preparation stage and be carried out as set forth throughout the project cycle; (ii) provide timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) undertaken in an atmosphere free of intimidation or coercion; (iv) gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enable incorporation of all relevant views of affected people and other stakeholders into decision making.

61. The consultation process and its results will be documented and reflected in environmental assessment reports. The PIUs shall establish a mechanism to receive and facilitate resolution of affected peoples’ concerns, complaints, and grievances about the project’s environmental performance, as will be discussed later in Section V.B. Grievance Redress Mechanism.

62. For the Ciujung core subproject, public consultation has been carried out during the initial phase of AMDAL with two kinds of media, i.e., announcement in local paper (27 February 2014), and face to face public consultation (12 March 2014). Basically the stakeholders agree with the proposed flood control subproject.

63. Communication and interaction were made in Bahasa Indonesia with some local dialect. The papers, documents (including minutes of meeting, list of attendants, statement on project (agreement or disagreement, and sample questionnaires) are well documented and incorporated in the Terms of Reference for the environmental impact analysis (KA-ANDAL). All relevant views raised during the consultation have been incorporated in the KA-ANDAL for actual study of environmental impact assessment.

64. As noted in the IEE for the Ciujung core subproject public consultation and focus group discussion (FGD) was held with stakeholders in Serang on 13 to 15 May 2013. In addition to other project issues, environmental issues were also discussed. A serial of Inventory of Losses and Social Economic Survey at village level in five sub-districts in Kabupaten Serang (from 13 March 2014 to 24 March 2014) also identified environmental issues and people concerns, with these being addressed in the IEE already prepared.
65. For future subprojects, the PIUs will submit all environmental safeguard documents in English and Bahasa Indonesia to the CPMU, which upon their endorsement will submit documents for disclosure on ADB’s website pursuant to the ADB SPS 2009. All the following reports will be disclosed within 14 days of receipt from the executing agency:

(i) TOR for ANDAL (“KA ANDAL”) (if accepted as EIA by ADB for category A subprojects);
(ii) final AMDAL (if accepted as EIA or IEE by ADB);
(iii) final UKL/UPL (if accepted as IEE by ADB);
(iv) new or updated AMDAL/UKL/UPL (if accepted as EIA/IEE by ADB) and corrective action plan prepared during project implementation, if any; and
(v) environmental monitoring reports.

66. The PIUs and CPMU will provide relevant environmental information, including information from these documents in a timely manner, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders.

B. Grievance Redress Mechanism

67. An affected person (AP) can approach the village heads or BBWS/BWS to raise his/her complaints/concerns, and in some areas (e.g. in the Ciujung priority area) there are regulations requiring that a permit be obtained should there be an activity which might annoy the public. If a lodged complaint is not acted on promptly, or if AP is not satisfied with the resolution undertaken, he/she can avail of the grievance redress mechanism (GRM) set forth.

68. In the first instance the various types and public consultation associated with project preparation and especially the social/land acquisition activities and the AMDAL process has and continues to provide the opportunity for the public to raise and have considered individual specific concerns about aspects of the project, and especially for the core priority structural sub-project. Additionally during the preparation phase there is considerable consultation with various levels of local government (district, sub-district, village, sub-village and sub-sub village) and it is expected that particularly at the lower levels the officials are well aware of the concerns and interests of the communities they represent. Furthermore, the design engineers for the structural subprojects were and are very aware of the interests of the communities and of feedback from the social and environmental specialists and incorporated as appropriate these aspects into their designs.

69. During structural subproject implementation the issue clearly identified as being of most interest to the local communities, namely land acquisition and resettlement (LAR), has a very well defined and established Grievance Redress Mechanism (GRM) as defined in the resettlement framework.

70. The other aspects of probable community interest during structural subproject implementation can generally be categorized as “nuisance” such noise, dust, altered access, congestion as may, but not necessarily will, occur during construction. Construction contract documentation specifically will include conditions relating to the mitigation of such nuisance conditions as well as to the requirement for the contractors to engage with local officials and the communities in establishing detailed work plans and also for the contractor to have a nominated contact person (and/or mobile phone number) to which local officials and the members of the community can address complaints should they believe that unreasonable “nuisance” conditions are occurring during construction. In addition, the implementation of the construction contracts is
under the direct control and management of the Project owners (BBWS 3 Cis or BWSM) and through them the official Supervising Engineers who are on-site continually monitoring implementation of construction contract conditions and with the power to require as appropriate immediate corrective action should those conditions not be met. The Supervising Engineers will have responsibility for approving contractor detailed work plans and ensuring that there has been appropriate consultation with the officials and community. Furthermore, the Supervising Engineer will have specific responsibilities as defined in his/her Supervising Engineer – Project Owner Contract to be very aware of local community concerns and to also have a nominated person and/ or mobile phone contact number that can be accessed by any local official and/ or member of the community. The names, mobile phone numbers and location of site offices of both the construction contractor and the Supervising Engineer will be advised in writing to local officials and also placed on public notice boards in the area.

71. More generally in Indonesia there are regulations in many places (including in the area of the Ciujung structural core subproject) where it is necessary for a permit to be obtained from the local government for any activity that could potentially cause a public nuisance and this requirement will be adhered to throughout project implementation.

72. At a “higher” level should local officials and community members not be satisfied with how complaints have been addressed in relation to construction activities by either the construction contractor or the Supervising Engineer there will be mechanisms to be developed and approved in detail by the “project implementation” entities, including but not limited to CPMU, PIUs, IA’s, consultants (see Project Administration Manual and other Project Linked Documents for full details of Project Organizational Structure) that will enable local officials and community members to have their concerns raised and considered at a higher level as indicatively presented in the following figure.
73. The GRM will apply for all complaints that are associated with the project (not only social related issues, but also environmental, technical issues and others). The project GRM will follow the following key principles:

(i) Complainants can file complaints at no costs, through different alternative media, addressed to complaint handling units set up at different levels and/or to a contact addresses and/or website dedicated specially for complaint handling;
(ii) Complainants will be given an accessible, non-threatening, equal, and fair treatment for complaint follow-up and for dispute resolution, regardless of origins, religion, citizenship status, social and economic background;
(iii) Complaints or disputes will be preferably resolved at the earliest time at the sub-project site. Only in the case that follow-up on complaints and disputes are unresolved at the lower level, the cases will be brought to the attention of the higher levels of the government structure;
(iv) Follow-up on complaints and resolution of any disputes will be made based on agreements reached among all involved parties through a well-informed consultation processes with facilitation by a competent, trustworthy and credible team;
(v) The complaint handling mechanisms/system will maintain the objectivity, transparency, and fairness principles;
(vi) Complaints and disputes, as well as follow-up actions and resolutions will be recorded in real time through a web-based system and/or disclosed to the public;
(vii) Socialization, dissemination, and disclosure of the complaint handling system/procedures as well as of the complaints and follow-up actions and dispute resolution will be done continuously at the sub-project site, municipality and provincial levels.

