Environmental Assessment and Review Framework

Document Status: Draft
Project Number: 47084
June 2016

Republic of Indonesia: Community-Focused Investments to Address Deforestation and Forest Degradation Project

Prepared by the Ministry of Environment and Forestry for the Asian Development Bank

CURRENCY EQUIVALENTS

(As of 2 June 2016)

Currency unit	–	rupiah (Rp)
Rp 1.00	=	$0.000073
$1.00	=	Rp13,660

ABBREVIATIONS

ADB	–	Asian Development Bank
AMDAL	–	Analisa Mengenai Dampak Lingkungan (environmental impact assessment - full process)
ANDAL	–	Analisa Dampak Lingkungan (environmental impact analysis - the study)
BAPPENAS	–	National Planning Agency
BLH	–	Badan Lingkungan Hidup (environmental office)
CBD	–	Convention on Biological Diversity
CBFM	–	community based forest management
EA	–	executing agency
EARF	–	environmental assessment review framework
EIA	–	environmental impact assessment
EMP/RKL	–	Rencana Pengelolaan Lingkungan (environment management plan - companion to ANDAL)
FIP	–	Forest Investment Program
FMU/KPH	–	Kesatuan Pengelolaan Hutan (forest management unit)
GHG	–	greenhouse gas
GOI	–	Government of Indonesia
GPP	–	grievance point person
GRM	–	grievance redress mechanism
IEE	–	initial environmental examination
IFC	–	International Finance Corporation
MOEF	–	Ministry of Environment & Forestry
NGO	–	non-governmental organization
NTFP	–	non timber forest product
PCU	–	program coordination unit
PSC	–	project steering committee
PISU	–	project implementation supporting unit
REA	–	rapid environmental assessment
REDD+	–	reduced emissions from deforestation and forest degradation, conservation, sustainable forest management and forest carbon (+ refers to the last thee phrases)
RPL	–	Rencana Pemantauan Lingkungan (environmental monitoring plan - companion to ANDAL)
SFM	–	sustainable forest management
SNI	–	Indonesia National Standard

SPPL	–	Surat Pernyataan Pengelolaan Lingkungan (statement on commitment to environmental management)
SPS	–	Safeguard Policy Statement
SRAP	–	Strategi Rencana Aksi Provinsi (Provincial Strategy and Action Plan for REDD+)
TOR	–	terms of reference
UKL	–	Upaya Pengelolaan Lingkungan (environmental management measures)
UNFCC	–	United Nations Framework Convention on Climate Change
UPL	–	Upaya Pemantauan Lingkungan Hidup (environmental monitoring measures)
UPT	–	Unit Pelaksana Teknis (technical implementation unit)
WB	–	World Bank
WWF	–	World Wide Fund for Nature

NOTE

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

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I. INTRODUCTION

A. Background

1. As a pilot country of the Forest Investment Program (FIP)[1] under Climate Investment Funds, the Government of Indonesia (the 'government') prepared a forest investment plan with support from the Asian Development Bank (ADB), World Bank and International Finance Corporation (IFC). At the request of the government, ADB proposed to administer the "Community-Focused Investments to Address Deforestation and Forest Degradation" project. The project will support the government and customary communities in their efforts to sustainably manage forests and reduce greenhouse gas (GHG) emissions through enhancing institutional and technical capacity, and improving livelihood of rural communities to address drivers of deforestation and forest degradation. The project will support implementation of community-focused and gender-responsive pilots for reducing emissions from deforestation and forest degradation (REDD+) in five forest management units (FMUs) in Kapuas Hulu and Sintang districts of West Kalimantan province. The project will also contribute to effective implementation of provincial REDD+ strategy and harmonization of sub-national fiscal policies on REDD+ with national policies.

2. West Kalimantan, which is a key province in the Heart of Borneo Initiative, has many forests and is the fifth largest provincial contributor to Indonesia's carbon emissions. Four key drivers of deforestation and forest degradation in the province are: (i) commercial logging; (ii) forest conversion to agriculture (primarily to palm oil); (iii) mining (primarily coal and gold); and (iv) uncontrolled fires. ADB's contribution, as well as the contribution of other institutions (e.g., GIZ and JICA) will support the government to implement the provincial REDD+ strategy, thus helping West Kalimantan to achieve the 2020 GHG reduction target of 266.11 million tons of carbon dioxide equivalent (tCO_2e) from the forestry and peat sectors through:

- Strengthening the capacity of West Kalimantan's provincial and district-level governments to reduce deforestation and forest degradation;
- Promoting sustainable forest management (SFM);
- Enhancing carbon stocks;
- Improving livelihood co-benefits;
- Strengthening indigenous peoples' tenure rights;
- Enhancing conservation of biodiversity and ecosystem services.

3. The project will also promote inclusive growth and environmental sustainability, and it will help achieve the objectives of other initiatives, e.g., the 2011–2025 master plan for the acceleration and expansion of Indonesia's economic development, National Action Plan for GHG Emission Reduction, Indonesia National REDD+ Strategic Regional Action Plan for GHG Emission Reduction, and the provincial strategy and action plan (SRAP REDD+).

4. The project covers 17 villages in two districts (Kapuas Hulu and Sintang). It includes activities to transform behavior, policies, institutions, and technologies in order to clarify forest

[1] Forest Investment Program (FIP) is one of the three sub-programs under Strategic Climate Fund of Climate Investment Funds (CIF). FIP sub-committee endorsed investment plan (https://www.climateinvestmentfunds.org/cif/sites/climateinvestment funds.org/files/FIP_6_Indonesia_0.pdf) in November 2012 for $70 million ($37.5 million grant and $32.5 million soft loan). The ADB and the World Bank are the partner agencies for the grants while the IFC will provide soft loans. The World Bank project will support decentralized forest management by enabling institutional arrangements at national level and operationalizing FMUs. The IFC project will demonstrate replicable REDD+ business models for small and medium enterprises.

and land tenure, prevent illegal logging and associated trade, suppress forest fires, support the forest management units (FMU/KPH) via community-based forest management, support the implementation of the subnational REDD+ strategy and action plan (including market-based REDD+ strategies), and support to improve national policy development that better values and supports the conservation of natural resources.

5. Subprojects will be further identified during implementation. Village and/ or neighborhood participatory planning processes will identify the specific location and type of supporting facilities during implementation. This approach to project implementation requires the development of an environmental assessment and review framework (EARF).

6. This EARF will help ensure that the negative environmental impacts of the subprojects are assessed at the appropriate time and that positive impacts are enhanced. It will help ensure that subprojects comply with the environmental requirements of the governments, and ADB's Safeguard Policy Statement (SPS) 2009. The EARF will guide implementing agencies to identify potential environmental impacts, develop and implement mitigation measures, and monitor environmental impacts in a timely way. This EARF outlines:

- Environmental screening procedures and assessment methodologies;
- Environmental management (mitigation, monitoring, and documentation); and
- Institutional structures and mechanisms to comply with environmental management.

7. In summary, this EARF was prepared to guide the project's environmental assessment process at the subproject level; define environmental assessment requirements in accordance with applicable government regulations and ADB's SPS 2009; and outline the institutional arrangements for subproject environmental assessment and monitoring. The EARF is a living document and it will be updated as needed during implementation.

8. Given the above, this EARF was prepared based on:

(i) A review of the proposed livelihood programs;
(ii) Discussions with the executing agency (EA), provincial and district/city government officials from the forestry and environmental agencies, and community members; and
(iii) A review of relevant REDD+ documents, including the West Kalimantan Provincial Strategy and Action Plan for REDD+ (Strategi Rencana Aksi Provinsi [SRAP]).

B. Detailed Description of the Project

9. The expected impact of the project is increased environmental and livelihood benefits. The expected outcome is improved REDD+ implementation in project areas of West Kalimantan province. The three outputs, as well as the project activities, are outlined below.

Table 1: Summary of Project Interventions

OUTPUTS	ACTIVITIES
1. Community-focused and gender-responsive REDD+ pilots in Kapuas Hulu and Sintang districts implemented	1.1 Facilitate coordination and information dissemination on SFM and REDD+ between FMU offices and provincial agencies, with improved communication infrastructure. 1.2 Conduct workshops and study visits for FMU staff and local communities, including women, on REDD+ aspects such as safeguards, forest law enforcement, FPIC, conflict mediation and PES. 1.3 Formulate CBFM agreements with local communities, including women. 1.4 Train FMU staff and local communities, including women, in forest products utilization, value addition and enterprise development. 1.5 Establish a REDD+ monitoring and safeguards information system, with geospatial databases. 1.6 Develop spatial and business plans for FMUs, through a participatory process, consistent with CBFM plans. 1.7 Support establishment of FMU "block XXI" and prepare its long-term business plan. 1.8 Establish a fund-flow mechanism at community level as a basis for results-based payments for verified performance in SFM and emission reduction. 1.9 Implement REDD+ pilots with local communities, including women, to generate income and reduce emissions. 1.10 Provide equipment and training for community-based forest fire management.
2. Provincial REDD+ strategy in West Kalimantan effectively implemented	2.1 Facilitate coordination and information dissemination on forestry planning and policy between provincial agencies and national and district-level agencies, with improved communication infrastructure. 2.2 Conduct provincial workshops and training programs on REDD+ concepts, FMU business plan development and carbon accounting, including drafting of regulations. 2.3 Establish a provincial monitoring system and safeguards information system for REDD+. 2.4 Establish a grievance redress mechanism on tenure and REDD+ activities.
3. Sub-national policies on carbon stock improvement harmonized with national policies	3.1. Analyze fiscal policies with regards to integration of natural capital considerations, in Indonesia and other countries with significant forest resources, and prepare a policy paper. 3.2. Facilitate coordination and information dissemination on forestry policy between national and sub-national agencies, with improved communication infrastructure. 3.3. Conduct policy dialogues to assess gaps and identify remedial measures on fiscal, monitoring and benefit sharing policies and West Kalimantan forest industry strategy, leading to policy harmonization. 3.4. Identify relevant funding sources for REDD+ implementation and conduct training to prepare proposals to extend the scope, area and/or time frame of the current project.

CBFM = community-based forest management, FMU = forest management unit, FPIC = free, prior and informed consent, PES = payment for environmental services.

10. As mentioned above, output 1 focuses on REDD+ pilot projects in selected districts. **Figures 1** and **2** shows the land use and the preliminary list of proposed subprojects for Kapuas Hulu and Sintang districts. The land-based (e.g., agroforestry), non-land-based (e.g., bee keeping), and supporting activities (e.g., micro hydropower) are described in more detail in Section IV - Anticipated Environmental Impacts.

Figure 1. Land Use and Proposed Interventions by Village in Kapuas Hulu District

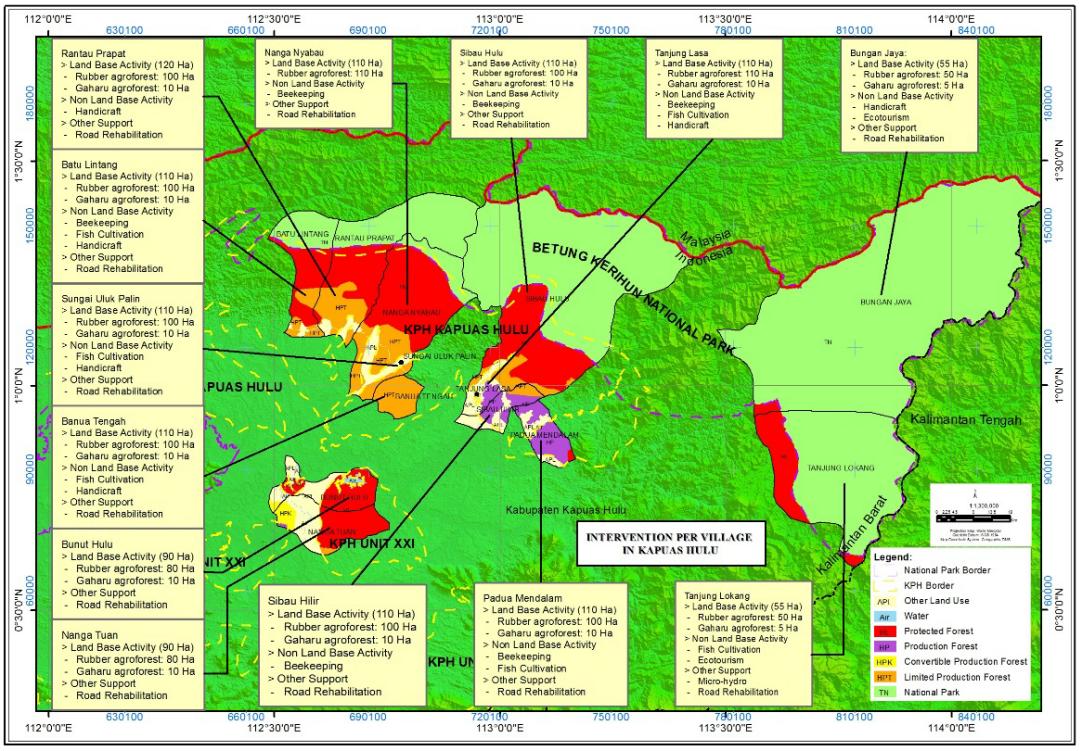
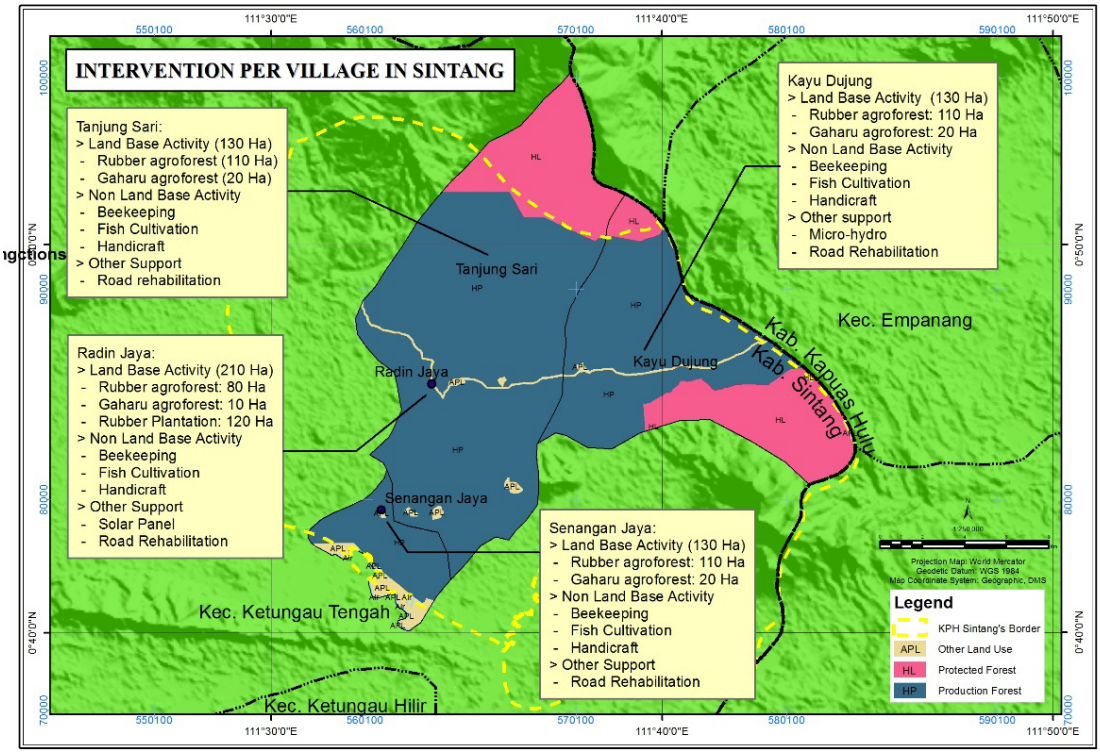


Figure 2. Land Use and Proposed Interventions by Village in Sintang District



II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

A. ADB Environmental Assessment Requirements

11. ADB's SPS 2009 became effective in January 2010.[2] The objective of the SPS is to *ensure the environmental soundness and sustainability of projects and to support the integration of environmental soundness and sustainability of projects and to support the integration of environmental considerations into the project decision-making process (p. 17).* The SPS outlines the requirements that ADB clients must meet when delivering ADB-supported projects. The requirements include: screening, assessing impacts, impact mitigation, preparing environmental assessment report, disclosing information and undertaking consultation, establishing a grievance redress mechanism (GRM), and monitoring and reporting. In accordance with the SPS, proposed projects are screened using rapid environmental assessment (REA) checklist(s), which focus on type, location, scale, sensitivity, magnitude of potential environmental impacts (i.e., direct, indirect, induced, and cumulative impacts), and availability of cost-effective mitigation measures. Projects are then classified into four categories:

(i) *Category A*. A proposed project is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the facilities subject to physical works. An environmental impact assessment (EIA) and environmental management plan (EMP) are required.

(ii) *Category B*. An initial environmental examination (IEE) is conducted to determine whether there are significant environmental impacts warranting an EIA. If there are no significant environmental impacts, the IEE and EMP are sufficient. This is the case when the proposed project's potential adverse environmental impacts are site-specific, few if any of them are irreversible, and in most cases, mitigation measures can be designed more readily than for Category-A projects.

(iii) *Category C.* A proposed project is likely to have minimal or no adverse environmental impacts. An EIA or IEE is not required, although environmental implications need to be reviewed.

(iv) *Category FI*. A proposed project passes ADB funds through a financial intermediary. The financial intermediary must apply and maintain an environmental and social management system, unless all the financial intermediary's business activities have minimal or no environmental impacts or risks.

12. According to ADB's SPS 2009, the project is a category B project, and hence it requires an IEE/EMP. The project is expected to have predominantly positive impacts. The project could have some site-specific/localized adverse environmental impacts, but there will be few if any irreversible impacts and it is expected that mitigation measures can be readily designed. **Annex 4** shows the relevant REA checklists.