74. The CPMU, PIUs, and BBWS/BWS will make the public aware of the GRM through public awareness campaigns, training and capacity building. Each BBWS/BWS will nominate and train one of their staff to be a Grievance Point Person (GPP) or other similar title for environment-related issues. Any person who has complaints regarding the environmental performance of the subproject during pre-construction, construction and operation phases shall have access to the GRM described in the subsequent section. The GPP will determine if the complaint is eligible and will work with the contractor to ensure all eligible concerns are addressed.

75. The GPP will ensure that:

(i) the grievance redress mechanism and the contact details of the GPPs are publicly disclosed, and posted in the offices of the affected communes and in strategic places of the subproject’s area of influence;
(ii) the grievance redress mechanism is accessible to all affected communities;
(iii) the public, especially the residents and passers-by in the vicinities of influence of the subproject, are aware of their rights to access, and shall have access to the mechanism free of administrative and legal charges; and
(iv) a registry of grievances received is maintained for reporting to ADB and higher Government authorities on associated follow-up, resolution or non-resolution of issues.
VI. INSTITUTIONAL ARRANGEMENT AND RESPONSIBILITIES

A. Institution and Responsibilities

76. The Ministry of Public Works and Housing (MPWH) through the Directorate General of Water Resources (DGWR) will be the executing agency. A Central Project Management Unit (CPMU) will be established in the Directorate of Water Resources Development (DWRD) under the executing agency. The implementing agencies will include the river basin organizations (RBOs), namely the Balai Besar Wilayah Sungai Cidanau-Ciujung-Cidurian (BBWS 3 Cis), the Balai Wilayah Sungai (BWS) Maluku for each area under the DGWR, the Directorate General of Agricultural Infrastructure and Facility (DGAIF) under the Ministry of Agriculture and the Directorate General of Regional Development (DGRD) under the Ministry of Home Affairs (MOHA). Project Implementation Units (PIUs) will be established in each implementing agencies. The river basin coordination bodies will provide strategic guidance at basin level. Provincial Project Management Units (PPMUs) and District Project Management Units (DPMUs) will be established under MOHA’s supervision to ensure coordination with provincial and district agencies. Through the Directorate of Water Resources and Irrigation (DWRI), under the National Planning Agency (BAPPENAS), a CPIU will be established to support the NSCWR for the provision of independent monitoring, evaluation and strategic coordination of activities.

77. During implementation, the CPMU, with assistance from the national environmental safeguard specialist (TOR of the environmental safeguard specialist is in Appendix 6) of the Detailed Engineering Design, construction supervision and Implementation Consultant team, shall be responsible for the following activities related to environmental safeguards: (i) screen all subprojects for categorization in accordance with ADB SPS 2009 and Government of Indonesia and submit to ADB for approval; (ii) contract an accredited agency to prepare UKL/UPL or AMDAL study (in Bahasa Indonesia and English) as required based on the categorization; (iii) ensure the UKL/UPL or AMDAL meet ADB SPS 2009 requirements as described in the EARF; (iv) ensure that the UKL/UPL or AMDAL has been approved by the respective environment agency; (v) consolidate semi-annual environmental monitoring reports; (vi) ensure timely disclosure of final AMDAL and updated EMP in locations and form accessible to the public; and (vii) address, record, and report on any grievances brought about through the Grievance Redress Mechanism in a timely manner.

78. The PIUs, with assistance from the environmental officers (see para. 85) will: (i) confirm that the EMP is included in the bidding documents and civil works contracts; (ii) ensure Contractor’s EMPs are prepared by contractors prior to actual construction; (iii) supervise the implementation of environmental mitigating measures required for the construction activities; (iv) review, monitor and evaluate the effectiveness of the implemented Contractor’s EMPs, and recommend necessary corrective actions; (v) prepare monthly and quarterly environmental monitoring reports and submit quarterly environmental monitoring report to the CPMU during construction phase of the subprojects; (vi) prepare and submit semi-annual environmental monitoring report to the CPMU during the operational phase of the subprojects; (vii) contract an independent safeguard monitoring entity to conduct water quality monitoring as specified in the IEEs and AMDAL environmental monitoring plans; and (viii) address, record, and report on any grievances brought about through the Grievance Redress Mechanism in a timely manner.

79. Screening and categorization. The CPMU, with assistance from the national environmental safeguard specialist, will screen every future subproject for categorization using the relevant REA checklists (Appendix 2) according to ADB, and the AMDAL criteria (Appendix
3) according to the Government regulations. The categorization forms and REA checklists will be submitted to CPMU for endorsement, and then to ADB for review and approval.

80. As confirmed in para. 5 above, if a category A subproject is proposed, the categorization of the entire Project will be changed to category A as well. The categorization and REA checklist of the first category A subproject will be submitted to ADB by the executing agency, upon which an internal process in ADB will start to review and consider approval the recategorization of the entire project to category A. No further action will be taken by the executing agency until ADB has provided approval of the new categorization.

81. **Preparation of environmental impact assessments of future subprojects.** Upon ADB’s approval of the categorization, the BBWS 3 Cis/BWSM will contract an accredited agency to undertake the AMDAL or UKL/UPL following the AMDAL process (Figure 1). The national environmental safeguard will ensure that the AMDAL or UKL/UPL meet requirements of either an EIA or IEE, including an EMP, as described in paras 47-58 above in order to be accepted by ADB as an EIA or IEE. The BBWS 3 Cis/BWSM will (i) ensure approval of the AMDAL and UKL/UPL by the relevant environment authority at the provincial or district level; and (ii) issuance of environmental clearance/permit as part of the AMDAL process. To avoid duplication of efforts, the BBWS 3 Cis/BWSM will prepare and finalize the full AMDAL or UKL/UPL reports in consultation with ADB. Upon incorporation of ADB’s comments to ensure that the AMDAL or UKL/UPL meet SPS 2009 requirements, the English version of government approved AMDAL will be submitted to ADB and accepted as the IEE/EIA. Disbursements for the subproject investment can only proceed upon ADB and government approval of the relevant AMDAL studies or UKL/UPL.

82. **Implementation.** The implementation of mitigation measures, as described in the AMDAL and UKL/UPL, including the EMP, will be the responsibility of the PIUs based on contracts with the contractor/developer, with assistance from the environmental officers, under guidance of the CPMU’s national environmental safeguard specialist.

83. **Monitoring and reporting.** An independent safeguard monitoring entity will be engaged by each PIU to conduct environmental safeguards monitoring for the subprojects as specified in the environmental monitoring plan under the IEES and the AMDAL. They will provide quarterly environmental safeguard monitoring reports to the PIU. A draft TOR of the safeguard monitoring entity is provided in Appendix 8.

84. **Capacity development.** Capacity development will be undertaken under the sub component of the Project. It will be implemented through participation in relevant courses and seminars and through “learning-by-doing” or “on-the-job training”, to be provided by the national environmental safeguard specialist.

**B. Staffing Requirements and Budget**

85. An environment officer (government seconded staff) will be appointed to each of the PIUs under the BBWS/BWS to play the lead role in implementing, monitoring and ensuring compliance with the EARF provisions of the Project, the approved IEE of the core subproject, and the AMDAL/UKL/UPL studies of future subprojects. The TOR of the environment officer is presented in Appendix 7. The environment officer will have day-to-day responsibility to ensure that an environmental management system, including mitigating measures, environmental monitoring, and the acquisition of government permits and clearances, is effectively implemented, though “corporate” responsibility will be with the heads of various organizations.
The environment officer will be assisted by a national environmental safeguard specialist (consultant) with extensive experience in flood management and water resource management. The national environmental safeguard specialist will be engaged by the CPMU and (s)he will assist in capability building, as well as periodically audit the implementation of the mitigation measures and monitoring plan, and advise the project on issues related to environmental management to the CPMU and all the PIUs. The TOR of the national environmental safeguard specialist is presented in Appendix 6.

86. A certified agency will be contracted to assist in the development of the AMDAL and the UKL/UPL studies to meet the environmental safeguard requirements of both ADB and the Government.

87. **Budget Estimates of Environmental Management.** The cost of the environment officers in the PIUs is included in the budget of the executing agency and implementing agencies under the loan. An allocation of US$988,000 is proposed, which is described in detail in Table 4 below.

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<tr>
<th>Table 4: Proposed Budget for Environmental Management of the Project</th>
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<tbody>
<tr>
<td><strong>Cost Item</strong></td>
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<tr>
<td>Environment officer</td>
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<td>IEE, AMDAL and UKL/UPL studies</td>
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<td>- IEE</td>
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<td>- AMDAL</td>
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<td>- UKL/UPL</td>
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<tr>
<td>National Environmental Safeguard Specialist</td>
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<tr>
<td>Training workshops</td>
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<tr>
<td>Independent environmental monitoring</td>
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<td><strong>Total</strong></td>
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### APPENDIX 1: FLOOD MANAGEMENT IN SELECTED RIVER BASINS
#### PROJECT OUTPUTS AND SUBCOMPONENTS

| Component |  
|-----------|--------------------------------------------------|
| **Output 1: Planning for flood risk management enhanced** |  
| 1.A | Enhanced basin data and information and preparation of flood risks management (FRM) plans for the 3 Cis RBT and Ambon–Seram RBT (BBWS 3 Cis and BWSM)  
| 1.B | Institutional strengthening, planning and coordination for the implementation of FRM plans in 3Cis RBT and Ambon-Seram RBT (MOHA)  
| **Output 2: Land management improved and flood infrastructure upgraded** |  
| 2.A | Farmland management and sustainable agriculture practices in the Ciujung river basin (MOA)  
| 2.B | Improved runoff and erosion control in 3Cis RBT and Ambon-Seram RBT (MOHA)  
| 2.C | Detailed engineering design (DED) (including Environmental Impact Assessment (EIA), social safeguards, economic analysis, tender documents and river operation and maintenance plans) and Construction Supervision for the 3 CIs RBT and Ambon-Seram RBT (DGWR, BBWS 3 Cis and BWSM)  
| 2.D | Civil works for the 3 CIs and Ambon-Seram RBTs (Priority works, rehabilitation of flood control embankments, drainage system and associated control structures information) (BBWS 3 Cis and BWSM)  
| **Output 3: Capacity for community-based flood risk management (CBFRM) enhanced** |  
| 3.A | Enhanced capacity for community-based flood risk management in the 3Cis RBT and Ambon-Seram RBT (MOHA)  
| **Output 4: Policy, coordination and capacity at national level improved** |  
| 4.A | Project Management (DGWR - MPW)  
| 4.B | Independent Monitoring, Evaluation and Strategic Coordination BAPPENAS (IME)  

BBWS 3 Cis = Balai Besar Wilayah Sungai Cidanau-Ciujung-Cidurian, BWSM = Balai Wilayah Sungai Maluku, CBFRM = Community-based flood risk management, DGWR = Directorate General of Water Resources, MOA = Ministry of Agriculture, MOHA = Ministry of Home Affairs, MPW = Ministry of Public Works, RBT = river basin territory
APPENDIX 2: RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST TEMPLATE
FORESTRY

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

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Country/Project Title: Flood Management in Selected River Basins Sector Project

Sector Division: Environment, Natural Resources and Agriculture Division

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## A Checklist for Preliminary Climate Risk Screening