B. Indonesia's Environmental Assessment Requirements

13. Indonesia's relevant environmental law and regulations focus on managing the environmental impacts of development projects. The legal framework includes:

(i) Law No. 32/2009 concerning Environmental Protection and Management;

[2] Refer to www.adb.org/Documents/Policies/Safeguards/default.asp for Appendix I (Safeguard Requirements 1: Environment) of the SPS.

(ii) Minister of Environment Regulation No.5/2012 on the screening criteria (i.e., the type/scale/magnitude of activities requiring environmental impact assessment /*Analisa Mengenai Dampak Lingkungan* – AMDAL);
(iii) Minister of Environment Regulation No.16/2012 on Guidance to Prepare Environmental Documents;
(iv) Minister of Environment Regulation No.17/2012 concerning Public Participation and Information Disclosure in AMDAL Process; and
(v) Government Regulation No. 27/2012 on Environmental Permits.

14. The Environmental Protection and Management Law provides three categories of projects:

(i) Projects requiring a full AMDAL process;
(ii) Projects requiring an environmental management effort and an environmental monitoring effort; and
(iii) Projects that do not require environmental assessment.

15. The Environmental Protection and Management Law requires three types of environmental documents, based on the above project categories:

(i) Projects requiring the full assessment process (AMDAL) need terms of reference (TOR), an impact analysis (ANDAL), and an environmental management plan (RKL) and an environmental monitoring plan (RPL) to assess the significant impacts and to make a decision on the implementation of the business and/or activity;
(ii) Projects requiring an environmental effort need an environmental management effort/environmental monitoring efforts (UKL/UPL). The UKL/UPL pertains to the management and monitoring efforts conducted by the proponent on activities that have no *significant* impacts on the environment. The UKL/UPL is required to make a decision on the implementation of the business and/or activity; and
(iii) Projects that don't require environmental assessment (i.e., exempt from AMDAL or UKL/UPL) need a Statement on Commitment to Environmental Management (*Surat Pernyataan Kesanggupan Pengelolaan dan Pemantauan Lingkungan Hidup* / SPPL). This statement confirms the proponent's ability to monitor and manage the environmental impact of its business and/or activity. The statement should be communicated to the provincial, regency, or municipal environmental officer.

16. Regulation 5/2012 provides the screening criteria to differentiate between activities/projects that require AMDAL and activities/projects that require UKL/UPL (e.g., type and scale of the activity). Regulation No. 5/2012 covers the following sectors: (1) multi-sector, (2) defense, (3) agriculture, (4) fishery and marine, (5) forestry, (6) transportation, (7) satellite technology, (8) industry, (9) public works, (10) housing and settlement, (11) energy and mineral resources, (12) tourism, (13) nuclear development, and (14) hazardous waste processing. Based on Regulation 5/2012, the proponent should submit an SPPL if the activity or project does not require an AMDAL or an UKL or UPL.

17. The Minister of Environment Regulation No. 16/2012 provides general guidance to prepare the AMDAL, UKL or UPL, and SPPL documents. Regulation No.27/2012 requires that projects subject to AMDAL or UKL or UPL obtain an Environmental License. The proponent

must obtain the environmental permit from the appropriate government authority *before* implementing the project (permits are not required for SPPL projects).

18. The following forestry-sector activities require an AMDAL: (1) timber forest products from natural forest (all scales); and (2) timber forest products from plantation forests ≥ 5,000 ha. Regulation No 5/2012 (Article 3) stipulates that all projects located at the border or inside a protected area regardless of type or scale require an AMDAL. However, Article 4 exempts from AMDAL business plans or activities that support the conservation of protected areas, or cultivation that is permitted for natives within a fixed area (assuming that the said cultivation does not reduce the function of the protected area). Thus, in accordance with the GOI regulation, the subprojects currently listed under the project do *not* require AMDAL because:

(i) The subprojects are small scale;
(ii) The proposed activities will support conservation and will not reduce the function of the protected areas; and
(iii) The subprojects will require an UKL or UPL.

19. A community-driven development approach will be used to finalize the set of activities for each subproject. In accordance with the Indonesian regulatory framework, it is expected that some interventions will require an UKL or UPL; some subprojects will only require a SPPL. The Ministry of Environment and Forestry (MOEF) is responsible for AMDAL at the national level; the local environmental management body is responsible at the provincial and at the district level. Under the project, UKLs or UPLs will need to be submitted to the provincial or district environmental management body for approval. The environment permit will also be obtained at provincial or district level.

20. Annex 1 shows the environmental screening process. Annex 2 shows a flowchart of the Indonesian environmental clearing process (to obtain an environmental permit). Annex 8 contains a consolidated screening process, REA and categorization of subprojects.

C. Other Pertinent Legislation

21. Law No. 2/2012 on Land Acquisition for Development in the Public Interest provides the framework for land acquisition, resettlement, and compensation in Indonesia. Presidential Regulation No. 71/2012 (Implementation of Land Acquisition for Development in the Public Interest) implements Law No.2/2012.

22. Three regulations issued by the Ministry of Forestry support carbon sequestration and REDD activities: (1) Minister of Forestry Regulation No. P.36/Menhut-II/2009 regarding License Procedures for Carbon Sequestration and / or Carbon Storage Business in Forest Production and Protection Forests; (2) Minister of Forestry Regulation No P.68/Menhut-II/2008 regarding Implementation of Demonstration Activities for Reducing Carbon Emissions from Deforestation and Forest Degradation; and (3) Minister of Forestry Regulation No P.30/Menhut-II/2009 regarding Procedures to Reduce Emissions from Deforestation and Forest Degradation. These regulations support SFM and environmental services.

23. West Kalimantan Regulation Number 7/1988 on Management and Conservation of the Environment and West Kalimantan Governor Decree No. 120/1989 on Environmental Quality Standards guide environmental management at the provincial level. This EARF must also bear in mind the regional spatial planning (RTRW) and customary law.

D. International Conventions on the Environment

24. Indonesia has ratified several international conventions including:

(i) ASEAN Agreement on the Conservation of Nature and Natural Resources (1985). This agreement ensures that conservation and management of natural resources are integrated into development planning and national laws;
(ii) Convention on Biological Diversity (CBD) (1996). The CBD requires the environmental assessment of proposed projects that are likely to have significant adverse effects on biological diversity;
(iii) United Nations Framework Convention on Climate Change (UNFCCC) (1995) and subsequent protocols. The UNFCCC and its protocols promote taking precautionary measures to anticipate, prevent, minimize, and mitigate the causes and effects of climate change; and
(iv) Vienna Convention for the Protection of the Ozone Layer (1998) and subsequent protocol and amendments. This agreement promotes taking 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.

E. Comparing the ADB and the Indonesian Requirements

25. In general, the Indonesian AMDAL system conforms to the intent of ADB's SPS. Table 2 compares ADB and the government project categories. ADB's category A projects are similar to projects that require AMDAL. ADB's category B projects are similar to projects that require UKL or UPL while category C projects are similar to the projects requiring a SPPL.

Table 2: Comparison between ADB and the Government's Project Categories

ADB Project Categories	AMDAL Project Categories
Category A: Projects with potential for significant adverse environmental impacts, requiring an EIA.	**AMDAL**: Projects with potential for substantial impacts on the environment require AMDAL (including TOR, ANDAL, and RKL/UPL).
Category B: Projects judged to have some adverse environmental impacts, but of lesser degree and/or significance than category A projects. Category B projects require IEE.	**UKL/UPL**: Projects are not required to have AMDAL but are obliged to have an UKL/UPL.
Category C: Projects unlikely to have adverse environmental impacts.	**SPPL**: Projects that do not require AMDAL or UKL/UPL are obliged to submit a Statement of Management and Environmental Monitoring Ability' or SPPL.
Category FI: Projects with a financial intermediary. The financial intermediary must apply an environmental management system, unless all impacts are insignificant.	Not applicable.

F. Adequacy of Legal Framework

26. Overall, it is concluded that Indonesia's legal framework is in general adequate to the task of environmental management. However, implementation and enforcement can at time arise (e.g., the quality of reports or the correct implementation of mitigation measures or monitoring procedures).

27. A few substantive differences between the ADB and Indonesian framework are

highlighted below**.** One key difference between the ADB and Indonesian environmental assessment framework is the classification criteria. ADB categorizes its projects based on the significance of potential environmental impacts, using its REA checklists. AMDAL uses a positive list of projects,[3] sector-specific thresholds, and other specific eligibility criteria related to environmentally feasibility (e.g., conformity with spatial plans; non-interference with the social value of the society; and/or non-disruption of the ecological integrity). Note that any project that does not comply with the Indonesian spatial plans is rejected during the review of the TORs for the AMDAL. In that sense, the AMDAL project screening procedure requires more data.

28. Another notable strength of the Indonesian AMDAL system is the long years of experience with AMDAL. AMDAL is integrated into the legal process, and as such, it is enforceable. In fact, the RKL or RPL and UKL or UPL are attached to any required environmental permit (e.g., permit for waste disposal).

29. One weakness of the Indonesian AMDAL system is that the environmental management and monitoring guidelines are too general. This can result in insufficient treatment of some topics (e.g., biodiversity, indigenous people, climate change, or health and occupational health and safety) –that are required to be assessed by ADB SPS 2009. Another notable weakness of the Indonesian system is that the UKL or UPL documents, *unlike* the AMDAL documents, is not subject to a formal, technical review by an AMDAL commission. This means that there is little quality assurance on the UKL or UPL.

30. Given the above discussion, it is concluded that ADB and Indonesian systems are complementary, and can work together very well. The ADB system has a slightly wider scope of topics, whereas the AMDAL system is more enforceable. It is concluded from the previous discussion that this ADB category B project and the future subprojects will in general require an UKL or UPL. It is concluded that ADB should accept the UKL or UPL to be the equivalent of the ADB required IEE, provided that the ADB review concludes that the UKL or UPL fulfills the SPS 2009 requirements, the IEE content requirement, and the requirements of this EARF.

31. In brief, the content of the UKL or UPL will need to be adjusted to mirror the IEE requirements. Adjustments will include placing extra attention on various topics (e.g., biodiversity, climate change, indigenous peoples, and health), expanding the environmental baseline, and developing a GRM. Table 4 compares the content requirement of the UKL or UPL and IEE and identifies the gaps. Section VI.B - capacity to implement IEE and UKL or UPL describes the capacity development implications of harmonizing the UKL or UPL and IEE requirements.

32. The project will help ensure good implementation of its environmental management by focusing on developing good quality reports (UKL or UPL or IEE) and on best practice implementation of environmental management and monitoring procedure, and through review and quality assurance procedures.

G. Institutional Capacity to Implement Legal Framework

33. This topic is dealt in more detail under Section VI.B, *Capacity to Implement IEE and UKL/UPL,* where relevant training to strengthen implementation capacity is also outlined.

[3] The AMDAL positive list is based on the potential for significant impacts, but also based on local experience with implementing projects and the impacts experienced therein.

III. ENVIRONMENTAL ASSESSMENT FOR SUBPROJECTS

A. Subprojects to be financed by the Project

34. Overall, it is expected that the project including its subprojects will create positive impacts on the environment by focusing on activities to improve forest and land tenure, prevent illegal logging and associated trade, suppress forest fires, support the FMU, support the implementation of the sub-national REDD+ strategy and action plan, and improve community livelihoods. Positive environmental activities include: (i) the development of community forest management plans that will secure the use of land to local communities; (ii) the establishment of agroforestry systems and rubber plantation in degraded land[4] to store carbon; and (iii) the implementation of activities to reduce pressure on the forests by providing alternative income to local communities (e.g., beekeeping, catfish culture, handicrafts and community-based ecotourism). The project will provide sustainable environmental benefits by strengthening the local capacity to manage natural resources and to conserve biodiversity.

35. Specifically, the subprojects will support output 1 and its sub-activities. The subprojects will also contribute to outputs 2 and 3, as shown below.

Table 3: Contribution to Project Outputs

Output 1: *Community-focused and gender-responsive REDD+ pilots in Kapuas Hulu and Sintang districts implemented*	Activity 1.9**:** Implement REDD+ pilots with local communities, including women, to generate income and reduce emissions**.**
Output 2: *Provincial REDD+ strategy in West Kalimantan effectively implemented*	Activity 2.3: Establish a provincial monitoring system and safeguards information system for REDD+; Activity 2.4: Establish a grievance redress mechanism on tenure and REDD+ activities
Output 3: *Sub-national policies on carbon stock improvement harmonized with national policies*	Activity 3.3: Conduct policy dialogues to assess gaps and identify remedial measures on fiscal, monitoring and benefit sharing policies and West Kalimantan forest industry strategy, leading to policy harmonization.

36. The specific, village-level subprojects will be identified using a participatory process. The sum of activities within a village will constitute a subproject and be the subject of an environmental assessment. It is also possible that a given type of activity (e.g., road rehabilitation across all villages) could be considered a subproject and subject to an environmental assessment process.

37. The subproject environmental assessment process will include: (1) subproject concept identification; (2) screening and categorization; (3) preparation, review, revision, and approval of the subproject environmental assessment; and (4) monitoring. Item 1 is discussed in more detail in the Project Administration Manual; items 2 to 4 are discussed in more detail below.

[4] In the context of REDD+, degraded land refers to areas with low carbon stocks. These areas typically have minimal tree cover and an absence of peat, so they do not contain or sequester as much carbon as natural forests.

B. Screening the Subprojects

38. Each subproject will be subject to an initial screening to assess the potential for significant impacts. The subproject screening procedure will consolidate Indonesian and ADB screening criteria as outlined below.

39. The government screening criteria will include:

(i) All selected subprojects and activities are in line with GOI regulations;
(ii) The subproject is environmentally feasible, i.e., the location complies with the spatial plan [i.e., Government Regulation No. 27/2012 (Article 4)]; the project does not interfere with the social values; the project does not disrupt ecological integrity;
(iii) Subprojects/components that use critical habitats[5] *are* in line with the purpose of a protected area or critical habitat (Annex III of the Decree of the Minister of Environment No. 05/2012 identifies 20 types of protected areas, including protected forest, river demarcation, and national park);
    i. As previously noted, AMDAL is mandatory for any business or activity whose boundary overlaps with a protected area and/or potential impacts of the business and/or activity are predicted to negatively affect nearby protected areas. The subprojects do not require AMDAL because: (1) the subprojects are small scale; and (2) the proposed activities will support conservation and will not reduce the function of the protected areas.
(iv) Subprojects/components that require AMDAL will be rejected (i.e., any subproject expected to cause a significant adverse environmental impact). This will ensure that the project maintains its ADB category B or C designation and requirements (see further explanation below).

40. The first ADB screening criterion is to ensure that all subprojects and subproject components contribute to the project objectives and outputs, most specifically, output 1: community-focused and gender-responsive REDD+ pilots in Kapuas Hulu and Sintang districts implemented; activity 1.9**:** Implement REDD+ pilots with local communities, including women, to generate income and reduce emissions**.**

41. Another criterion excludes subprojects with the type of activity listed in ADB SPS's *Prohibited Investment Activities List* (see **Annex 3** for the *prohibitive* list). This prohibitive list excludes about 10 types of harmful projects/subprojects, e.g., projects that use forced labor or child labor. The subprojects are subject to a rapid environmental assessment (REA) using various REA checklists.[6] Annex 4 provides the relevant REA checklists.

C. Categorization of the Subprojects

42. Based on the previous screening results, including GOI screening results and the REA checklist result(s), ADB will classify the subproject based on the most environmentally sensitive component. This means if any subproject or subproject component can potentially lead to significant adverse environmental impacts, the entire subproject or project is classified as a

[5] Critical habitats are generally defined as areas that have high biodiversity value and may include sites that are legally protected or officially proposed for protection (e.g., Ramsar site).
[6] ADB's REA checklists are used to identify impacts, to assess likely significance, and to generate mitigation measures. The checklist questions systematically review the subproject location. The biological, physical, and social impacts are identified and assessed when answering all the checklist questions.

category A project or subproject for environment. Subprojects/subproject components with potentially significant impacts will be rejected. Only category B or C (for environment) subprojects/subproject components will be selected.

43. This means that there will be no subprojects/components with the following characteristics:

- Subproject or components having a significant level of environmental impacts requiring complex mitigation measures that need an in-depth assessment of the impacts and detailed study to prepare mitigation measures; and
- Components that generate impacts on ecologically sensitive areas, e.g., if the subproject or subproject component is located in a buffer or a core zone of protected areas, or in an area of international significance, or in an area of cultural heritage and archaeological sites. (Factors that affect the evaluation of sensitivity include: quality of the 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). This is also unlikely to occur under the project since the subprojects are small-scale and the proposed activities aim to support conservation.

D. Consolidated EARF Screening and Categorization Procedure

44. The subproject categorization will depend on the specifications (e.g., design, size, scale, and location). To avoid duplication, the EARF first follows the government regulation, given that AMDAL has a well-established system, with legally-mandated procedures to screen and evaluate all projects, conduct public consultation and disclose information, issue environmental recommendations and permits, resolve disputes, impose sanctions and penalties for violations, and to monitor the environmental management of projects (refer to Figure 3: *Schematic of Screening and Categorization Procedure and UKL/UPL / IEE Approval Process)*.

45. Compliance with the AMDAL system will in general be considered compliance with the ADB SPS requirements, ***but*** the environmental assessment procedure and reports will be subject to the procedures and guidance of this EARF and to ADB approval. The English version of the first two subproject UKLs or UPLs will be subject to a prior review by ADB to ensure compliance with ADB's SPS 2009. If found satisfactory, subsequent UKLs or UPLs of similar kind of interventions will be approved by the project director. The English version of the executive summary and the full ULP or UPL in the local language will be submitted to ADB for disclosure. The first UKL or UPL of subprojects with interventions of a different nature than those included in the first two ADB-approved UKLs or UPLs will need to follow the prior review procedures.

46. Under the Ministry of Environment Regulation No. 16/2012, the process is initiated when the proponent submits an UKL or UPL form with attachments to the relevant district or provincial environment office (BLH). Attachments can include: maps, proof of compliance with spatial planning, proof of business activity principle, statement of proponent, and other information about the planned activity. The project implementation supporting unit (PISU) can assist the proponent with this task, if need be.