### Country/Project Title:

### Sector :

### Subsector:

### Division/Department:

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Result of Initial Screening (Low, Medium, High): __________

Other Comments: ____________________________________________________________
_________________________________________________________________________

Prepared by: _________________
RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST TEMPLATE
DRAINAGE

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<td><strong>Location and Design of project</strong></td>
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<td>Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?</td>
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<tr>
<td>Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc.)?</td>
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<tr>
<td><strong>Materials and Maintenance</strong></td>
<td></td>
<td></td>
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<tr>
<td>Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?</td>
<td></td>
<td></td>
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<tr>
<td>Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?</td>
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<td></td>
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<tr>
<td><strong>Performance of project outputs</strong></td>
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<tr>
<td>Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?</td>
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Result of Initial Screening (Low, Medium, High): [Blank]

Other Comments: [Blank]

Prepared by: [Blank]

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## APPENDIX 3: INDONESIA AMDAL SCREENING CRITERIA (SELECTED SECTORS)

### 3.1 Water Resource Works (Permen PU No. 10/2008)

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<tr>
<th>No.</th>
<th>Type of Activities</th>
<th>Scale/ Magnitude</th>
<th>Scientific Reasons</th>
<th>Special Reasons</th>
</tr>
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<tr>
<td></td>
<td></td>
<td>UKL/UPL</td>
<td>AMDAL</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Development of dam/reservoir</td>
<td></td>
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<tr>
<td></td>
<td>a. Development of dam/reservoir or other water storages</td>
<td></td>
<td></td>
<td>Change of natural landscape and topography, change of environment and aquatic ecosystem, and exploitation of natural resource, river morphology, effect to social, economic and cultural setting and technology application</td>
</tr>
<tr>
<td></td>
<td>- Height (m)</td>
<td>6 to &lt; 15</td>
<td>&gt; 15</td>
<td></td>
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<td></td>
<td></td>
<td>50 to &lt; 200</td>
<td>&gt; 200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Spread of inundation (ha)</td>
<td></td>
<td></td>
<td>Change of regional ecosystem, water balance, pesticide pollution, potential erosion and sedimentation, utilization of water resource, change of social, economic and culture</td>
</tr>
<tr>
<td></td>
<td>- Volume of storage (m³)</td>
<td>300,000</td>
<td>-</td>
<td>Change of availability of water resource, affect social, economic and culture of local people</td>
</tr>
<tr>
<td></td>
<td></td>
<td>500,000</td>
<td>&gt; 500,000</td>
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<td></td>
<td>b. Rehabilitation of dam/reservoir or other water storages</td>
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<td>- Height (m)</td>
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<td></td>
<td></td>
<td>500,000</td>
<td>&gt; 500,000</td>
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<tr>
<td>2</td>
<td>Irrigation Scheme</td>
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<tr>
<td></td>
<td>a. New development (ha)</td>
<td>500 to &lt; 2000</td>
<td>&gt; 2000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Improvement (ha)</td>
<td>500 to &lt; 1000</td>
<td>&gt; 1000</td>
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</tr>
<tr>
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<td></td>
<td></td>
<td>natural landscape and topography, increased commercialization and use of water resources, affect social, economic and culture of local people</td>
<td>water balance, pesticide pollution, potential erosion and sedimentation, utilization of water resource, change of social, economic and culture</td>
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<td>c.</td>
<td>Construction of new rice fields (ha) (per cluster)</td>
<td>100 to &lt; 500</td>
<td>&gt; 500</td>
<td>Change of natural landscape and topography, increased commercialization and use of water resources, affect social, economic and culture of local people</td>
</tr>
<tr>
<td>3</td>
<td>Swamp Development (swamp reclamation for agriculture cultivation) (ha)</td>
<td>500 to &lt; 1000</td>
<td>&gt; 1000</td>
<td>Change of natural landscape, affect regional natural resource conservation, protection of cultural sanctuary and social, economic and culture of local people</td>
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<td></td>
<td>Development of coastal defense and improvement of estuary</td>
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<tr>
<td></td>
<td>Parallel with coast (sea wall/revetment) (km)</td>
<td>&lt; 1</td>
<td>&gt; 1</td>
<td>Change of rate of sediment transport along the coast that affect to landscape and land topography, affect to aquatic organism, change of social and culture</td>
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<tr>
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<td>Perpendicular with coast (groin, breakwater) (m)</td>
<td>10 to &lt; 500</td>
<td>&gt; 500</td>
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<td>River Dike Construction (including diversion) and</td>
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<td></td>
<td>construction of flood canal</td>
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<tr>
<td>a.</td>
<td>In metropolitan/large city</td>
<td>1 to &lt;5 50000 to 500000</td>
<td>&gt;5 &gt;500000</td>
<td>Change of natural landscape, topography, change of river ecosystem, change of river morphology, and effect to social, economic and culture of local people</td>
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<td>b.</td>
<td>In medium city</td>
<td>3 to &lt;10 100000 to 500000</td>
<td>&gt;10 &gt;500000</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>In rural areas</td>
<td>5 to &lt;15 150000 to 500000</td>
<td>&gt;15 &gt;500000</td>
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### 3.2 Other Related Multi Sectors (PermenLH No. 5/2012)

Below provided AMDAL criteria for other sectors (multi-sector) that may involved in FMSRB.

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<td>Potentially to generate impacts, among others:</td>
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<tr>
<td></td>
<td>A Width of the reclamation area (ha)</td>
<td>≥ 25</td>
<td>- Hydro-oceanography, covering tidal, current, wave and sea bed sediment</td>
</tr>
<tr>
<td></td>
<td>B Volume of fill material (m3)</td>
<td>≥ 500,000</td>
<td>- Hydrology, covering rainfall, groundwater, river or stream flow, and run-off</td>
</tr>
<tr>
<td></td>
<td>C Length of the reclamation (m)</td>
<td>≥ 50 (perpendicular toward sea from coastline)</td>
<td>- Bathymetry, covering depth contour of water bottom</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Topography, covering contour of terrestrial surface</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Geomorphology, covering shape and typology of coast</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Geotechnical, covering physical and mechanical features of soil surface</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Social impact</td>
</tr>
<tr>
<td>2.</td>
<td>Cutting hill and fill of land, with</td>
<td>≥ 500,000</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Type of Activities</td>
<td>Scale/Magnitude</td>
<td>Special Scientific Reasons</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------</td>
<td>-----------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td></td>
<td>volume (m³)</td>
<td></td>
<td>- Landslide and increasing run-off and flood</td>
</tr>
<tr>
<td>3</td>
<td>Aquaculture</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|     | **A** Advanced and medium technology aquaculture for shrimp/fish with or without processing unit | > 50 | o Damaged mangrove ecosystem that becomes breeding site and nursery areas will affect productivity in the area.  
  o Several environmental components that will be affected are: organic contents, BOD, COD, DO, turbidity, number of *phytoplankton* and increase of virus and bacteria.  
  o The higher technology application, the waste generation that indicated will lead to negative impact to surrounding water/ecosystem |
|     | - Area (ha)       |                 |                           |
| 8   | b. Floating fish cage (floating net and pen system): | > 2.5  
  > 500 | ➢ Change of water quality  
  ➢ Effect of current change and use of water space  
  ➢ Effect to water aesthetic.  
  ➢ Disturb navigation pathway. |
|     | - In fresh water (lake) |                 |                           |
|     | Area (ha), or      |                 |                           |
|     | Number (unit)      |                 |                           |
### 3.3 Agriculture (Watershed Management Related) Sector (Permen LH No. 5/2012)

Below provided AMDAL criteria for agriculture sector that may involved in FMSRB (watershed management), especially Vegetative Engineering (Agriculture Practice).

<table>
<thead>
<tr>
<th>No.</th>
<th>Type of Activities</th>
<th>Scale/ Magnitude</th>
<th>Scientific Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cultivation of food crops with or without processing unit, with area (ha) &gt; 2,000</td>
<td></td>
<td>Activities will affect to ecosystem, hydrology, and natural landscape</td>
</tr>
<tr>
<td>2</td>
<td>Cultivation of horticulture crops with or without processing unit, with area (ha) &gt; 5,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cultivation of plantation crops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a</td>
<td>Seasonal with or without processing unit:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Within non-forestry cultivation area, area (ha) &gt; 2,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) Within convertible production forest area (HPK), area (ha) &gt; 2,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3b</td>
<td>Perennial with or without processing unit:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Within non-forestry cultivation area, area (ha) &gt; 3,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) Within convertible production forest area (HPK), area (ha) &gt; 3,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 4: OUTLINE OF ENVIRONMENTAL MANAGEMENT PLAN (EMP)

4.1 Template for Summarizing Mitigation Measures

<table>
<thead>
<tr>
<th>Project Stage</th>
<th>Project Activity</th>
<th>Potential Environmental Impacts</th>
<th>Proposed Mitigation Measures</th>
<th>Institutional Responsibilities</th>
<th>Cost Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Construction Phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation and Maintenance Phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2 Template for Summarizing Monitoring Requirements

<table>
<thead>
<tr>
<th>Mitigation Measure</th>
<th>Parameters To be Monitored</th>
<th>Location</th>
<th>Measurements</th>
<th>Frequency</th>
<th>Responsibilities</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Construction Phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation and Maintenance Phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 5: OUTLINE OF INITIAL ENVIRONMENTAL EXAMINATION (IEE)

I. SIEE (Summary of IEE)

A. Introduction (1/2 page)
   This section will include the purpose of the report, extent of the IEE study and brief description of any special techniques or methods used.

B. Description of the Project (1/2 page)
   This section will include the type of and need for the project; and project location, size or magnitude, operation, and proposed schedule for implementation.

C. Description of the Environment (2 pages)
   This section will include the physical and ecological resources, human and economic development, and quality of life values.

D. Forecasting Environmental Impacts and Mitigation Measures (2-4 pages)
   This section will identify "no significant impacts" from those with significant adverse impacts and will discuss the appropriate mitigation measures, where necessary.

E. Institutional Requirements and Environmental Monitoring Plan (1 page)
   This section will describe the impacts to be mitigated, and activities to implement the mitigation measures, including how, when, and where they will be implemented. The environmental monitoring plan will describe the impacts to be monitored, and when and where monitoring activities will be carried out, and who will carry them out.

F. Public Consultation and Disclosure
   This section will describe the process undertaken to involve the public in project design and recommended measures for continuing public participation; summarize major comments received from beneficiaries, local officials, community leaders, NGOs, and others, and describe how these comments were addressed; list milestones in public involvement such as dates, attendance, and topics of public meetings; list recipients of this document and other project related documents; describe compliance with relevant regulatory requirements for public participation; and summarize other related materials or activities, such as press releases and notifications. This section will provide of summary of information disclosed to date and procedures for future disclosure.

G. Findings and Recommendations (1-2 pages)
   This section will include an evaluation of the screening process, and recommendation will be provided whether significant environmental impacts exist needing further detailed study or EIA. If there is no need for further study, the IEE itself, which at times may need to be supplemented by a special study in view of some small significant impacts, becomes the completed EIA for the project and no follow-up EIA will be needed.

   If further additional study is needed, then this section will include a brief terms of reference (TOR) for the needed follow-up EIA, including approximate descriptions of work tasks, professional skills required, time required, and estimated costs. The Bank's Environment Guidelines provides a guide for preparing the TOR for different projects.

H. Conclusions (1/2 page)
   This section will discuss the result of the IEE and justification if any of the need for additional study or EIA. If an IEE or an IEE supplemented by a special study is sufficient for the project, then the IEE with the recommended institutional requirements and monitoring program become the completed EIA.
II. IEE Report

A. Introduction
B. Description of the Project
C. Description of the Environment
D. Screening of Potential Environmental Impacts and Mitigation Measures
E. Institutional Requirements and Environmental Monitoring Plan
F. Public Consultation and Information Disclosure
G. Findings and Recommendation
H. Conclusions
APPENDIX 6: TERMS OF REFERENCE FOR
NATIONAL ENVIRONMENTAL SAFEGUARD SPECIALIST

1. The National Environmental Safeguard Specialist will have at least a Bachelor’s Degree in Environmental Management/Science, or equivalent, and will have at least 7 years of experience in the fields of flood and water resource management. S/he should have proper accreditation from the government as an environmental assessment consultant and should be fluent in English and Bahasa Indonesia. Familiarity with ADB environmental safeguard system and Indonesian regulations is a must. The National Environmental Safeguard Specialist will be engaged for a period of 24 person-months, intermittently over the Project implementation period.