47. The BLH will determine whether AMDAL, UKL or UPL, or SPPL applies to the subproject (see Annex I). Any subproject that requires an AMDAL will be rejected. It is assumed that BLH will use the above listed government screening criteria in making its categorization decision.

Subsequent to BLH screening decision, the PISU will screen the subproject based on the ADB screening criteria. This will include screening the subproject using ADB's *Prohibited Investment Activities List* and the relevant REA checklists.

48. The PISU environmental safeguard specialist (PISU-ESS) will then categorize the subproject using ADB categorization, based on the REA results. Any subproject component that obtains an ADB category A designation will be rejected. Only a category B or C subproject, requiring UKL or UPL (in Indonesia) / IEE (in ADB) or SPPL (in Indonesia) will be retained.

49. The PISU–ESS will complete the ADB environmental categorization form (**Annex 5**). The PISU–ESS will submit the completed REA checklists and the environmental categorization form to the program coordination unit (PCU) for review and endorsement.

50. The PCU project director will countersign the environmental categorization form and submit it to ADB. The first and second categorization exercise will require ADB approval. Once ADB approves the first and second categorization, it may delegate the approval of all subsequent subproject categorizations to the PCU project director. ADB will review and audit the environmental categorization forms, on a random basis.

E. Preparation, Review, Revision, and Approval of the UKL or UPL

51. Based on government regulation and ADB SPS, it is expected that about 17 UKLs or UPLs will need to be prepared for the project (i.e., at least one document for each of the 17 selected villages). Two model IEEs have been developed and these should serve as a model template for subsequent UKLs or UPLs.

52. All UKL or UPL will be developed in compliance with the government requirements and in compliance with ADB IEE requirements. Annex 6 shows a consolidated UKL or UPL or IEE table of content (Annex 6 also shows the original UKL or UPL table of contents and original IEE table of contents). To comply with ADB IEE requirements, Table 4 highlights in the report sections of the UKL or UPL that should be added / strengthened.

53. The contents of the UKL or UPL should be agreed with the local BLH and local consultants. The environmental 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 integrate environmental considerations.

54. The UKL/UPL or SPPL will be submitted to the PISU–ESS. The report finalization and review procedure is outlined in more detail below:

a. The PISU–ESS will assist to prepare/review/finalize the UKL/UPL or SPPL document. The UKL or UPL or SPPL must conform to the Ministry of Environment Regulation No. 16 format (i.e., the Guidelines for Preparation of Environmental Document) and to the IEE requirements.
b. Once the PISU–ESS determines that the report is in compliance with the EARF requirements, the PISU–ESS will submit the subproject UKL or UPL or SPPL to the head of the district, governor, or local BLH for review and approval.
c. Upon approval by the governor/regent and/or BLH, the PISU–ESS will ensure that the first and second UKLs or UPLs are translated in full into English.
d. The PISU–ESS will submit the UKL or UPL or SPPL to the PCU, who will review and then submit the report to ADB in English version.

e. Once ADB's comments have been incorporated into the UKL/UPL to meet SPS 2009 requirements, the UKL/UPL will be accepted as the IEE.
f. If ADB deems that the first two UKLs or UPLs are of satisfactory quality and in compliance with the requirements of ADB's SPS 2009, the PCU project director will approve the subsequent UKLs or UPLs or SPPLs of subprojects of the same kind of intervention as that in the first two approved UKLs or UPLs or SPPLs. The subsequent reports only require that the executive summary be translated into English. The PCU will submit the executive summary in English and the full UKLs or UPLs or SPPLs in Bahasa Indonesia to ADB for disclosure or for any post-review procedure.
g. For subprojects that include interventions that were not included in the first two approved UKLs or UPLs or SPPLs, the first UKL or UPL or SPPL of this new type of intervention will need to follow the process specified in items in a–e.
h. The PCU project director and the PISU will ensure that copies of the UKLs or UPLs or SPPLs and the English executive summary are filed at their office, to facilitate periodic ADB reviews and audits. ADB may on a random basis assess the reports' compliance with its environmental safeguards.

Table 4: UKL/UPL Table of Content vs. ADB IEE Table of Content

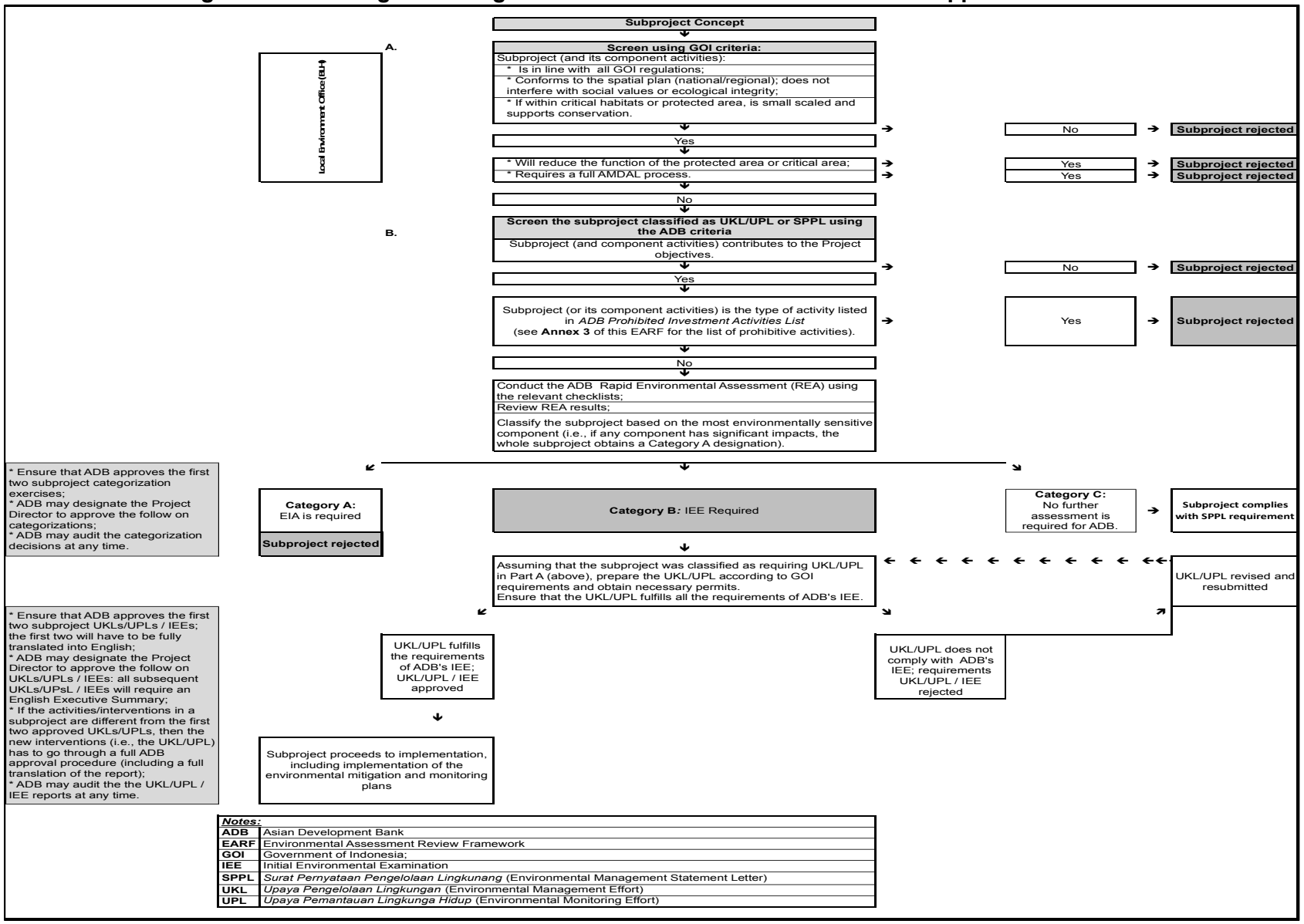
UKL/UPL Table of Content	ADB IEE Table of Content
Must add Executive Summary and Introduction	**Executive Summary / Introduction**
Must add Policy, Legal, and Administrative Framework	**Policy, Legal, and Administrative Framework**
The proponent Plan of Activity (Generally focused on amount of materials & water needed, waste produced; land acquisition, earthworks).	Description of the Subproject
Figure 1: Map of study location Figure 3: Land to be acquired **UKL/UPL reports do not have a strong requirement for baseline data;** **Must strengthen the baseline.**	Description of the Environment (baseline data) This baseline will likely include more attention to: **biodiversity, climate change, indigenous peoples, and health** than the UKL/UPL baseline.
Environmental Impacts Table 1: Environmental Impacts Figure 2: Map of environmental impacts	Anticipated Environmental Impacts & Mitigation Measures
~ Government needs to publish/announce the requests for and the issuance of environmental permits via a government web site or local newspaper. **Must expand this requirement to comply with ADB safeguards. The UKL/UPL (in English and local language) will need to be publicly accessible through ADB and government websites.**(The first two UKL/UPL will need to be fully translated into English; subsequently, it will be sufficient to provide an Executive Summary in English and the full UKL/UPL in Bahasa Indonesia. If specifically requested, a full English summary can be provided). **Must add a Grievance Mechanism.**	**Information Disclosure, Consultation, and Participation** **Grievance Redress Mechanism**
Environmental Management and Monitoring Program Table 2: Environmental Mitigation Plan Table 3: Environmental Monitoring Plan **Must add indicators, EMP budget, institutional arrangements, and capacity building efforts.**	Institutional Arrangements and Environmental Management Plan (includes mitigation, monitoring, **indicators; budget, implementation arrangements, and capacity building).**
Must add conclusions and recommendations.	**Conclusion and Recommendations**
Signature	
Appendices	

F. Monitoring

a. The PISU will ensure that the UKL or UPL is integrated into the tender and contract documents of subprojects.
b. The PISU will monitor implementation of the UKL or UPL and any unexpected adverse environmental impacts. The PISU will submit semi-annual monitoring reports to the PCU, describing the UKL or UPL implementation, compliance with national environmental legislation, compliance with ADB SPS and this EARP, and any required improvements.
c. The PISU and the PCU will consolidate all the PISU monitoring reports and integrate the consolidated report into the semi-annual reports to ADB.
d. If unanticipated environmental impacts are detected during subproject implementation, the PISU will revise the UKL or UPL accordingly.

55. Figure 3 provides a schematic of the screening and categorization procedure and the UKL or UPL or IEE approval process.

Figure 3. Screening and Categorization Procedure and UKL/UPL / IEE Approval Process



IV. ANTICIPATED ENVIRONMENTAL IMPACTS

56. There are potential impacts associated with the livelihood options and supporting activities that will be conducted in the 17 villages under the project. The activities include:

- ***Land-based activities*****,** including agroforestry systems (e.g., rubber–coffee and rubber–gaharu / agar wood), assisted natural regeneration, and rubber plantation;
- ***Non-land based activities*** *(including Non-Timber Forest Products, NTFPs)* (e.g., beekeeping, catfish culture, handicrafts, and community based ecotourism;
- ***Supporting facilities*** such as micro-hydropower, small-scale solar panel systems, and/or infrastructure (e.g., one 2 km X 2 m road rehabilitation per village).

57. Table 5 - Summary of Potential Impacts and Mitigation Measures by Subproject Phase provides an overview of the various types of subproject activities as well as the specific activity-related impacts and mitigation measures.

A. Land-based activities

58. The main subproject activity is land-based cultivation. The selection of the plantation sites could generate important impacts, but the project will only implement this activity on degraded lands. Within the context of REDD+, *degraded land* refers to land areas with low carbon stocks. Degraded areas typically do not have any peat, have minimal tree cover, and do not sequester as much carbon as natural forests. The agroforestry, plantation, and NTFP activities should in general not be sited in wetlands. The potential direct, indirect, cumulative, and induced environmental impacts and risks to the physical, biological, socio-economic, and cultural resources are identified below.

1. Positive Impacts

59. **Rubber Agroforestry and Rubber Plantations**. Soils degraded by shifting cultivation can be improved by establishing rubber plantations (*Hevea*). If the plantation adopts good management practices (e.g., terracing, silt pitting, and bunding and growing leguminous cover plants between the rows), the amount of organic matter will increase, thus improving soil physical properties (i.e., bulk density, soil porosity, moisture retention, and infiltration).

60. In addition, the *Hevea* trees serve as carbon sink. Under plantation conditions*, Hevea* is more effective than teak in up taking carbon dioxide (Sethuraj *et al.*, 1996), as rubber plants convert carbon dioxide into an elastomer. The leaf area created by a mature rubber tree is also sizeable and given the high rate of photosynthesis and *Hevea's* high leaf area index, the biomass production per unit of land within a given time is very high. With a planting density of 450 trees/ha, the canopy of rubber plantations closes in less than five years. Rubber trees produce latex for about 30 years, and are usually replaced after that; the wood can then be used to make furniture.

61. **Kemiri Sunan Agroforestry.** *Kemiri sunan* or *Reutealis trisperma (Blanco) Airy Shaw* is a biofuel crop that can be grown on marginal land, hence avoiding competition with food crops. *Kemiri sunan* is under plant variety protection in Indonesia. It has a deep root system to absorb ground water (i.e., the deep roots help stabilize the land, helping to prevent landslides). It also

provides biodiesel, which can replace some fossil fuels. A leguminous cover crop can reduce site erosion.

62. **Selection of the Planting Seeds.** To achieve expected benefits, select seeds from plants that is adapted to the local conditions. The species mixture should provide good vegetation cover and improve soil quality.

2. Potential Negative Impacts and Proposed Mitigation Measures

63. **Impacts on Biodiversity and Protected Species.** Use of non-local seeds could result in poorly adapted plantations and loss of local biodiversity. Poor selection of plantation sites could result in land clearing and habitat loss. Land cultivation activity will only be implemented on degraded land in the villages, using locally adapted seeds or seedlings. Assuming that correct forest management practices are applied, the subprojects are expected to have a positive effect on biodiversity.

64. When the plantation activity is near protected areas, care will need to be taken to minimize the risk of introducing invasive species and to ensure that the community and plantation workers do not encroach and increase hunting pressure in the protected area. The plantation operator and workers will need to sign a code of conduct to minimize encroachment and hunting by plantation workers. This code of conduct will be monitored by the PISU. In addition, construction activities will need to be halted if protected species (as defined by Government Regulation No. 7/1999 on the Preservation of Wild Plants and Animals and IUCN Red List) are encountered during plantation works. The issue of the protected species will need to be discussed with the provincial conservation department to determine any mitigation action.

65. **Clearing planting sites.** Land clearing can cause permanent or temporary disturbances, damage existing vegetation (e.g., herbicides can be used to clear land), disrupt animal trails, increase runoff and soil erosion, or increase soil nutrient loss. The land clearing debris could increase the risk of forest fire. There is no specific land clearing programmed under the land-based activities during establishment of the plantation and land clearing will be minimized during operations. The use of herbicides is prohibited. Appropriate management of vegetation debris will be implemented (e.g., composting of vegetation wastes).

66. **Fertilizer.** Although synthetic fertilizers can have benefits, excess phosphorus can cause algae blooms, killing fish by depleting the oxygen. Excess phosphates and nitrates make water unsafe for consumption. Oxidized nitrogen, a byproduct of synthetic fertilizers, increases smog, which may increase the risk of respiratory illness and asthma. Excessive use and/or inappropriate application of chemical fertilizers results in surface runoff, surface water pollution, and chemicals seeping into underground aquifers. Excessive and long-term continuous application of chemical fertilizers changes the soil's physical and chemical properties and results in soil hardening, poor soil quality, and reduced productivity.

67. The land-based activities will correctly use Indonesia National Standard (SNI) certified inorganic fertilizer. The project is expected to transition to organic fertilizers. Manure will be applied during the first year, and then organic fertilizers will be used thereafter. This will in general improve the physical and chemical properties of soil, and minimize adverse environmental impacts.

68. **Pesticides.** The misuse of pesticide can cause adverse environmental impacts, e.g., pesticides can kill beneficial, natural predators or cause a decline in biodiversity. Pesticides can

pollute soil and water supplies, or directly or indirectly endanger the health of residents, livestock, crops, and wild animals. Additionally, the spraying equipment if not cleaned correctly can contaminate soil and water. In the case of a plant disease outbreak, the community may need to use pesticides. Use of toxic pesticides will be avoided. The land-based activities will correctly use SNI certified pesticides. The packaging materials for pesticides and fertilizers will be collected and treated at a central location. It is forbidden to wash such packaging in water bodies.

B. Non-land based activities

69. **Beekeeping.** Bees are important pollinators, helping to maintain ecosystems. Beekeeping can be an important sustainable and alternative source of income in rural areas, benefiting communities living in and around forests. Beekeeping can also help raise community awareness on good forest management, stimulating conservation and thereby improving biodiversity. However, the number of native honeybees can fall once honeybee hives are introduced. The native bee may need to compete for resources and require additional time to collect the nectar and pollen for her nest. The use of pesticides to grow flowers can kill honeybees and other useful insects (e.g., bumblebees). If pesticide residue is detected in the honey, the product cannot be sold as organic honey, which represents an economic loss to the beekeeper. To sustain the bee colonies and the beekeeping industry, an Integrated Pesticide Management agreement is needed. This agreement will stipulate to: (a) minimize the use of pesticides; (b) apply pesticides at night, when bees are not foraging; (c) avoid applying pesticides during the effective bloom period of flowers; (d) confine the bees when pesticides are being applied (i.e., beekeeper should be notified of the intention, date, time, and place of pesticide application); and (e) use pesticides that are less toxic to bees. The list of less-toxic pesticides will have to be researched before implementation.