2. The Specialist will provide technical guidance, capacity building, support and advice to the Central Project Management Unit (CPMU), Project Implementation Units (PIUs) under the BWS/BBWS in all aspects of environmental management and environmental safeguards in accordance with the ADB Safeguard Policy Statement (SPS) 2009 and the environmental rules and regulations of the Government of Indonesia.

3. Specific tasks:
   (i) Review various reports/assessments and other relevant background information available regarding the project or collect additional information to update him/herself with the current status of environment related aspects of the Project and familiarize him/herself with potential environmental issues relevant to the proposed interventions in each subproject area;
   (ii) Refine the EARF as needed at project start after consultation with CPMU and PIUs;
   (iii) Carry out a review of the feasibility studies (including the IEE and AMDAL) with regard to environmental impact and draw attention to changes which may have become necessary since their preparation;
   (iv) Develop strategy to effectively carry out the submission of environmental assessment documents to the concerned government offices and ADB;
   (v) Assist the CPMU in the preparation of the applicable ADB Rapid Environmental Assessment (REA) checklists and GOI screening criteria and the environmental categorization forms of the subprojects;
   (vi) Assist the CPMU in contracting, reviewing, submitting and obtaining approval of all AMDAL and UKL-UPL reports that meet the requirements from the Government of Indonesia as well as ADB SPS for category A (if one is to be proposed) and B subprojects;
   (vii) Lead in the conduct of capacity building/training of environment personnel in the Project;
   (viii) Oversee preparation and approval of the site EMP of construction contractors and monitor implementation of these for the purposes of quarterly reporting;
   (ix) Undertake a review of potential cumulative and induced environmental impacts which may occur downstream or elsewhere in the selected river basins as a result of project interventions;
   (x) Provide monitoring of project progress with regard to environmental targets and indicators set out in the Design and Monitoring Framework (DMF);
(xi) Collaborate with provincial and district environmental agencies to include environmental safeguards and awareness aspects in the capacity building and awareness building activities.

(xii) Provide technical assistance and capacity building to the CPMU and PIUs in monitoring the implementation of the IEE, AMDAL, and UKL-UPLs; and

(xiii) Assist the Team Leader and Deputy Team Leader in timely preparation of reports. Deliver the environmental monitoring reports timely as per the guidance from TL and DTL.
APPENDIX 7: TERMS OF REFERENCE FOR ENVIRONMENT OFFICER

I. SCOPE AND DURATION OF WORK

1. The Officer will work on behalf of the PIUs to implement the project environmental management and monitoring plan (EMP). The Officer will report directly to the project implementation units (PIUs). The position is for the entire project duration.

II. QUALIFICATIONS

2. The Officer will have: (i) an undergraduate degree or higher in environmental management or related field; (ii) at least five years of experience in environmental management, monitoring, and/or impact assessment; (iii) ability to communicate and work effectively with local communities, contractors, and government agencies; (iv) ability to analyze data and prepare technical reports; (v) willingness and health to regularly visit the project construction sites and in different seasons; and (vi) ideally, proficiency in spoken and written English.

III. DETAILED TASKS

3. The PIU Environment Officer will have a detailed understanding of the subproject EMP and supporting documents, including the domestic environmental reports, the subproject initial environment examination (IEE), AMDAL or UKL/UPL, and project environmental assurances. The officer will be responsible for the following:

(i) Assess whether the EMP requires updating due to any changes in project design which may have occurred after the EMP was prepared.

(ii) Distribute the *Bahasa* language version of the EMP to all relevant agencies, including the implementing agencies, provincial and municipal agencies for environment protection, forestry, water resources, and/or land planning, contractors, and construction supervision companies. This should occur at least three months before construction begins.

(iii) Assist in procurement of services from an environmental monitoring entity for environmental safeguards monitoring as specified in the EMP under the IEEs and AMDAL.

(iv) Conduct meetings with agencies as necessary to ensure they understand their specific responsibilities described in the EMP.

(v) Ensure that relevant mitigation, monitoring and reporting measures in the EMP are included in the bidding documents and contracts.

(vi) Confirm that the agencies responsible for the internal environment monitoring described in the EMP understand their tasks and will implement the monitoring in a timely fashion.

(vii) At least two months before construction begins, establish and implement the project Grievance Redress Mechanism (GRM) described in the EMP. This will include: (a) prepare a simple table and budget identifying the type, number and cost of materials needed to inform local communities about the GRM and starting dates and scope of construction; (b) design, prepare and distribute these materials, and plan and conduct the community meetings; (c) prepare a form to
record any public complaints; (d) prepare a summary table to record all complaints, including dates, issues, and how they were resolved; and (e) ensure that all relevant agencies, including contractors, understand their role in the GRM.

(viii) Prior to construction, ensure that contractors and construction supervision companies have informed their personnel, including all construction workers, of the EMP requirements. This will include all mitigation measures relating to impacts to air, water, noise, soil, sensitive sites, ecological values, cultural values, worker and community health and safety, respectful behavior when communicating with local communities, and responding to and reporting any complaints.

(ix) During project construction, make regular site visits to assess progress, meet with contractors and/or local communities, and assess compliance with the EMP.

(x) Ensure that all relevant agencies submit required progress reports and information, including environmental monitoring and reports of any issues or grievances.

(xi) Compile, review, and store environmental progress reports from the contractors and internal monitoring agencies, records of any grievances, and any other relevant issues. Maintain digital copies of all information. When necessary, enter data into summary tables in digital format (e.g. to transfer records of grievances from hard copy forms). Ensure that all information is stored in the PIU filing system, backed up, and can be easily retrieved.

(xii) With assistance from the national environmental safeguard specialist, prepare monthly and quarterly environmental monitoring reports during construction phase of the subprojects, and prepare semi-annual environmental monitoring reports during the operational phase of the subprojects.