70. **Catfish Culture (Aquaculture).** The negative environmental impacts attributed to aquaculture are mostly as a result of poor planning e.g., inadequate site selection. There is also the issue that some catfish farms use exotic species (especially the commercial fish farms), some use hybrids, and some use local species. The fingerlings supplied by the fisheries department are likely to be exotic. During operation, aquaculture can negatively affect habitats, through introduction of exotic fish species that can alter the diversity of the natural flora and fauna.

71. Aquaculture can lead to water pollution and habitat damage, especially through the effluents that contain a high concentration of organic matter. Effluents can have a high concentration of nitrogen and phosphorus due to fish excreta and other metabolic products. The aquatic environment and organisms can be contaminated with other chemicals, e.g., antibiotics. In well-managed aquaculture farms, the water quality of influents and effluents is not significantly different. This can be done by locating fishponds near an appropriate water source and ensuring that water supply is sufficient to maintain fishpond water quality. A simple wastewater treatment system (e.g., *nitrobacter* bacteria can reduce the organic waste of pond effluents) will need to be installed for catfish culture.

72. **Handmade Textiles (‘tenun’**). The textile industry uses high volumes of water to wash fibers, bleach, dye, and wash the finished products. This wastewater contains chemicals that can cause environmental damage, if not correctly treated before discharge. In addition, hot water is used in the dye process, and hot wastewater can be discharged into river systems. Higher water temperature can negatively affect the aquatic ecosystem. Many dyes, including natural dyes, do not stick well to the fabric. A large amount of color is washed away upon using

textiles e.g., only 80% of a synthetic dye is retained by fabric and the rest is flushed out. To minimize water-availability conflicts, the textile activity will only be allowed where the water supply is adequate and where the water demand does not surpass availability. The sustainable use of natural dyes will be promoted. A simple wastewater treatment system will need to be installed to support the textile activity.

C. Supporting Facilities

73. ADB SPS 2009 requires the EIA of all associated facilities to the project, including, among others, borrow pits and excavation sites.

74. **Construction of Small Scale Infrastructure.** Subprojects could include small-scale construction for ecotourism, road widening, micro-hydropower, and solar panels**.** Small-scale, localized construction could disturb or endanger adjacent residents and can disrupt existing services and access. Erosion and sedimentation due to subproject activities will need to be carefully managed. Based on the community-based approach, potential problems will be discussed with community members during the planning process. The FMU assisted by the community advisors will prepare a construction schedule that will include regular monitoring of potential problems to minimize and mitigate the disruptions and risks. The likely supporting activities are described in more detail below. Table 5 summarizes the potential impacts and mitigation measures.

75. **Ecotourism Facilities.** Various ecotourism activities are being considered, such as repairing traditional houses (*rumah bentang*) to accommodate tourists. Ecotourism activities could help convince local people that it is profitable to protect the environment. User fees or visitor admission fees can provide real economic incentives to protect areas. Ecotourism aims to change the unequal relationship typical of conventional tourism by encouraging the use of indigenous guides and local products, combining environmental education with basic or rustic travel comforts and/or accommodation. This helps to protect local flora and fauna, and provides local people with economic incentives to safeguard their environment. However, the tourism facilities could lead to habitat fragmentation. Building or renovating ecotourism facilities could generate some construction wastes, harmful emissions (e.g., oil, gasoline, metals, or other chemicals), or may generate noise. During operation, ecotourists will generate domestic wastewater (toilet wastes) and solid wastes that need to be managed. If ecotourism sites are not well controlled, too many tourists may come, which can disturb wildlife (e.g., during the critical breeding season), and/or result to habitat damage due to excessive trampling in nearby forests and erosion.

76. To minimize impacts, use environmental criteria to site ecotourism facilities and develop adequate waste management plans for all waste types (e.g., construction wastes and domestic wastes). If visitor numbers are high, it will also be important to set visitor quotas and visitor fees using environmental criteria. Quotas need to be based on a study of the local carrying capacity. Different visitor quotas may need to be set for rainy vs. dry season and breeding vs. non-breeding season. High fees may need to be set during high season or public holidays to curb visitor numbers.

77. **Small-Scale Road Rehabilitation or Construction.** Each of the 17 villages will have a small-scale road rehabilitation project (2 km X 2 m). Road projects, if not carefully designed, can result in habitat fragmentation. During construction, the main impacts of road works are from: (i) land clearing and spoils due to land clearing and site preparation; (ii) extraction of fill material either from cuts or borrow pits; (iii) soil erosion on slopes, in borrow pits, and along

embankments; and (iv) contamination of the land with hazardous and toxic chemicals through material spills. These disturbances may extend into the roadside vegetation, resulting in damage to species, or contaminated soil, plants, animals, and water.

78. A balanced cut-and-fill approach will be designed for each road link. Any excess cut will be used to shape embankments, strengthen the toe of high slopes, install road benches, and/or fill (pre-approved) low-lying areas. The PISU will approve the contractors' borrow pit and spoil management plans, which should outline the location of borrow pits, the fill locations for any excess material, and the rehabilitation measures at time of completion. All suitable material obtained from roadway excavation work will be used for construction of embankment or earthen shoulders.

79. Contractors will be encouraged to recycle any reclaimed asphalt into the pavement mix and reuse any aggregate for subgrade and base layers. The material that cannot be reused will be disposed according to a waste management plan.

80. During operation, an improved road could lead to higher running speeds, thus increasing the risk of collisions with wildlife and the risk of accidents with other vehicles, motorcycles and pedestrians. Improved access into an area due to the improved road can also increase hunting, poaching, or logging pressure in nearby protected areas, resulting in loss of wildlife, habitat, and vegetation. Improved access can also lead to land conversion (e.g., from forest land to agricultural land). Local authorities will be urged to control land use or induced development along the rehabilitated road. The PISU will monitor ribbon growth along the rehabilitated road and encroachment into sensitive areas.

81. **Micro Hydropower Plant (MHP)**. A MHP can be installed to generate electricity where the water current is very low (e.g., a few liters per minute) or where there is a very short drop (e.g., as little as 1 m). The electricity generated can be distributed up to 1 km away. When carefully planned and adapted to the local environmental condition, and with careful selection of the location and the appropriate and robust technology, micro hydropower schemes produce a continuous and predictable supply of electricity. MHP is a run-of-river system, meaning that the water that passes through the generator is returned to the stream.

82. With proper siting and technology, MHP in general has few negative environmental impacts, very low distribution and running costs. It does not require fuel and has low maintenance, and can be implemented and managed at the local level. Moreover, the hydropower can be reliable and the systems can last many years, without major new investment. The latter assumes that a good quality generator and turbine are purchased, to avoid frequent breakdowns and continuous maintenance. Based on personal communications, frequent breakdowns of MHP can be an issue in some areas in Indonesia. Reforestation in the upstream of the water body will be promoted to avoid reduction of water flow. Good construction practice will be applied when working in the stream or water body to minimize impacts on sediments. Care will be taken to ensure that the electric generator does not disturb fish movements.

83. **Small Solar Panel Facilities.** Larger scale solar panels should be correctly sited, but in general only small-scale systems will be used in this project. During operation, solar facilities do not generally produce air emissions (e.g., sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds, greenhouse gas, or carbon dioxide).

84. One potential environmental impact is that photovoltaic panels may contain hazardous materials. Solar panels are normally sealed, but if they are damaged or improperly disposed at time of decommissioning, there is potential for environmental contamination. Some of the chemicals or materials (e.g. oils or molten salts, hydraulic fluids, coolants, lubricants, or batteries) may be hazardous. Good planning and good maintenance practices, with appropriate waste management of damaged/expired parts can minimize the impacts from hazardous materials. Table 5 below summarizes the potential impacts and possible mitigation measures of the subproject activities.

Table 5: Summary of Potential Impacts and Mitigation Measures

Potential Impact in Project area	Positive / negative	Mitigation
Land-based cultivation: rubber agroforestry, rubber plantation, Kemiri Sunan Agroforestry (1,880 ha)		
Design		
Loss of locally-adapted biodiversity: Use of non-local seeds results in poorly adapted plantations and loss of local biodiversity.	-	· Select local seeds for plantations, to maintain local biodiversity and ensure that plants are adapted to local conditions.
Habitat loss: Poor selection of plantation sites could lead to land clearing and habitat loss.	-	· Implement plantation activity only in degraded areas,[7] e.g., mined out areas. · Avoid land use conflicts (e.g., using the same land as food crop areas). · Document the field condition of the land to be planted to ensure that no peat land, wetland, or native forested areas is selected for this activity.
Health and Safety: • Poor Occupational Health and Safety (OHS) practice during the construction or operation at worksites damages the health of workers (e.g., worker accidents while using farm tools). • Poor consideration of community health related to subproject construction or operation damages the health of community members (e.g., exposure to fertilizers and pesticides).	-	· Include into bid documents the following requirements (to be based on the IFC health and safety guidelines): · Contractors to develop Occupational Health and Safety Plan (OHSP) covering all aspects of the workers' safety. · Contractors to develop a Community Health and Safety Plan (CHSP) covering all aspects of the community's safety.
Habitat improvement: Correct selection of plantation site could *improve* degraded habitats, absorption of rainwater, and support biodiversity.	+	· Site the plantations in degraded areas and or on land that was previously cleared; · Implement SFM to support key ecological processes (e.g., soil improvement, water retention, biodiversity, & pollination). ·
Operation& Maintenance		
Habitat loss / damage to biodiversity: · When the plantation activity is near protected areas, invasive species could threaten biodiversity. · Plantation activity near protected areas can result in encroachment into the protected areas. · Plantation workers could increase hunting pressure in the protected area. · Excessive or misuse of pesticides can	-	· Use local species to minimize the risk of invasive species. · Ensure that plantation operator and workers sign a Code of Conduct to minimize encroachment and hunting, when plantation is located near protected area. · SUs to monitor community encroachment and Plantation Operators' adherence to Code of Conduct, when plantation is located near protected area(s). · Halt works if a protected species is

[7] Degraded lands are land areas with low carbon stocks; they typically do not have any peat, have minimal tree cover, and do not sequester as much carbon as natural forests.

Potential Impact in Project area	Positive / negative	Mitigation
kill beneficial biodiversity.		encountered, and discuss the matter with the conservation department, to determine any mitigation action. · Apply only SNI certified pesticides.
Loss of vegetation / disruption to wildlife: · Poor land clearing practices during operation could damage existing vegetation.	-	· Minimize land clearing during operation of the plantation.
Soil degradation: · Poor land clearing practices could increase soil erosion and soil nutrient loss. · Poor rubber plantation farm practices could reduce soil quality, e.g., through excess erosion. · Long-term application of chemical fertilizers could change physical and chemical features of the soil, resulting in soil hardening, poor soil quality, and reduced productivity.	-	· Implement site-appropriate agroforestry management practices to reduce erosion (e.g., terracing, silt pitting, and bunding), enrich soils (e.g., leguminous cover plants between the rows to assist with nitrogen fixation), and improve soil physical properties (e.g., moisture retention and infiltration). · Apply only SIN certified fertilizers in the correct quantity and at the correct time. · Switch to manure or organic fertilizers as soon as possible.
Pollution (soil and water) from fertilizers: · Excess fertilizer use could damage soils, pollute water supplies for biodiversity and humans, and directly or indirectly endanger the health of the residents, livestock, crops, and wild animals.	-	· Use SIN approved fertilizers. · Prioritize the use of organic fertilizers. · Periodically monitor the nutrient state of the plants and the soil quality to determine correct level of fertilizer application;. Do not over fertilize.
Pollution (soil and water) from pesticides / herbicides · Pesticide / herbicide runoff or waste pesticide / herbicide containers contaminate soil or water supplies, endangering health of biodiversity and humans	-	· Avoid the use of inorganic pesticides. · Avoid using herbicides. · Apply only SNI certified pesticides. · Collect and correctly manage pesticide wastes (e.g., excess chemical or packaging must be sent to a central facility).
I*ncrease risk of fire:* · Poor farm practices, related to management of vegetation debris, could increase the risk of fire.	-	· Land clearing or cleaning for plantations will be avoided or minimized. · Apply an appropriate waste management system for vegetation debris (e.g., compost the debris and use as fertilizer or soil conditioner).
Soil improvement: · Soils degraded through shifting cultivation are improved through the establishment of Hevea plantations.	+	· Adopt SFM practices. · Grow legume cover crop to reduce soil erosion.
Improved carbon sink: · The rubber plantation can serve as carbon sink; · The kemiri sunan agroforestry plantation supplies local biodiesel, which substitutes diesel oil.	+	· At the end of the latex production (~20 years), promote using rubber wood to make furniture, thus maintaining the carbon sink. · Ensure that there is local capacity and supporting infrastructure to use or distribute the local biodiesel.

Potential Impact in Project area	Positive / negative	Mitigation
Non land-based activities: beekeeping, catfish culture, &textiles could provide positive community-based economic impacts.		
Beekeeping: Beekeeping can be an important sustainable and alternative source of income in rural areas, benefiting communities living in and around forests. Some impacts are listed below.		
Design		
Health and Safety: • Poor OHS practice during the construction or operation at worksites damages the health of workers (e.g., bee stings and allergic reactions). • Poor consideration of community health related to subproject construction or operation damages the health of community members.	-	· Include into bid documents the following requirements (to be based on IFC health and safety guidelines): · Contractors to develop OHSP covering all aspects of the workers' safety; · Contractors to develop a CHSP) covering all aspects of the community's safety.
Operation:		
Loss of biodiversity: • The number of native honeybees can fall, once honeybee hives are introduced, due to competition over flower nectar. • The use of pesticides for flower cultivation can kill honeybees and other useful insects such as bumble bees.	-	• Use pesticides when absolutely needed (e.g., a pest population is out of control). • Don't use inorganic pesticides on flowers. • Use Integrated Pesticide Management. • Have the communities sign an *Integrated Pesticide Management Agreement* stipulating that when pesticides must be used:,, apply pesticides only at night when bees are not foraging; avoid applying pesticides during the effective bloom period of flowers; notify beekeepers when pesticides are being applied so that the bees can be confined in that period, and use pesticides that are less toxic to bees. (This will need to be researched prior to implementation).
• Economic loss to beekeepers if pesticide residue is detected in the honey (the product cannot be sold as organic, if it has pesticide residue).	-	• Apply / implement *Integrated Pesticide Management Agreement* (as described above); • Use organic, non-persistent pesticides (e.g., contact pesticides, not systemic pesticides).
Fish culture (aquaculture)		
Design / Construction		
Habitat loss / habitat damage: • Poor planning leads to inadequate site selection, and habitat damage.	-	• Locate fishponds near an appropriate water source and in a stable area not prone to landslide. Many small ponds (2 X 3 m) can be constructed under the Project. • Ensure that water supply is sufficient to maintain fishpond water quality. Fish ponds can require weekly flushing with clean water.
Operation		
Biodiversity loss /damage: • The introduction of exotic catfish species into the natural environment through escapees could alter biodiversity of the natural flora and fauna; • Catfish escaping to local streams or water bodies become a pest and aggressively compete local fish. • Bacteria or virus from infected catfish can spread to open water, infecting local fish leading to mortality. • Pond effluents containing antibiotics to control disease outbreaks harm local	-	• Select local species, if possible although this may not be possible if the local fisheries office only supplies exotic fingerlings. • Ensure that the catfish cannot escape the fishpond and invade the local water bodies. Ensure that the water quality in the fishpond remains adequate during operation. This may require the weekly replacement of about 1/3 of the pond water.

Potential Impact in Project area	Positive / negative	Mitigation
biodiversity.		
Water pollution: • Pond effluents pollute local water sources, due to high concentration of organic matter, nitrogen, and phosphorus (from fish excreta or excess feed. • Pond effluents containing antibiotics to control fish disease pollute open water.	-	• Ensure that catfish operations are well managed and that effluents comply with standards. This should be the case if 1/3 of the pond water is changed on a weekly basis. • PISU to periodically monitor to ensure that water quality of influents and effluents is not significantly different. • Maintain healthy conditions, to avoid use of antibiotics. • Apply simple waste water treatment for pond effluents as part of the subproject design (e.g., *Nitrobacter* bacteria can reduce the organic waste from fish ponds). • Recycle the treated water, if possible.
Handmade textiles		
Health and Safety: Poor OHS practice during the construction or operation at worksites damages the health of workers (e.g., risks related to handling hot water). Poor consideration of community health related to subproject construction or operation damages the health of community members (e.g., water pollution)	-	· Include into bid documents the following requirements (to be based on IFC health and safety guidelines): · Contractors to develop OHSP) covering all aspects of the workers' safety. · Contractors to develop a CHSP) covering all aspects of the community's safety.
Operation & Maintenance Phase		
Conflict in local water use: • Demand for water by textile industry interferes with local water use and use of water by biodiversity	-	• Only allow textile industry where water supply is adequate, and ensure that the textile industry water requirement does not surpass water availability. In areas where there could be some unexpected water supply issue, harvest rainwater to support local domestic consumption, textile industry, and fish farms.
Water Pollution: • The chemical wastewater from textile industry pollutes local water supplies, damaging the habitat and the health of biodiversity and the health of the local population. • The high temperature of effluents damages the receiving water body	-	• Promote the sustainable use of traditional dyes obtained from nature (e.g., use the leaves and roots of plants such as *Morinda citrifolia*, leaf sap, turmeric, bark of mango, mahogany, zopha, and hazelnut). • Install simple wastewater treatment system as part of the subproject design.
Support Activities: small infrastructure, small micro hydropower, and solar panels		
Ecotourism activities: One example is the renovation of traditional houses (*rumah bentang)* to accommodate visitors.		
Design:		
Habitat fragmentation: • Improperly sited ecotourism facilities could lead to habitat fragmentation.	-	• Use environmental criteria to site ecotourism facilities.
Health and Safety: • Poor OHS practice during the construction or operation at worksites damages the health of workers (e.g.,	-	· Include into bid documents the following requirements (to be based on IFC health and safety guidelines): · OHSP covering all aspects of the

Potential Impact in Project area	Positive / negative	Mitigation
use of personal protection equipment during construction). • Poor consideration of community health related to subproject construction or operation damages the health of community members (e.g., communicable disease to/from visitors and to/from wildlife).		workers' safety; · Contractors to develop a CHSP covering all aspects of the community's safety.
Construction Phase		
Pollution from wastes: • Building or renovating ecotourism facilities could generate some construction wastes, harmful emissions (e.g., oil, gasoline, metals, or other chemicals), or may generate noise.	-	• Correctly manage any construction wastes within a waste management plan. • Inform local community about construction schedule to minimize nuisance issues.
Operation & Maintenance Phase		
Pollution from wastes: • During operation, ecotourists will generate domestic wastewater (toilet wastes) and solid wastes that need to be managed.	-	• Construct simple wastewater treatment system (e.g., simple septic tanks) to treat the domestic wastewater of visitors. • Provide garbage bins at strategic points; • Implement a waste management hierarchy for tourism wastes (e.g., compost organic wastes). • Educate visitors on environmental management and good waste management practices through signboards and simple notices. • Educate visitors on how to help protect local flora and fauna and provide local people with economic incentives to safeguard their environment.
Cultural Damage: • Ecotourists can introduce cultural norms that are in conflict with local social norms.	-	• Educate visitors on cultural norms.
Habitat Damage: • High numbers of ecotourists result in habitat damage.	-	• If visitor numbers are high, it will also be important to set visitor quotas and visitor fees using environmental criteria. Quotas need to be based on a study of the local carrying capacity: different visitor quotas may need to be set for rainy vs. dry season and breeding vs. non-breeding season; high fees may need to be set during high season or public holidays to curb visitor numbers.
Small-scale road rehabilitation: Each of the 17 villages will have a small road rehabilitation project (2km X 2m).		
Design:		
Habitat loss / biodiversity loss / habitat fragmentation • Road projects, if not carefully designed and sited, can result in habitat fragmentation. • The location of the improved road can improve community access to	-	• Carefully site road projects to avoid habitat fragmentation. • Local government to control land use / induced development / encroachment along the rehabilitated road and to forbid an increase in ribbon growth along the road. • PISU to monitor ribbon growth along the

Potential Impact in Project area	Positive / negative	Mitigation
sensitive areas, leading to encroachment (e.g. agriculture), logging, and hunting in nearby protected areas.		rehabilitated road and encroachment into sensitive areas.
Excessive use of local resources (e.g., borrow materials) • Poor planning leads to excessive use of borrow materials and excess spoil areas during construction.	-	• Plan for a balanced cut-and-fill approach for each road link; • Plan to use any excess cut to shape embankments, strengthen the toe of high slopes, install road benches, and/or fill (pre-approved) low-lying areas; • PCU / PISU to approve the Contractors' *Spoil Management, Drainage Management, and Borrow Pit Management Plan*. The plan should outline the location of borrow pits, the fill locations for any excess material, and the rehabilitation measures at time of completion.
Health and Safety: • OHS practice during the construction or operation at worksites damages the health of workers (e.g., use of personal protection equipment during construction). • Poor consideration of community health related to subproject construction or operation damages the health of community members (e.g., risk of accidents with faster moving vehicles).	-	· Include into bid documents the following requirements (to be based on IFC health and safety guidelines): · Contractors to develop OHSP covering all aspects of the workers' safety; · Contractors to develop a CHSP covering all aspects of the community's safety.
Construction: During construction, the main impacts of road works are from (i) land clearing and spoils due to land clearing and site preparation; (ii) extraction of fill materials (either from cuts or borrow pits); (iii) drainage management and soil erosion on slopes, borrow pits, and embankments; and (iv) contamination of the land with hazardous and toxic chemicals through material spills. These disturbances may extend into the roadside vegetation, resulting in damage to species, or contaminated soil, plants, animals, and water.		
Soil erosion / increase risk of landslide: • Poor land clearing practices, spoil management practices, or borrow pit exploitation practices leave large areas of soil barren and prone to erosion.	-	• Minimize cut areas. • Develop, implement, and monitor a site-specific plan to manage spoils, drainage, borrow its, and wastes.
Siltation of water bodies, due to poor drainage management	-	• Minimize land clearing and cut areas. • Install drainage ditches and siltation pits where needed. • Develop, implement, and monitor a site-specific plan to manage spoils, drainage, borrow pits, and wastes.
Pollution from poor waste management practices	-	• Develop, implement, and monitor a site-specific plan to manage spoils, drainage, borrow pits, and wastes. • Encourage Contractors to recycle any reclaimed asphalt into the pavement mix and reuse any aggregate for subgrade and base layers. The materials that cannot be reused will be disposed according to the spoil/waste plan. • Use all suitable material obtained from roadway excavation to construct embankments / earthen shoulders. • Compost vegetation waste.

Potential Impact in Project area	Positive / negative	Mitigation
Operation (of small scale road)		
Biodiversity loss / loss of habitat: • Improved access into an area due to the improved road can increase hunting, poaching, or logging pressure in nearby protected areas resulting in loss of wildlife, habitat, and vegetation. • Improved access can also lead to land conversion (e.g., to agriculture and plantations).	-	• Educate local people on the economic benefits of protecting biodiversity and ecotourism. • Local government to control land use / induced development / encroachment along the rehabilitated road and to forbid an increase in ribbon growth along the road. • SUs to monitor ribbon growth along the rehabilitated road and encroachment into sensitive areas.
Increase risk of accidents: • During operation, an improved road could lead to higher vehicle running speeds, thus increasing the risk of collisions with wildlife and the risk of accidents with other vehicles / motorcycles / pedestrians.	-	• Manage traffic through road furniture, where needed (e.g., signs or speed humps); • Traffic police to enforce traffic regulations.
Damage to biodiversity and roadside due to poor management of road maintenance wastes.		• Manage road maintenance wastes, as per waste management plan (e.g., vegetation debris to be composted in a suitable location).
Micro hydropower: If planned carefully and well adapted to environmental conditions, micro hydropower schemes produce a continuous and predictable supply of electricity in comparison to other small-scale renewable technologies.		
Design (micro hydropower)		
***Disturbance to power generation*:** • Water availability fluctuates too much, causing power generation issues (electric force will be weakened if the source of the water fluctuates too much).	-	• Correctly site micro hydropower to avoid water availability problems. • Promote reforestation in upstream of the river/stream to avoid reduction of water flow.
Health and Safety: • OHS practice during the construction or operation at worksites damages the health of workers; (e.g., use of personal protection equipment during construction); • Poor consideration of community health related to subproject construction or operation damages the health of community members (e.g., risk of electrical shocks or house fires due to electrical short circuit).	-	· Include into bid documents the following requirements (to be based on IFC health and safety guidelines): · Contractors to develop OHSP covering all aspects of the workers' safety; · Contractors to develop a CHSP covering all aspects of the community's safety.
Construction (of micro hydropower)		
Disturbance to stream leads to siltation or erosion (potentially disturbing local water supply).	-	• Apply good construction practice, when working in stream / water body (to minimize sediments and disruption to stream bed).
Operation (of micro hydropower)		
Disturbance to aquatic habitat and fish species.	-	• Ensure that electric generator does not block fish movements from upstream to downstream. • Promote reforestation in upstream of the river to avoid reduction of water flow.
Small solar panels: Can reduce the air emission impacts related to using fossil fuel, including reducing GHG.		
Design:		
Habitat loss / biodiversity loss	-	• Site any larger scale solar system in lower-quality locations (e.g., brownfields, or existing transportation and transmission corridors).

Potential Impact in Project area	Positive / negative	Mitigation
Construction (solar panels)		
Loss of biodiversity, soil erosion, and drainage impacts: • Land clearing for the larger installations lead to the above mentioned impacts.	-	• Correctly site solar installations, to minimize impacts on greenfield locations. • Apply best practices in construction.
Operation and Maintenance (solar panels)		
***Pollution (land or water) from damaged components, spills, and decommissioned part*s** including some potentially hazardous wastes.	-	• Provide an appropriate maintenance and waste management system to minimize impacts from hazardous materials. • Correctly manage used batteries (send to a central location).

V. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM

85. All subprojects will comply with public consultation and information disclosures in accordance with ADB and GOI requirements during the UKL or UPL or IEE or SPPL preparation or implementation phase.

A. Public Consultation

86. Public consultation is an integral part of the identification, selection and implementation of the project village-level subprojects. Public consultation should be carried out in a meaningful manner and on an ongoing basis. The project has conducted some public consultation already, in compliance with the ADB SPS 2009. The individual IEEs provides a summary of the issues raised by local communities, the list of consulted people, and the project's response to local concerns. This section mainly addresses the consultation for environmental assessment.

87. For all category B subprojects, at least one consultation will be conducted to inform stakeholders about the subproject, the potential impacts, and likely mitigation. The PISU–ESS will assist with consulting people and groups likely to be affected by the proposed development, other stakeholders deemed relevant, and local non-governmental organizations. Furthermore, the results of the environmental assessment checklists will be discussed at the village meeting. Additional consultations can be held with particular groups or individuals, if deemed necessary.

88. In conformity with best practices, the consultation process will:

- Begin as early as possible in the preparation stage;
- Provide timely disclosure of relevant and adequate information in an understandable and readily accessible format;
- Be conducted in an atmosphere free of intimidation or coercion;
- Be conducted in a gender inclusive and responsive manner, tailored to the needs of vulnerable groups;
- Be commensurate with the scale of the subproject activities and potential impacts;
- Document the environmental concerns raised at the village meetings into meeting minutes and incorporate the concerns into the environmental assessment document and relevant decisions (e.g., incorporate into the design and mitigation measures, where needed); and
- Establish a GRM to review complaints regarding environmental performance.

B. Information Disclosure

89. Environmental documents (e.g., business plan/project activities, REA, UKL or UPL or IEE, and SPPL) are subject to public disclosure. These documents will be made available upon request in Bahasa Indonesia and/or English, and will be available at appropriate locations (e.g., PISU, FMU, PCU, ADB website).

90. Once a subproject has receives all its necessary approvals (e.g., approval of UKL or UPL or IEE and environmental permits), community contracts will be prepared for the subproject. The signed contract, progress reports, and financial records of the subproject will be posted on signboards or kept at the relevant FMU and/or PISU offices.

C. Grievance Redress Mechanism

91. A GRM is a systematic process to receive, evaluate, and address the project-related grievances of affected persons (AP) and/or groups. The EA will set up GRM at national level in consultation with relevant stakeholders within six months of grant effectiveness and post it publicly on the project website with outreach for all project areas. In addition, as part of the output 2 of the project, PISU will establish a GRM at provincial level focusing on tenure and REDD+ issues. Provincial level GRM focusing on REDD+ will also be established within six months of grant effectiveness. An information disclosure mechanism in Bahasa will also be in place at district level to ensure that the local communities in Kapuas Hulu and Sintang districts are aware of grievance mechanisms and their potential involvement and responsibilities in the project activities.

92. The PISU will operationalize the GRM at various levels to receive and facilitate the resolution of concerns, complaints, and grievances (both safeguards related and non-safeguards related). Any complaint from community will be managed in accordance with the GRM. The project, with the assistance of the PISU, will work proactively to prevent issues from becoming grievances by ensuring that appropriate mitigation measures are correctly implemented by monitoring and conducting public consultation procedures.

93. The intent of the GRM is to satisfactorily resolve complaints about the environmental performance during the pre-construction, construction, operation, and maintenance phases. The GRM will (i) protect the basic rights and interests of every person affected in the case of poor environmental performance; and (ii) ensure that concerns arising from the poor environmental performance are effectively and timely addressed. The GRM can also be applied to other types of complaints (e.g., technical issues), but the focus of the discussion below is on environmental complaints.

94. The PCU, the PISU, FMUs, and the province/district/sub-district/village will make the public aware of the GRM through public awareness campaigns, training, and capacity building. PISU will nominate and train one staff to be the environmental grievance point person (GPP). Any person who has complaints regarding environmental performance (e.g., land acquisition, dust, noise, safety, environmental standards, criminal activity, disturbance to plants/wildlife, or access problems) during the pre-construction, construction, or operation phases will have access to the GRM.

95. The GPP will ensure that:

(i) The GRM and the GPP's contact details are publicly disclosed and posted in strategic places in the subproject's area of influence (e.g., community offices);
(ii) The GRM is accessible to all affected communities;
(iii) The GRM mechanism is socialized;
(iv) The public, especially the people in the subproject's area of influence, are aware of their rights and have access to the GRM mechanism free of administrative and legal charges;
(v) An AP / affected group can raise a grievance in confidence. If the complainant asks the GPP to protect his or her identity, the person/s' identity should not be disclosed without consent;
(vi) Households or groups of households use a Standard Complaint Form to record their complaint about the effects of any subproject on their property, production system, economic well-being, spiritual life, quality of surface and ground water, quality of air, health, safety, welfare, or any other relevant aspect. The GPP will provide the form;
(vii) Complaints are resolved at the earliest time and at the lowest level of government possible, e.g., at village level;
(viii) The complaint handling mechanism is objective, fair, and transparent;
(ix) The registry of complaints and follow-up resolutions is documented and disclosed, and reported to ADB and higher levels of government.

96. The grievance investigation and resolution process is outlined below. It shows the escalating steps (i.e., if the grievance cannot be solved at village/field level, it is processed at the next lowest administrative level).

***Step 1*:** The APs or affected households (AHs), or groups of households send the Standard Complaint Form to the GPP.

***Step 2**:* If the complaint is valid, the GPP will conduct a meeting (within 15 days from the date of receiving the complaint) with the relevant agency or contractor or subcontractor to discuss how to resolve the complaint. All decisions will be recorded and copies of the meeting minutes will be provided to the AP or AH. The relevant agency will implement the agreed mitigation measures within 15 days, or within some other agreed period. Once the complaint is resolved, the relevant parties (e.g., AP/AH, agency, and GPP) will sign and annotate the Standard Complaint Form, with copies sent to all parties.

***Step 3**:* If there is no solution reached or if there is no response from the relevant agency within 15 days of registering the complaint, the AP/AH can appeal to the relevant sub-district*/kecamatan*. The sub-district will make a decision and apply mitigation measure within 15 days of receiving the appeal. Once the complaint is resolved, the relevant parties will sign and annotate the Standard Complaint Form, with copies sent to the relevant parties.

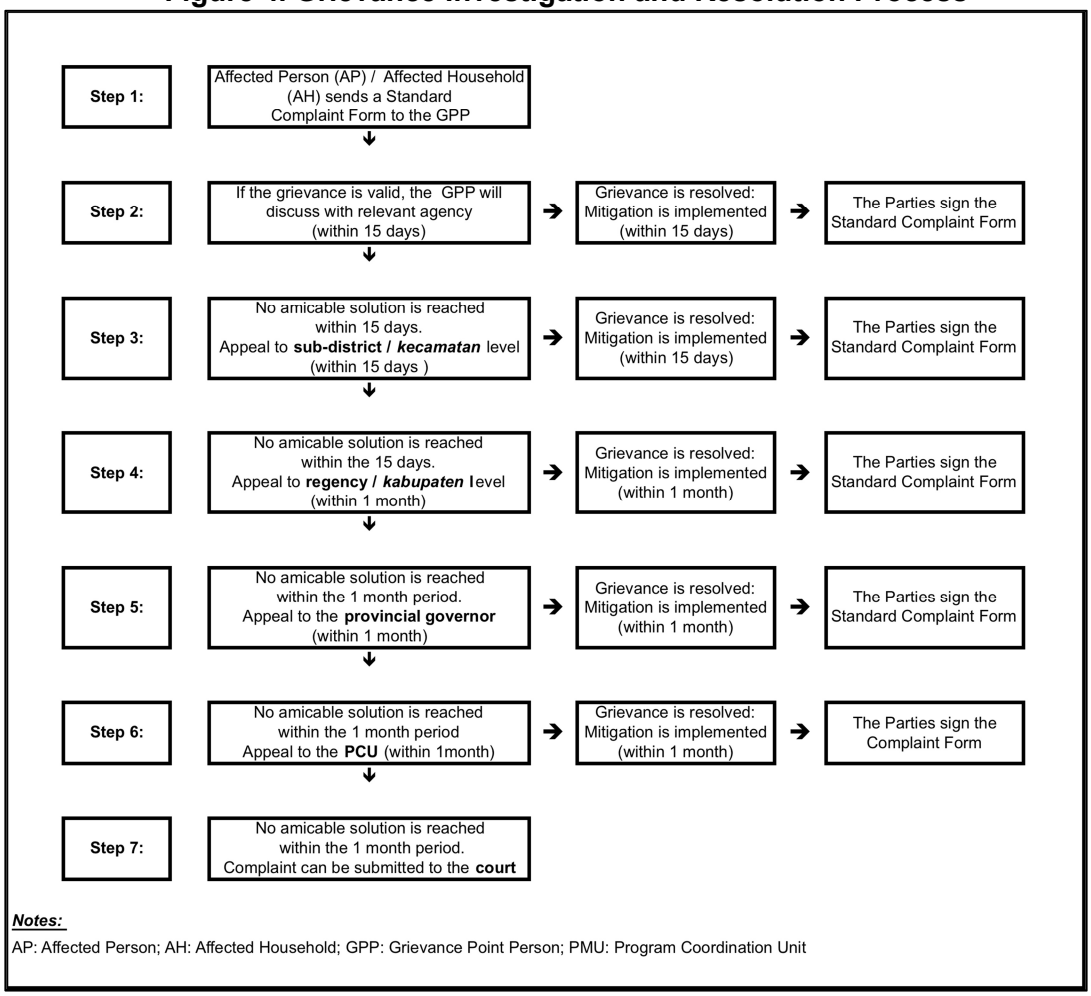
Step 4: If there is no solution reached or no decision or mitigation measure received from the sub-district/*kecamatan* within 15 days of registering the complaint, the AP/AH can appeal to the regency/*kabupaten* through the GPP. The Regency will decide and take a mitigation measure(s) within one month of receiving the appeal. Once the complaint is resolved, the complainant, the relevant parties, the Regency, and the GPP will sign the Standard Complaint Form.