(xiii) Work closely with the PIU, contractors, project management consultants, and other agencies and personnel as necessary to conduct these tasks.

IV. LOGISTICAL SUPPORT PROVIDED BY PIU TO THE ENVIRONMENT OFFICER

4. Provision of hard and soft copies of the project EMP, domestic and project environmental reports, feasibility study reports, loan and project agreements, maps, and other supporting materials as necessary to ensure the officer can implement the tasks.

5. Vehicle transport, office materials, and other logistical support as necessary for the officer to visit the project construction sites and local communities, arrange and conduct meetings, and prepare and distribute consultation materials.

6. Overall coordination, including review of the draft environment monitoring reports and final responsibility for submission to ADB.
APPENDIX 8: DRAFT TERMS OF REFERENCE FOR THE SERVICES FOR ENVIRONMENTAL SAFEGUARDS MONITORING

I. Background

1. The Project will support the Government and communities to better manage and mitigate flood risks and reduce the extent of economic and social damages in the in the Cidanau–Ciujung–Cidurian (3 Cis) river basin territory (RBT), Banten Province, and in the Ambon-Seram RBT, Maluku Province.1 This will be achieved through the implementation of process-oriented flood risk management (FRM) that provides a well-balanced mix of infrastructure improvement and soft interventions such as institutional strengthening and capacity building. Project interventions will (i) enhance data collection, information base, knowledge management and institutional coordination for managing floods, (ii) upgrade and construct flood protection infrastructure, (iii) reduce erosion and improve watershed condition, and (iv) prepare communities to manage floods. See Appendix 1 for details on project components and outputs.

2. The overall Project has four components. Project Component 2 is "reduced flood hazards". Within Project Component 2, (i) sub-component 1—watershed management—is to be implemented by BANGDA / Ministry of Home Affairs in both Ambon and in Ciujung, and by Ministry of Agriculture working only in Ciujung; and (ii) sub-component 2 focuses on major structural/ civil methods of flood control, to be implemented by the Major/National River Basin Organization (Balai Besar Wilayah Sungai) of Cidanau-Ciujung-Cidurian rivers (hereinafter BBWS 3Cis), and the Provincial River Basin Organization (Balai Wilayah Sungai or BWS) of Maluku river. A core priority subproject has been identified under sub-component 2, namely, construction of an approximate 11 km of new dikes in Ciujung. Other major structural/ civil flood control sub-projects under this sector Project will be identified and fully investigated during implementation, following the procedures established in the environmental assessment and review framework.2

II. Required Safeguards Monitoring Entities (SMEs) and its Services

3. In addition to the internal monitoring, the Project Administration Manual (PAM) requires independent monitoring on the safeguards to ensure that all recommendations and mitigation measures under the IEEs and the AMDAL (environmental impact assessment in the Indonesian system) of three core subprojects, as well as the AMDAL of all future subprojects are being implemented.

4. One SME will be required in each of the two Project provinces, Banten and Maluku. The required SME will be recruited by the relevant PIU following ADB Consultants’ Qualifications Selection (CQS) procedure. Interested entities such as local NGOs, or domestic universities and institutions must provide amplified Expressions of Interest (EOI) which includes the information showing that they are qualified to perform the services, giving the entity general experience for similar assignments and CVs of Key personnel with academic background, experience in similar assignments, knowledge of local conditions, etc. The completed EOI form can be found in CSRN of the ABD website. CVs must be submitted using the format in Attachment-1.

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1 Banten province is the most western province of Java island and Maluku Province is a group of islands located in Eastern Indonesia.
2 Environmental Assessment and Review Framework (accessible from the list of linked documents in Appendix 2 of the Report and Recommendation of the President to the Board of Directors).
III. Overall Schedule of Safeguards Monitoring

5. Independent environmental monitoring will be undertaken during the project implementation period from 2015 to 2021. The SME will provide the services for all the subprojects within the province under the sector loan. Procedures for environmental safeguards in the sector loan can be found in the Environmental Assessment and Review Framework (Linked document 10). For the Ciujung core subproject, the environmental monitoring will follow the Environmental Management and Monitoring Plans (EMPs) that have been prepared and included in the Initial Environmental Examinations\(^3\) and the Environmental Impact Assessment (AMDAL). For future subprojects for which an AMDAL is required, environmental monitoring will be undertaken following the EMP under the AMDAL. Information about the type of structural flood management interventions under the Project can be found in Table A8.1.

<table>
<thead>
<tr>
<th>Type of intervention</th>
<th>Priority subprojects</th>
<th>Possible future subprojects (location to be identified)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Core subproject</td>
<td>Future subprojects</td>
</tr>
<tr>
<td></td>
<td>Ciujung</td>
<td>3 Cis RBT</td>
</tr>
<tr>
<td>New Dike construction (including Borrow Pit Areas)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Existing Dike enlargement</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>River widening</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>River deepening</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Dedicated dredging disposal area</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Concrete embankments (parapet)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Piling</td>
<td>Possible</td>
<td>Possible</td>
</tr>
<tr>
<td>Dredging &amp; disposal</td>
<td>Possible</td>
<td>Possible</td>
</tr>
<tr>
<td>Check dams</td>
<td>Possible</td>
<td>Possible</td>
</tr>
</tbody>
</table>

IV. Scope of Works

1. Scope of Works

6. The Safeguards Monitoring Entity will focus on assessing progress and compliance with the Environmental Monitoring Plans (EMPs) under the IEEs and the AMDAL of the relevant subprojects, identifying constraints and developing remedial actions to effectively address these.

7. Key responsibilities of the SME include:

(i) To review the IEE and AMDAL report, including the EMP of the core subproject in Ciujung for familiarization of environmental monitoring requirements

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\(^3\) Initial Environmental Examination: Ciujung Core Subproject (accessible from the list of linked documents in Appendix 2 of the Report and Recommendation of the President to the Board of Directors).
(ii) To review the AMDAL reports (which will be accepted as an IEE or an Environmental Impact Assessment by ADB) of all relevant future subprojects under the Loan for familiarization of environmental monitoring requirements.