***Step 5**:* If there is no solution reached or no decision or mitigation measure received from the regency/*kabupaten* within one month of registering the complaint, the APs/AHs can appeal to the provincial governor through the GPP; the governor will decide and take mitigation measure(s) within one month of receiving the appeal. Once the complaint is resolved, the complainant, the relevant parties, the provincial governor, and the GPP will sign the Standard Complaint Form.

***Step 6**:* If there is no solution reached or if there is no response from the provincial governor within one month of registering the complaint, the APs/ AHs can appeal to the PCU through the relevant GPP. The PCU will provide a decision and take mitigation measures within one month of receiving the appeal. When the complaint is resolved, the complainant, the relevant parties, the GPP, and the PCU will sign the Standard Complaint Form; this form will also be copied to ADB.

Step 7: If the AP/AH is unsatisfied with the decision of the PCU or if there is no response within the stipulated time, the AP/AH as a last resort may submit his/her case to the court to redress the grievance.

Figure 4. Grievance Investigation and Resolution Process



VI. INSTITUTIONAL ARRANGEMENTS AND RESPONSIBILITIES

A. Authority and Responsibilities

97. The FIP Steering Committee (SC) for Indonesia comprises officials from MOEF, Ministry of Finance (MOF), National Development Planning Agency (BAPPENAS), Ministry of Home Affair (MOHA), Dedicated Grant Mechanism (DGM), DKN, FIP Focal Point, and MDBs (ADB, WB and IFC) as observers. The FIP SC will provide oversight for the program and coordinate REDD+ policy priorities across various ministries, and provide coordination among the FIP supported engagements by ADB, WB and IFC.

98. The project's EA is MOEF's Directorate General of Social Forestry and Environmental Partnerships (Perhutanan Social dan Kemitraan Lingkungan – PSKL). The EA will oversee project activities as per standards and requirements of the financing modality and will ensure in coordination with MOF and ADB that the flow of funds is well organized.

99. There are three implementing agencies at national level:
- (i) Directorate of Business Development for Social Forestry and Customary Forests (*Bina Usaha Perhutanan Sosial dan Hutan Adat, BUPSHA*);
- (ii) Directorate of Environmental Services Utilization of Conservation Forest *(Pengelolaan Jasa Lingkungan Hutan Konservasi, PJLHK*);
- (iii) Directorate of Production Forest Management (*Kesatuan Pengelolaan Hutan Produksi, KPHP)*.

100. There are four provincial technical implementation units (*Unit Pelaksana Teknis, UPT*):
- (i) Implementation Unit for Social Forestry and Environmental Partnerships Office (BPSKL)
- (ii) Implementation Unit for Production Forests Utilization (BPPHP);
- (iii) Implementation Unit for Forest Area Establishment (BPKH);
- (iv) Implementation Unit for Betung Kerihun National Park and Danau Sentarum National Park (BBTNBKDS).

101. There are five FMUs at field level. The project implementation supporting unit (PISU) will work at the different levels of implementation (national, provincial and district). The composition of the PISU is shown below.

Experts	Inputs (PM)
Key Experts	
International	
International REDD+ and SFM Specialist	10
International REDD+ Economics and Fiscal Policy Specialist	5
International REDD+ Monitoring, Reporting and Verification (MRV) Specialist	5
Subtotal (International)	**20**
National	
National REDD+ Specialist and Team Leader	60
National SFM (Agroforestry and Assisted Natural Regeneration) Specialist	30
National REDD+ Economics and Fiscal Policy Specialist	30
National REDD+ MRV Specialist	30
National REDD+ Safeguards Information System Specialist	30
Subtotal (National)	**180**
Total Key Experts	**200**

Experts	Inputs (PM)
Non-Key Experts	
National REDD+ Capacity Building Specialists (3 persons, 45 pm each)	135
National Land Use and Spatial Data Management Specialist	30
National Forest Fire Management Specialist	20
National FMU Business Development and Market Promotion Specialist	20
National Community Empowerment Specialist	30
National Monitoring and Evaluation Specialist	30
National Social Safeguards Specialists (2 persons, 30 pm each)	60
National Forest Conflict Management Specialist (2 persons, 20 pm each)	40
National Gender and Social Development Specialist (2 persons, 20 pm each)	40
National Environmental Safeguards Specialist	30
National Stakeholder Communication and Public Relations Specialist	30
National Procurement Specialists (2 persons, 20 months each)	40
National Financial Management and Administration Specialists (2 persons, 30 pm each)	60
National REDD+ Village Coordinators (2 persons, 60 pm each)	120
National REDD+ Village Facilitators (7 persons, 60 pm each)	420
National Project administration and accounting assistants (5 persons, 60 pm each)	300
Total Non- Key Experts	**1,405**
TOTAL INPUTS	**1,605**

102. With regard to EARF, the PISU–ESS, in collaboration with Safeguards Information System specialist, social safeguards specialist and other consultants, will:

(i) Screen and categorize all future subprojects in accordance with the requirements of the government;
(ii) Screen and categorize all future subprojects in accordance with ADB screening criteria, REA checklist(s), and this EARF;
(iii) Ensure ADB's approval of the first two categorization exercises, and then if designated by ADB to do so, conduct subsequent categorizations.ADB will occasionally monitor the result of categorizations;
(iv) Contract relevant teams to prepare the UKL or UPL or SPPL based on the categorization / screening result;
(v) Ensure that the UKL or UPL or SPPL meet the requirements of the government;
(vi) Ensure that the relevant environment authority at the provincial or district level approves the UKL or UPL or SPPL;
(vii) Obtain any GOI environmental clearance document, where needed;
(viii) Ensure that all the UKL or UPL or SPPL meet the ADB IEE requirements and standards and the requirements of this EARF;
(ix) Ensure that the UKL or UPL or SPPL is disclosed to the public in an appropriate format;
(x) Ensure that the first two UKL or UPLs are fully translated into English, for review by ADB. The approval of subsequent UKLs or UPLs on the same type of interventions may be delegated to the PCU–Project Director;
(xi) The first two UKLs or UPLs or IEE for Bungan Jaya and Tanjung Sari have been developed;
(xii) Prepare the first UKL or UPL of any subproject that has interventions beyond

those approved in the first two UKLs or UPLs for ADB review and approval (including full translation into English).The approval of subsequent UKLs or UPLs on the same type of interventions may be delegated to the PCU–project director;

(xiii) Ensure that all UKLs or UPLs (delegated to the PCU–project director for approval) have an adequate English executive summary (to facilitate ad hoc reviews by ADB);

(xiv) Include UKLs or UPLs or SPPLs into the bidding documents and work contracts;

(xv) Ensure that the contractors prepare EMP and monitoring plans before starting construction;

(xvi) Monitor the implementation of the environmental mitigation measures of the UKLs or UPLs or IEEs);

(xvii) Review, monitor, and evaluate the effectiveness of the environmental management and recommend corrective actions, as needed;

(xviii) Develop a tracking system to ensure a good overview of the status or progress of the environmental management of all subprojects (e.g., status of screening process, categorization, completed reports, approvals, implementation status, monitoring results, and corrective actions);

(xix) Prepare monthly and quarterly environmental monitoring reports, and submit them to the PCU;

(xx) Prepare and submit consolidated semi-annual environmental monitoring reports to the PCU;

(xxi) Contract an independent safeguard monitoring entity to verify monitoring results;

(xxii) Address, record, and report on the GRM in a timely manner;

(xxiii) Where noted, bring to the attention of the PCU any related capacity development issue that has to be implemented at the subproject level.

103. Other project partners (e.g., FMU) and the local BLH will assist in the implementation of environmental safeguards and in environmental monitoring within their area of operation.

B. Capacity to Implement IEE and UKL or UPL

104. A key point in Indonesia's impact assessment system is that the AMDAL document must be prepared by suitably trained and registered experts. In the case of AMDAL, the Team Leader and at least two of the team experts should be certified by LSK (Institution for Competence Certification), e.g., LSK–INTAKINDO (the Association of Indonesian Consultants). There is no specific certification required to prepare a UKL or UPL.

105. It is assumed that as is the case of other more remote provinces, West Kalimantan only has a limited number of sufficiently trained and experienced persons to conduct environmental assessment and a limited number of government personnel with the expertise to monitor the environmental management of projects and subprojects. To fill the environmental assessment capacity gap, it is common to hire some external consultants (e.g., often from Java) to do some of the environmental work.

106. The PISU will have an environment safeguard specialist (ESS) to assist with and advise on all matters related to environmental management from capacity building, environmental screening and categorization, report writing, implementation of the UKL or UPL, monitoring and auditing. PISU will also have two social safeguards specialists and a safeguards information system specialist. The ESS will train all relevant subproject staff and stakeholders on the EARF document and its requirements. Ultimately, the ESS is responsible for implementation of all EARF requirements. Annex 7 shows draft TORs for ESS.

1. Environmental Mitigation

107. The ESS will implement the UKL and any additional environmental safeguards through its contractors or developers. The ESS will develop the capacity of the field staff to implement and/or monitor the implementation of the UKL mitigation measures through formal workshops and on-the-job mentoring.

2. Environmental Monitoring

108. The PISU-ESS will implement the RPL. The ESS will be able to call upon the national and provincial forestry offices, local BLH, or local environmental consultants to assist with field monitoring. The frequency of specific monitoring (e.g., water quality monitoring for BOD, pH, total suspended solids, and ammonia) will be in accordance with the schedule outlined in the RPL. The ESS will develop the capacity of local staff to conduct subproject monitoring through formal workshops and on-the-job mentoring. The ESS will prepare a simple monitoring form to assist the implementation of field monitoring.

109. The ESS will compile all the environmental monitoring reports and submit for review and consolidation. The monitoring report will highlight any non-compliance. The PISU will integrate the consolidated environmental reports on all subprojects into its quarterly and semi-annual progress reports to the EA and to ADB.

C. Capacity Development Needs

110. The ESS will provide technical guidance for the environmental planning and implementation of the subprojects. The ESS will need experienced and qualified field staff and government officers knowledgeable in environmental management to effectively meet the project's environmental requirements.

111. The ESS will implement capacity development program for environmental management:

(i) Train general project staff on the environmental management and monitoring requirements of the subprojects, in accordance with this EARF and the UKL or UPL or IEE requirements through annual workshops;
(ii) Intensively train field-level Project staff having environmental and social responsibilities on the EARF and the UKL or UPL or IEE requirements (workshops and on-the-job training including training on writing and reviewing UKL or UPL reports to fulfill the IEE requirements);
(iii) Invite local government, FMU staff having environmental responsibilities to the general and intensive training workshops to enhance government capacity for environmental management and for managing the safeguard requirements of externally-funded projects;
(iv) Provide specific training sessions to the supervising engineers, contractors to implement the UKL or UPL and to manage the environmental issues of subprojects;
(v) Provide contractors with some explicit environmental management demonstrations, where needed (e.g., good erosion management techniques).

112. It is likely that the project will need to hire additional local environmental consultants to complete some of the work. Other relevant points include:

(i) An AMDAL certificate is not required to write a UKL or UPL report;
(ii) UKL or UPL reports are not formally approved through a technical commission and this can adversely affect the quality of reports;
(iii) In spite of the above points, the UKL or UPL report must meet the ADB IEE standards;
(iv) It can be argued that the personnel responsible for the UKL/UPL require a high level of capacity/expertise to complete the work.

113. For the above reasons, it is recommended that local staff (with different substantive capacity: e.g., forestry, agroforestry, water quality) are sent for AMDAL certificate training. This will help build local capacity to write more complex reports. Subsequently, the ESS will need to intensively train these same staff on the EARF and on the UKL or UPL or IEE report requirements.

D. Staff Requirements and Budget

114. The EA will hire an environmental safeguards specialist two social safeguards specialists and a safeguards information system specialist as part of PISU. The specialists will be accountable for implementing the EARF. The total budget for environmental management is estimated at Rp. 2.9 billion. The budget includes costs associated with environmental safeguards specialists, preparation of the UKL or UPL or SPPL documents, environmental permits, environmental monitoring (including field trips, auditing, and lab fees), development and implementation of environmental management plan (EMP) including costs for monitoring and mitigation during pre-construction, construction and operation phases, and training.

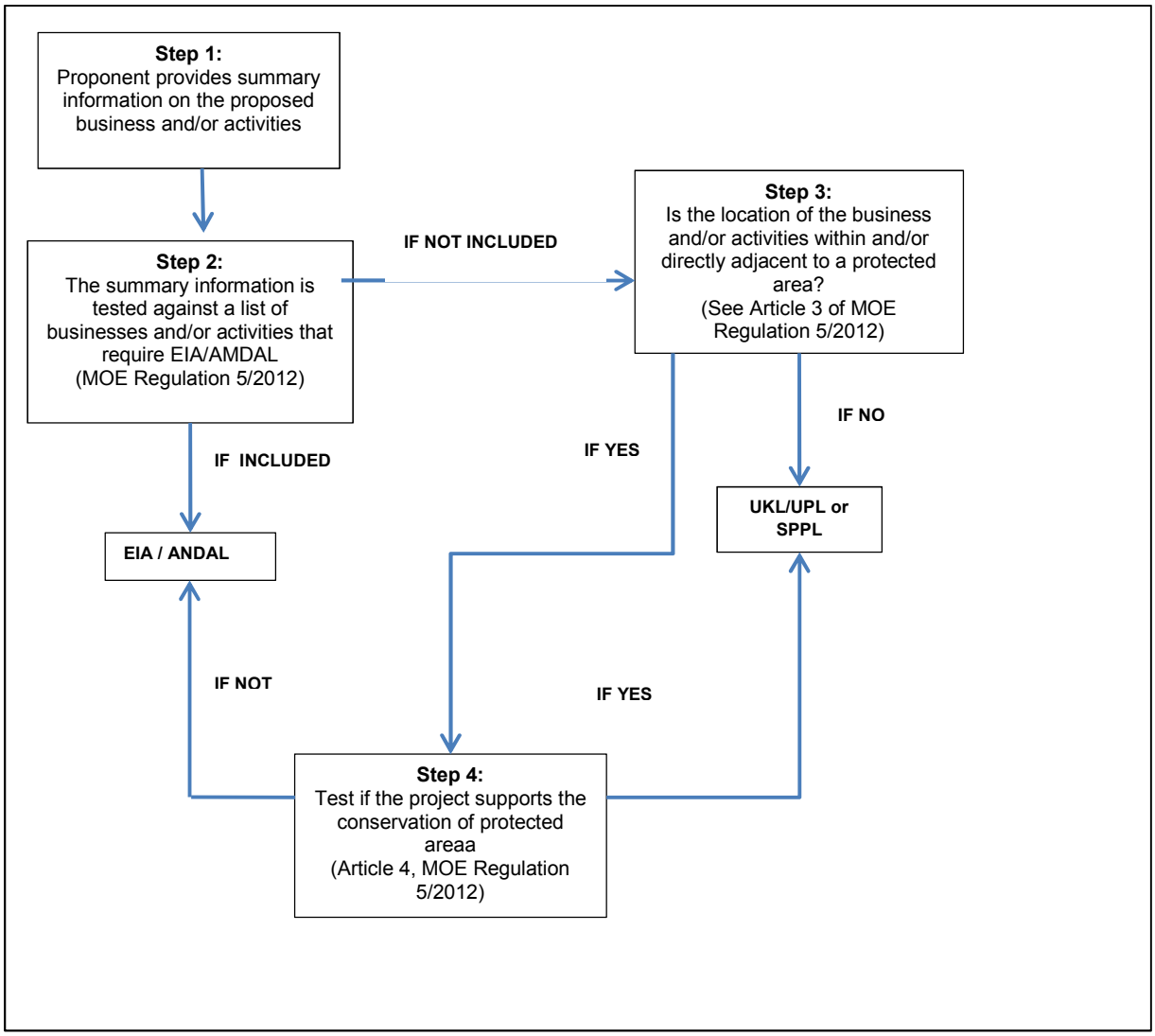
Table 6. Estimated Budget for Environmental Management

Item	Unit Costs	Total Amount (Rp)
1. National Environmental Safeguards Specialist	Rp. 18 million /month for 30 months	540,000,000
2. National Safeguards Information System Specialist	Rp. 18 million/ month for 30 months	540,000,000
3. UKL or UPL and/or SPPL preparation *(and additions related to IEE requirements)*	Rp. 400 million per district x 2 districts	800,000,000
4. Budget for EMP, including monitoring and mitigation measures	Details to be elaborated during implementation	600,000,000
5. Training and Workshops on environmental management	For project staff and communities	200,000,000
6. Environmental Permit	Rp. 10 million per district x 2 districts	20,000,000
7. Water, soil, & air quality monitoring (tests)*	Rp. 50 million per monitoring (twice a year for 2 years)	200,000,000
TOTAL (IDR)		2,900,000,000

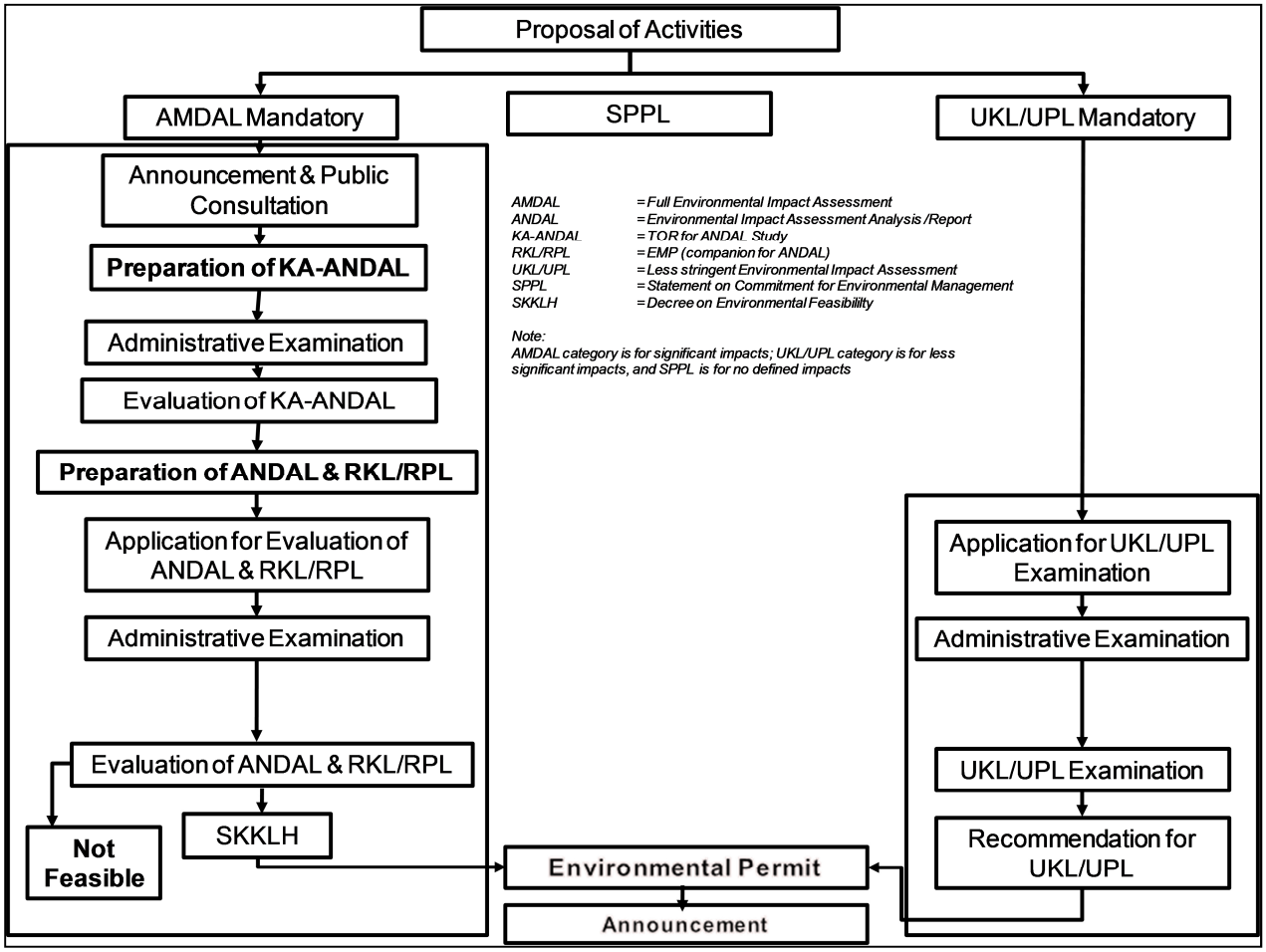
Notes:
*Monitoring is funded for only two years by the project
Travel costs are included in operational cost. Environmental assessment cost in the budget includes activities 3, 6 and 7 in the table.

Annex 1: Environment Screening Process

(based on Minister of the Environment Regulation No 5/2012)



Annex 2: Flowchart of Indonesian Environmental Clearance[8]



Source: ADB. 2015. EARF for Indonesia: Flood Management in Selected River Basins Sector Project. Prepared by Ministry of Public Works and Housing of the Republic of Indonesia (June 2015).

[8] AMDAL refers to the whole environmental impact assessment process, whereas *ANDAL* refers specifically to the environmental impact analysis. This ANDAL analysis is supported with a RKL/RPL (EMP) to manage and monitor impacts.

Annex 3: ADB Prohibited Investment Activities List

The following do not qualify for the Asian Development Bank financing:

(i) Production or activities involving harmful or exploitative forms of forced labor[9] or child labor;[10]

(ii) Production of or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international phase outs or bans, such as (a) pharmaceuticals,[11] pesticides, and herbicides,[12] (b) ozone-depleting substances,[13] (c) polychlorinated biphenyls[14] and other hazardous chemicals,[15] (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora,[16] and (e) transboundary trade in waste or waste products;[17]

(iii) Production of or trade in weapons and munitions, including paramilitary materials;

(iv) Production of or trade in alcoholic beverages, excluding beer and wine;[18]

(v) Production of or trade in tobacco;

(vi) Gambling, casinos, and equivalent enterprises;

(vii) Production of or trade in radioactive materials,[19] including nuclear reactors and components thereof;

(viii) Production of, trade in, or use of unbonded asbestos fibers;[20]

(ix) Commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests; and

(x) Marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.

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[9] Forced labor means all work or services not voluntarily performed, that is, extracted from individuals under threat of force or penalty.

[10] Child labor means the employment of children whose age is below the host country's statutory minimum age of employment or employment of children in contravention of International Labor Organization Convention No. 138 "Minimum Age Convention" (www.ilo.org).

[11] A list of pharmaceutical products subject to phase outs or bans is available at http://www.who.int.

[12] A list of pesticides and herbicides subject to phase outs or bans is available at http://www.pic.int.

[13] A list of the chemical compounds that react with and deplete stratospheric ozone resulting in the widely publicized ozone holes is listed in the Montreal Protocol, together with target reduction and phase-out dates. Information is available at http://www.unep.org/ozone/montreal.shtml.

[14] A group of highly toxic chemicals, polychlorinated biphenyls are likely to be found in oil-filled electrical transformers, capacitors, and switchgear dating from 1950 to 1985.

[15] A list of hazardous chemicals is available at http://www.pic.int.

[16] A list is fauna and flora is available at http://www.cites.org.

[17] The Basel Convention defines such wastes; see http://www.basel.int.

[18] This does not apply to project sponsors who are not substantially involved in these activities. *Not substantially involved* means that the activity concerned is ancillary to a project sponsor's primary operations.

[19] This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment for which ADB considers the radioactive source to be trivial and adequately shielded.

[20] This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.

GENERAL

Annex 4A: REA General Checklist
Rapid Environmental Assessment (REA) Checklist

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 (SDES), for endorsement by Director, SDES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

Sector Division:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Legally protected Area (core zone or buffer zone)			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Special area for protecting biodiversity			
B. Potential Environmental Impacts **WILL THE PROJECT CAUSE…**			
▪ Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to physical cultural resources?			
▪ Disturbance to precious ecology (e.g. Sensitive or protected areas)?			
▪ Alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?			
▪ Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?			
▪ Increased air pollution due to project construction and operation?			
▪ Noise and vibration due to project construction or operation?			
▪ Involuntary resettlement of people? (physical displacement and/or economic displacement)			

Screening Questions	Yes	No	Remarks
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations?			
▪ Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?			
▪ Social conflicts if workers from other regions or countries are hired?			
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
▪ Generation of solid waste and/or hazardous waste?			
▪ Use of chemicals?			
▪ Generation of wastewater during construction or operation?			

A Checklist for Preliminary Climate Risk Screening (General)

Country/Project Title:
Sector:
Subsector:
Division/Department:

Screening Questions		Score	Remarks[21]
Location and Design of project	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?		
	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.)?		
Materials and Maintenance	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)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		
Performance of project outputs	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?		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High):_____
Other Comments: _____

Prepared by: _____

[21] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

FORESTRY

Annex 4B: REA Checklist for Forestry
Rapid Environmental Assessment (REA) Checklist

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 (SDES) for endorsement by Director, SDES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

Sector Division:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
B. Potential Environmental Impacts **WILL THE PROJECT CAUSE…**			
▪ Increase in soil erosion and siltation?			
▪ Increase in peak and flood flows?			
▪ Loss of downstream beneficial uses (water supply or fisheries)?			
▪ Impairment of ecological and recreational opportunities?			
▪ Impairment of beneficial uses of traditional forests?			
▪ Any loss of precious ecology?			
▪ Possible conflicts with established management policies?			
▪ Dislocation or involuntary resettlement of people?			

Screening Questions	Yes	No	Remarks
▪ Loss of downstream ecological and economic functions due to any construction of social infrastructure (e.g., road, training or information center, office or housing)?			
▪ Displacement of people or reduce their access to forest resources?			
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Uncontrolled in-migration, including the influx of workers and their followers, with opening of roads to forest area and overloading of social infrastructure?			
▪ Unnecessary loss of ecological value and decreased biodiversity by replacement of natural forest with plantation with limited number of species?			
▪ Technology or land use modification that may change present social and economic activities?			
▪ Ecological problems as well as community health and safety hazards due to land clearance prior to reforestation (e.g., soil erosion, disruption of hydrological cycle, loss of nutrients, decline in soil fertility)?			
▪ Other ecological problems as well as community health and safety hazards (e.g., pollution of water bodies from fertilizers, pesticides, and herbicides used in the plantation)?			
▪ Dangers to a safe and healthy working environment due to physical, chemical and biological hazards during project construction and operation?			
▪ Social problems and conflicts related to land tenure and resource use rights?			
▪ Social conflicts if workers from other regions or countries are hired?			
▪ Risks to community health and safety due to the transport, storage and/or disposal of materials such as explosives, fuel, pesticide and other chemicals during construction and operation?			

A Checklist for Preliminary Climate Risk Screening (Forestry)

Country/Project Title:
Sector :
Subsector:
Division/Department:

Screening Questions		Score	Remarks[22]
Location and Design of project	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?		
	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.)?		
Materials and Maintenance	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)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		
Performance of project outputs	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?		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High):_____
Other Comments: _____
Prepared by: _____

[22] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

AGRO-INDUSTRIAL

Annex 4C: REA Checklist for Agro Industrial
Rapid Environmental Assessment (REA) Checklist

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 (SDES) for endorsement by Director, SDES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

Sector Division:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Protected Are			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
▪ Bay			
B. Potential environmental impacts **Will the project cause…**			
▪ Ecological disturbances arising from the establishment of a plant or facility complex in or near sensitive habitats?			
▪ Eventual degradation of water bodies due to discharge of wastes and other effluents from plant or facility complex?			
▪ Serious contamination of soil and groundwater?			
▪ Aggravation of solid waste problems in the area?			
▪ Public health risks from discharge of wastes and poor air quality; noise and foul odor from plant emissions?			
▪ Short-term construction impacts (e.g. soil erosion, deterioration of water and air quality, noise and vibration from construction equipment?			
▪ Dislocation or involuntary resettlement of people?			

Screening Questions	Yes	No	Remarks
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Environmental degradation (e.g. erosion, soil and water contamination, loss of soil fertility, disruption of wildlife habitat) from intensification of agricultural land use to supply raw materials for plant operation; and modification of natural species diversity as a result of the transformation to monoculture practices?			
▪ Water pollution from discharge of liquid effluents?			
▪ Air pollution from all plant operations?			
▪ Gaseous and odor emissions to the atmosphere from processing operations?			
▪ Accidental release of potentially hazardous solvents, acidic and alkaline materials?			
▪ Uncontrolled in-migration with opening of roads to forest area and overloading of social infrastructure?			
▪ Occupational health hazards due to fugitive dust, materials handling, noise, or other process operations?			
▪ Disruption of transit patterns, creation of noise and congestion, and pedestrian hazards aggravated by heavy trucks?			
▪ Disease transmission from inadequate waste disposal?			
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, and biological hazards during project construction and operation?			
▪ Large population increase during project construction and operation that cause increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ Social conflicts if workers from other regions or countries are hired?			
▪ Community health and safety risks due to the transport, storage, and use and/or disposal of materials likely to create physical, chemical and biological hazards during construction, operation and decommissioning?			

A Checklist for Preliminary Climate Risk Screening (Agro-Industrial)

Country/Project Title:
Sector :
Subsector:
Division/Department:

Screening Questions		Score	Remarks[23]
Location and Design of project	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?		
	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.)?		
Materials and Maintenance	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)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		
Performance of project outputs	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?		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High):_____
Other Comments: _____

Prepared by: _____

[23] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

HYDROPOWER

Annex 4D: REA Checklist for Hydropower
Rapid Environmental Assessment (REA) Checklist

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 (SDES) for endorsement by Director, SDES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: _____

Sector Division: _____

A. Basic Project Design Data

1. Dam height, m =_____

2. Surface area of reservoir, (ha) =_____

3. Estimated number of people to be displaced =_____

4. Rated power output, (MW) =_____

Other Considerations:

1. Water storage type: ___ reservoir ___ run of river
   ___ pumped storage

2. River diversion scheme: ___ trans-basin diversion ___ in-stream flow regulation
   ___ in-stream diversion

3. Type of power demand to address: ___ peak load ___ base load

Screening Questions	Yes	No	Remarks
B. Project location Is the dam and/or project facilities adjacent to or within any of the following areas?			
▪ Unregulated river			
▪ Undammed river tributaries below the proposed dam			
▪ Unique or aesthetically valuable land or water form			
▪ Special area for protecting biodiversity			
▪ Protected area			
▪ Buffer zone of protected area			
▪ Primary forest			
▪ Range of endangered or threatened animals			
▪ Area used by indigenous peoples			
▪ Cultural heritage site			
▪ Wetland			
▪ Mangrove			
▪ Estuary			
C. Potential Environmental Impacts Will the Project cause…			
▪ Short-term construction impacts such as soil erosion, deterioration of water and air quality, noise and vibration from construction equipment?			
▪ Disturbance of large areas due to material quarrying?			
▪ Disposal of large quantities of construction spoils?			
▪ Clearing of large forested area for ancillary facilities and access road?			
▪ Impounding of a long river stretch?			
▪ Dryness (less than 50% of dry season mean flow) over a long downstream river stretch?			
▪ Construction of permanent access road near or through forests?			
▪ Creation of barriers for migratory land animals			
▪ Loss of precious ecological values due to flooding of agricultural/forest areas, and wild lands and wildlife habitat; destruction of fish spawning/breeding and nursery grounds?			
▪ Deterioration of downstream water quality due to anoxic water from the reservoir and sediments due to soil erosion?			
▪ Significant diversion of water from one basin to another?			
▪ Alternating dry and wet downstream conditions due to peaking operation of powerhouse?			
▪ Significant modification of annual flood cycle affecting downstream ecosystem, people's sustenance and livelihoods?			
▪ Loss or destruction of unique or aesthetically valuable land or water forms?			
▪ Proliferation of aquatic weeds in reservoir and downstream impairing dam discharge, irrigation systems, navigation and fisheries, and increasing water loss through transpiration?			
▪ Scouring of river bed below dam?			
▪ Downstream erosion of recipient River in trans-basin diversion?			

Screening Questions	Yes	No	Remarks
▪ Increased flooding risk of recipient river in trans-basin diversion?			
▪ Decreased groundwater recharge of downstream areas?			
▪ Draining of downstream wetlands and riparian areas?			
▪ Decline or change in fisheries below the dam due to reduced peak flows and floods, submersion of river stretches and resultant destruction of fish breeding and nursery grounds, and water quality changes?			
▪ Loss of migratory fish species due to barrier imposed by the dam?			
▪ Formation of sediment deposits at reservoir entrance, creating backwater effect and flooding and waterlogging upstream?			
▪ Significant disruption of river sediment transport downstream due to trapping in reservoir?			
▪ Environmental risk due to potential toxicity of sediments trapped behind the dams?			
▪ Increased saltwater intrusion in estuary and low lands due to reduced river flows?			
▪ Significant induced seismicity due to large reservoir size and potential environmental hazard from catastrophic failure of the dam?			
▪ Cumulative effects due to its role as part of a cascade of dams/ reservoirs?			
▪ Depletion of dissolved oxygen by large quantities of decaying plant material, fish mortality due to reduced dissolved oxygen content in water, algal blooms causing successive and temporary eutrophication, growth and proliferation of aquatic weeds?			
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ Creation of community slums following construction of the hydropower plant and its facilities?			
• Social conflicts if workers from other regions or countries are hired?			
▪ Uncontrolled human migration into the area, made possible by access roads and transmission lines?			
▪ Disproportionate impacts on the poor, women, children or other vulnerable groups?			
▪ Community health and safety risks due to the transport, storage, and use and/or disposal of materials likely to create physical, chemical and biological hazards?			
• Risks to community safety due to both accidental and natural hazards, especially where the structural elements or components of the project (e.g., dams) are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

A Checklist for Preliminary Climate Risk Screening (Hydropower)

Country/Project Title:
Sector :
Subsector:
Division/Department:

Screening Questions		Score	Remarks[24]
Location and Design of project	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?		
	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.)?		
Materials and Maintenance	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)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		
Performance of project outputs	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?		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High):_____
Other Comments: _____

Prepared by: _____

[24] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

FISHERIES

Annex 4E: REA Checklist for Fisheries
Rapid Environmental Assessment (REA) Checklist

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 (SDES) for endorsement by Director, SDES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

Sector Division:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
B. Potential Environmental Impacts Will the Project cause…			
▪ over exploitation of fish stocks and long-term degradation of resource base?			
▪ capture of non-target species and habitat damage through use of destructive fishing methods and gears?			
▪ accidental damage to coral reefs by divers and fishing vessel anchors?			
▪ pollution from oil and fuel spills and bilge flushing?			
▪ ecological degradation resulting from clearing for conversion of coastal wetlands to fishponds?			
▪ social problems arising from conflicts with other site uses?			
▪ downstream water pollution from discharge of pond effluents with drain water?			

Screening Questions	Yes	No	Remarks
▪ reduction of water supplies for competing uses (e.g., irrigation or domestic)?			
▪ restriction of water circulation, obstruction to navigation by fish pens/cages, and reduction of stream capacity from siltation?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ social problems due to land tenure and use conflicts?			
▪ soil erosion and siltation during construction?			
▪ noise and dust from construction?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, and biological hazards during project construction and operation?			
▪ reduction of water available to downstream users during peak seasons?			
▪ pollution of nearby aquatic environments by pond drainage water and inadequate farm management?			
▪ depletion of local fish populations by stocking of wild fry/fingerlings in ponds?			
▪ spread of diseases and parasites from exotic cultured species or escape of pond fish to the wild?			
▪ large population influx during project construction and operation that cause increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ increased community health risks due to the increased incidence or introduction of waterborne or water-related diseases?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials likely to create physical, chemical and biological hazards during construction and operation?			