(iii) To develop a monitoring and assessment plan, including plan for baseline establishment where baseline data do not exist. Based on the IEEs and AMDALs, the SME will develop a monitoring and assessment plan responding to the scope of works outlined in these terms of reference, including the detailed field survey plan where necessary.

(iv) To conduct water quality monitoring. The SME will establish baseline for water quality at the subprojects and monitor the common parameters as set out in the EMP under the IEEs and/or the AMDAL.

2. Deliverables

(i) A monitoring and assessment plan responding to the scope of works outlined in these terms of reference including the detailed field survey plan for each mission. Four missions per year will be conducted for subprojects under construction and two missions per year will be conducted for subprojects under operation (post construction).

(ii) Baseline data of common water quality parameters for each subproject (primary data to be collected or secondary data if available);

(iii) Draft quarterly monitoring report submitted to the relevant PIU. Hard copies of the reports must be accompanied with soft copies.

(iv) Final quarterly monitoring report based on the PIU comments. Hard copies of the reports must be accompanied with soft copies.

3. Requirements for the SME

a. Team Composition and Required Inputs

8. The required SME will be qualified a local NGO, a domestic university or institution. The SME will have laboratory facilities adequate to undertake the sample analysis for the water quality parameters required by the EMP. The estimated team composition and required inputs are summarized below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Position</th>
<th>No. of Persons</th>
<th>Inputs (p-m)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Safeguards Monitoring Team Leader and Environment Specialist (TL)</td>
<td>1</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>2</td>
<td>Assistant surveyor</td>
<td>1</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2</td>
<td></td>
<td>8.0</td>
</tr>
</tbody>
</table>

4 As referred to in GOI Regulation Nr. 82/2001 on Water Quality Management and Water Pollution Control.
b. Duties, Responsibilities and Qualifications

(i) Environmental Safeguard Monitoring Team Leader

9. The Environmental Safeguard Monitoring Team Leader will be responsible in the overall planning and management of the Safeguards Monitoring of the subprojects. Specifically, she/he will lead the monitoring team and be responsible for the following:

(i) Review of the IEEs and the AMDAL including the EMPs of all relevant subprojects under the sector loan;

(ii) Develop a monitoring and assessment plan responding to the scope of works outlined in these terms of reference including the detailed field survey plan.

(iii) Conduct the field monitoring surveys, including those for baseline establishment where necessary, according to the monitoring and assessment plan.

(iv) Conduct the water quality monitoring referred to in para. 6 (iv) of this TOR.

(v) Prepare the quarterly monitoring reports, which include the results and assessment on the EMPs, and recommendations for any organizational or methodological improvements where applicable.

10. The Environmental Safeguard Monitoring Team Leader must have at least 10 years of relevant experience on the planning and conduct of environmental impact assessment of flood management, rural infrastructure, or agricultural development projects. She/he must hold at least a BS Degree on Chemistry, Environmental Science, Environmental Management or equivalent.

(ii) Assistant Surveyor:

11. One (1) assistant surveyor should be selected.

4. Time Schedule and Reporting

12. Four (4) missions of environmental safeguard monitoring per year to each subproject that is under construction, and two (2) missions of environmental safeguard monitoring per year to each subproject that is under operation. A monitoring baseline (primary data or secondary data if available) will be established before the start of any subproject. Quarterly environmental monitoring reports will be submitted covering all subprojects. The duration of the services will coincide with the Project implementation period.

5. Estimated Budget

13. The estimated budget for this package is approximately US$100,000 for each province. This budget may vary depending on the number and nature of subprojects in the province.
CURRICULUM VITAE (CV) FOR PROPOSED INTERNATIONAL OR NATIONAL EXPERTS

1. Proposed Position: ________________________________________________________________

2. Name of Firm  [Insert name of firm proposing the expert, if applicable]: ____________

3. Name of Expert  [Insert full name]: ________________________________________________

4. Current Residential Address: _____________________________________________________
   Telephone No.: _________________________________________________________________
   Fax No.: ________________________________________________________________
   E-Mail Address: ________________________________________________________________

5. Date of Birth: __________________ Citizenship: ________________________________

6. Education  [Indicate college/university and other specialized education of expert, giving names of institutions, degrees obtained, and dates of obtainment]: ________________

7. Membership in Professional Associations: __________________________________________

8. Other Trainings  [Indicate significant training since degrees under 5 - Education were obtained]: ________________________________________________________________

9. Countries of Work Experience: [List countries where expert has worked in the last ten years]: ________________________________________________________________

10. Languages  [For each language indicate proficiency: good, fair, or poor in speaking, reading, and writing]: ______________________________

11. Employment Record[Starting with present position, list in reverse order every employment held by expert since graduation, giving for each employment (see format here below): dates of employment, name of employing organization, positions held.]:

   From [Year]: _______ To [Year]: ________
   Employer: __________________________
   Positions held: ______________________

NOTE: Maximum of 5 pages.
12. Detailed Tasks Assigned
[List all tasks to be performed under this assignment]

13. Work Undertaken that Best Illustrates Capability to Handle the Tasks Assigned
[Among the assignments in which the expert has been involved, indicate the following information for those assignments that best illustrate the expert’s capability to handle the tasks listed in line 11.]

Name of assignment or project: ______________________
Year: ______________________
Location: ______________________
Client: ______________________
Main project features: ______________________
Positions held: ______________________
Activities performed: ______________________

13. Certification:

I, the undersigned, certify to the best of my knowledge and belief—

(i) this CV correctly describes my qualifications and my experience [ ] [ ]

(ii) I am employed by the Executing or the Implementing Agency [ ] [ ]

(iii) I am a close relative of a current ADB staff member [ ] [ ]

(iv) I am the spouse of a current ADB staff member [ ] [ ]

(v) I am former ADB staff member. [ ] [ ]
   • If yes, I retired from ADB over 12 months ago [ ] [ ]

(vi) I am part of the team who wrote the terms of reference for this consulting services assignment. [ ] [ ]

(vii) I am sanctioned (not eligible for engagement) by ADB. [ ] [ ]

I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

__________________________________________ Date: ______________________
Signature of expert (Day/Month/Year)