A Checklist for Preliminary Climate Risk Screening (Fisheries)

Country/Project Title:
Sector :
Subsector:
Division/Department:

Screening Questions		Score	Remarks[25]
Location and Design of project	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?		
	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.)?		
Materials and Maintenance	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)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		
Performance of project outputs	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?		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High):_____
Other Comments: _____
Prepared by: _____

[25] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Annex 5: Subproject Environmental Categorization Form

ENVIRONMENTAL CATEGORIZATION

A. Instructions:

This form is to be completed by the Sector Division in the Operations Department and submitted to the Environment and Social Safeguard Division (SDES) for endorsement by SDES Director and for approval by the Chief Compliance Officer (CCO) of the Sustainable Development and Climate Change Department.

The environment categorization of a project is a continuing process. If there is a change in the components or/and site of a project that may result in category change, the Sector Division should submit a new environmental categorization form for endorsement by SDES Director and approval by the CCO. The old form should be attached for reference.

B. Project Data: Project No. _____

Country/Project Title: _____ Date: _____

Department/ Division: _____ Processing Stage:_____

Lending Modality: [ ] Project Loan [ ] Program Loan [ ] Financial Intermediation Loan or Equity Investment
[ ] Sector Loan [ ] SDP Loan [ ] JFPR

Coverage: [ ] Country [ ] Subregional [ ] Inter-regional

C. Environment Category: [ ] New [ ] Recategorization --- Previous Category B

- ☐ Category A
- ☐ Category B
- ☐ Category C
- ☐ Category FI

Additional information is needed for categorization and is to be gathered by the Mission Leader. In the interim, the project is classified as:

- ☐ Category A/B [ ] Environmental Specialist to participate in fact finding
- ☐ Category B/C

Comments: _____

_____

C. Documents attached: *The categorization will be considered incomplete if proper documentation is not attached.*

Basis for Categorization/ Recategorization:

[ ] REA Checklist
[ ] Project and/or Site Description (must be attached)
[ ] Other:_____

Terms of Reference for EIA/IEE:

[ ] Key issues identified and attached
[ ] Under preparation and will be submitted on _____ (date)

E. Basic Environmental Assessment Requirements

Please check one of category A, B, C or FI

[ ] Category A:
- ■ Environmental Impact Assessment (EIA)
- ■ Environmental Management Plan including a Budget
- ■ Public Consultation (at least twice)
- ■ Disclosure 120 days in advance of Board Consideration

[ ] Category B:
- ■ Initial Environmental Examination (IEE)
- ■ Public Consultation

[ ] ***Check if the project is to be deemed environmentally sensitive (by CCO***)
- ■ Environmental Management Plan including a Budget
- ■ Disclosure 120 days in advance of Board Consideration

[ ] Category C:
- ■ Review of Environmental Implications

[ ] Category FI:

☒ ***If Category FI, please check one of the following***

[ ] Equity Investment
- ■ Environmental Management System

[ ] Credit Lines
- ■ Environmental Management System - including Environmental Assessment and Review Procedures for Subprojects

[ ] Credit Lines where all subprojects will only have insignificant impacts
- ■ Review of Environmental Implications

For program, sector, or sector development program loans, please check the applicable requirements

Program and Sector Development Program Loans

[ ] ■ Environmental Assessment of Policy Matrix

Sector Loans

[ ] ■ IEEs of Sample Subprojects

[ ] ■ Environmental Assessment and Review Procedures

[ ] ■ Environmental Assessment of Sector Impacts (recommended)

F. Signatures

Category Assigned by:

_____
Mission Leader
Date: _____

Endorsed by:

_____
Director, SEER
Date: _____

Endorsed by:

_____
Director, SDES
Date: _____

Approved by:

_____
Chief Compliance Officer
Date: _____

Annex 6. Consolidated Table of Contents for the UKL or UPL or IEE

The environmental assessment studies should comply with ADB SPS 2009 and be consistent with the government environmental requirements. The team of consultants may include experts in biodiversity, sociology, community health, and environment, depending on location and/or type of subproject.

Table of Content

List of Tables (at least these 3):
Table 1: Environmental Impacts;
Table 2: Environmental Mitigation Plan;
Table 3: Environmental Monitoring Plan.

List of Figures (at least these 3):
Figure 1: Map of study location in context of surrounding area;
Figure 2: Map of Environmental Impacts;
Figure 3: Land to be acquired

A. Executive Summary. This section describes concisely the critical facts, significant findings, and recommended actions.

B. Introduction. This section will include the purpose of the report, extent of the UKL or UPL or IEE study, and brief description of any special techniques or methods used.

C. Policy, Legal and Administrative Framework. This section should discuss the national and local requirements and the institutional framework applicable to the subproject within which the environmental assessment is carried out. Describe the environmental requirements of the financing institution (ADB) and the applicable international environmental agreements to which Indonesia is a party. This section should also provide the applicable environmental standards to be complied with.

D. Description of the Project. This section will include a description of the proponent (name and address of the company / proponent). This section will include the type of and need for the project; and the name of the activity, the project location, scale of the activity, size or magnitude, operation, and proposed schedule for implementation. It will also highlight the amount of materials & water needed, and waste produced; and the amount of land acquisition and earthworks. It will provide Figure 3, land to be acquired, if relevant.

E. Description of the Environment. This section will include the physical and ecological resources, human and economic development, and quality of life values. This baseline can also describe to the extent that it is relevant to the subproject: biodiversity, climate change issues, indigenous peoples, and local health issues. This section will provide at minimum Figure 1 - a map of the study location in context of surrounding area.

F. Forecasting Environmental Impacts and Mitigation Measures (the Environmental Monitoring Plan). This section will identify "no significant impacts" from those with significant adverse impacts and will discuss the appropriate mitigation measures, where necessary. This section will also explain briefly and clearly:

(i) Activities which will become the source of impacts to the environment;
(ii) Type of environmental impacts which will occur;
(iii) Units to describe the scale of impacts;
(iv) Other issues to explain the environmental impacts that will occur; and
(v) Summarize impacts in the form of a table.

This section will include: Figure 2 (Map of Environmental Impacts); Table 1 **(**Environmental Impacts), and Table 2 (Environmental Mitigation) in a format acceptable to the local environment office.

G. Institutional Requirements and Environmental Monitoring Plan. 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 (i.e., the implementation arrangements). 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. It will address any capacity development requirements. This section will include monitoring indicators and the budget to implement monitoring. It will provide Table 3: Environmental Monitoring Plan in a format acceptable to the local environment office.

H. Public Consultation and Disclosure. This section will describe the process undertaken to involve the public in the subproject design and recommended measures for continuing public participation; summarize major comments received from beneficiaries, local officials, community leaders, non-governmental organizations (NGOs), and others, and describe how 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 a summary of information disclosed to date and procedures for future disclosure.

This section will highlight what permits will be needed for the subproject and when Government has/will be announcing the requests for and the issuance of environmental permits via it government web site or local newspaper.

This section will highlight that the UKL or UPL (in English and local language) will be publicly accessible through ADB and government websites.

I. Grievance Redress Mechanism (GRM). This section describes the grievance redress framework, setting out the time frame and mechanisms to resolve complaints about environmental performance.

J. Findings, Conclusions, and Recommendations. This section will include an evaluation of the screening process, and recommendation will be provided whether significant environmental impacts exists needing further detailed study or EIA. If there is no need for further study, the UKL or UPL or IEE is considered complete.

Appendixes: (at minimum):
Appendix 1: Map of environmental condition
Appendix 2: Design drawings
Appendix 3: Photos of study area and site
Appendix 4: Agreement Approval Letter from BLH or BLHD
Appendix 5: Statement of Assurance for UKL or UPL Implementation

Appendix 6: Proponent's Signature over Legal Stamp

Original Outline of Table of Contents for the UKL/UPL[26]

TABLE OF CONTENT

LIST OF TABLES (at least these 3): Table 1: Environmental Impacts; Table 2: Environmental Mitigation Plan; Table 3: Environmental Monitoring Plan.

LIST OF FIGURES (at least these 3):

Figure 1: Map of study location in context of surrounding area;
Figure 2: Map of Environmental Impacts;
Figure 3: Land to be acquired

LIST OF APPENDICES (at least 3):

Appendix 1: Map of environmental condition;
Appendix 2: Design drawings;
Appendix 3: Photos of study area and site.

AGREEMENT APPROVAL LETTER FROM BLH/BLHD

STATEMENT OF ASSURANCE FOR UKL/UPL IMPLEMENTATION

BODY OF THE REPORT

I. THE PROPONENT
   i. Name of the company;
   ii. Name of the proponent;
   iii. Address of the proponent.

II. PLAN OF ACTIVITY:
   i. Name of the activity;
   ii. Location of the activity;
   iii. The scale of activity;
   iv. Size of activity plan component.

III. ENVIRONMENTAL IMPACTS IDENTIFIED: Explain briefly and clearly:
   i. Activities which will become the source of impacts to the environment;
   ii. Type of environmental impacts which will occur;
   iii. Units to describe the scale of impacts; and
   iv. Other issues to explain the environmental impacts that will occur.
   v. Summary of impacts in the form of the following table:

SOURCE OF IMPACT	TYPE OF IMPACT	SCALE OF IMPACT	REMARKS
(List the activity which will cause impact to the environment)	(List the impacts that are likely to occur)	(List the units which can describe the scale of impacts)	(List other information to explain the environmental impacts which will occur)

IV. ENVIRONMENTAL MANAGEMENT AND MONITORING PROGRAM
V. SIGNATURE

APPENDIXES

[26] This Table of Contents is based on Permen LH No. 16/2012.

Original Outline of an IEE Report

A. Executive Summary: This section describes concisely the critical facts, significant findings, and recommended actions.

B. Introduction: This section will include the purpose of the report, extent of the IEE study and brief description of any special techniques or methods used.

C. Description of the Project: This section will include the type of and need for the project; and project location, size or magnitude, operation, and proposed schedule for implementation.

D. Description of the Environment: This section will include the physical and ecological resources, human and economic development, and quality of life values.

E. Forecasting Environmental Impacts and Mitigation Measures: This section will identify "no significant impacts" from those with significant adverse impacts and will discuss the appropriate mitigation measures, where necessary.

F. Institutional Requirements and Environmental Monitoring Plan: 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.

G. 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.

H. Grievance Redress Mechanism (GRM): This section describes the grievance redress framework, setting out the time frame and mechanisms to resolve complaints about environmental performance.

I. Findings, Conclusions, and Recommendations: This section will include an evaluation of the screening process, and recommendation will be provided whether significant environmental impacts exists 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 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. ADB's environment guidelines provide a guide for preparing the TOR for different projects. 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.

Annex 7: Terms of Reference for the Environmental Safeguards Specialist

The environmental safeguard specialist will have a master's degree or higher in the areas of environmental management/science, natural resource management, climate change, or a related area, and will have more than 5 years of experience in environmental assessment. He/she must have at least two years of experience in REDD+ environmental safeguards. Experience in preparing Initial Environmental Examinations and Environmental Monitoring Plans is required. The environmental assessment experience should cover some of the following sectors: forestry, agroforestry, climate change, fisheries, and infrastructure (e.g., roads, small-scale energy infrastructure, renewable energy, and small scale water systems). Experience with monitoring and project evaluation will be an advantage. S/he should be accredited by government as an environmental assessment consultant and should be fluent in English and Bahasa Indonesia. Familiarity with ADB environmental safeguards system is preferred.

Specific tasks include the following:

- Coordinate environmental safeguards related activities and ensure that EARF guidelines are applied in project activities;
- Prepare environmental management plans and review rapid environmental assessment (REA) of activities;
- Prepare initial environmental examinations (IEEs) for activities that are determined as category B for environment, as per ADB's SPS 2009;
- Provide technical guidance and strengthen capacity of staff at district and FMU levels in all aspects of environmental management;
- Consolidate progress and monitoring report on the environmental safeguards;
- Work closely with CSO working on environmental issues.
- Responsible to effectively and efficiently carry out the environmental management obligations of the project;
- Assist with screening and categorizing subprojects based on GOI regulation;
- Assist with screening subprojects based on ADB SPS 2009, completing or reviewing REA checklists, and categorizing subprojects based on ADB requirements;
- Guide preparation of UKL and UPLs and SPPLs of project activities and prepare strategy to effectively submit environmental assessment documents and environment permits (if necessary) to the concerned government offices and the ADB;
- Ensure that the UKLs or UPLs comply with government requirements, ADB's IEE requirements for category B projects, and the requirements of EARF;
- Develop or support the development of two high quality UKLs or UPLs and two SPPLs, to serve as good examples for the other subproject interventions/activities, and ensure that the first two UKLs or UPLs are translated into English for review by ADB;
- Prepare and fully translate for ADB review and approval the first UKL or UPL of subprojects with interventions that go beyond what was approved in the first two UKLs/UPLs;
- Ensure that all the other UKLs or UPLs have an adequate English executive summary to facilitate ad hoc reviews by ADB;
- Develop a strategy to effectively submit the environmental assessment documents to the concerned government staff and to obtain any necessary environmental permit;

- Develop a tracking system to ensure a good overview of the status / progress of all subprojects in terms of screening, category, completed reports, approval, implementation status, and monitoring efforts;
- Assist with supervising/ monitoring the implementation of all UKLs or UPLs;
- Report on the Project's environmental progress and environmental monitoring result in a timely manner;
- Provide technical guidance, capacity building, support, and advice to the PISU and local governments in all aspects of the project's environmental management;
- Review available background information regarding the project;
- Collect relevant additional information to keep up to date on any potential environmental issues relevant to the proposed interventions in each subproject area.

Annex 8: Environmental Screening and Categorization of Subprojects

I. SUBPROJECT INFORMATION		
Subproject Title:		
Location:		
Physical Target:		
General Specifications:		
II. PARAMETERS FOR RAPID ENVIRONMENTAL ASSESSMENT (REA) • *Bold font in italics were derived from ADB REA checklist* Answers for the question being asked may either be "Yes", "No", or "N/A". "N/A" means not applicable for the sub-project. Under the Remarks column, environmentally sensitive or critical area is specified, indicating if the subproject is only adjacent to, or if it is within the area.		
SCREENING QUESTIONS	**ANSWER (YES, NO, OR N/A)**	**REMARKS**
A. Sub-Project Siting		
Is the subproject area adjacent to or within any of the following environmentally sensitive areas (by ADB*) or critical areas?		
a. All areas declared by law as national parks, watershed reserves, wildlife preserves and sanctuaries. (*protected area, buffer zone of protected area, special area for protecting biodiversity*)*		
b. Areas set aside as aesthetic potential tourist spots; areas reserved by appropriate authorities for tourism development.		
c. Areas which constitute the habitat for endangered or threatened species of indigenous Indonesian Wildlife (flora and fauna).		
d. Areas of unique historic, archaeological, or scientific interests; includes national historical landmarks, geological monuments, and paleontological and anthropological reservations as may be designated or determined by relevant governmental institutions.		
e. Areas which are traditionally occupied by customary communities or tribes;		
• Ancestral lands of customary communities		
• All areas that are occupied or claimed as ancestral lands or ancestral domains by *Masyarakat hukum adat* (MHA) communities, or certified as such.		
f. Areas frequently visited and/or hard-hit by natural calamities (geologic hazards, floods, typhoons, volcanic activity, etc.);		
• Areas frequently visited or hard hit by earthquakes: all areas subjected to earthquakes of at least intensity VII in the Rossi-Forel scale during the period 1949 until the year of reckoning orl areas identified as such by the Indonesian relevant agency such as Meteorology and Geophysics Agency (*Badan Meteorologi dan Geofisika / BMG)*		
• Flood-prone areas: low-lying areas usually adjacent to large active water bodies experiencing regular or seasonal inundation as a result of changes in mean water level of these water bodies.		
• Areas prone to volcanic activities: all areas identified as such by the center for volcanology and geological hazard mitigation (*Pusat Vulkanologi dan Mitigasi Bencana Geologi*)		
• Areas located along fault lines or within fault zones: This refers to all areas identified as such by the center for volcanology and geological hazard mitigation		
• Drought-prone areas: all areas identified as such by the relevant Indonesian agency		
g. Areas with critical slopes; all lands with slope of 50% or more not classified in this listing as environmentally critical; also cover alienable and disposable forest lands and unclassified forests.		
h. Areas classified as prime agricultural lands; all irrigated and irrigable areas and other areas:		
i. Recharge areas of aquifers; sources of water replenishment where rainwater or seepage actually enters the aquifers: Areas under this classification shall be limited to all local or non-national watersheds and geothermal reservations.		

j. Water bodies characterized by one or any combination of the following conditions:		
1) Tapped for domestic purposes		
2) Within the controlled and/or protected areas declared by appropriate authorities		
3) Which support wildlife and fisher activities *(wetland, estuarine)**		
k. Mangrove areas characterized by one or any combination of the following conditions:		
1) with primary pristine and dense young growth;		
2) adjoining mouth of major river systems;		
3) near or adjacent to traditional productive fry or fishing grounds;		
4) which act as natural buffers against shore erosion, strong winds and storm floods;		
5) on which people are dependent for their livelihood.		
Areas declared as mangrove swamp forest reserves by the relevant Indonesian entity.		
Is the sub-project siting consistent with the protected area zoning?		
Is the sub-project siting consistent with land use zoning of the area?		
B. Potential Environmental Impacts: Will the project likely cause…		
Physical Environment		
Land		
1. Destabilization of slopes due to earthworks at the construction site?		
2. Erosion of river banks due to clearing/excavation operations?		
3. Soil erosion before compaction and lining of canals?		
4. Leaching of soil nutrients and changes in soil characteristics due to excessive application of irrigation water?		
5. Soil salinization due to insufficient drainage?		
Hydrology		
6. Redistribution of river flow or decrease in water flow rate downstream?		
7. Reduction of downstream water supply during peak seasons?		
8. Soil erosion and siltation leading to decreased stream capacity?		
9. Water logging along completed section of the irrigation canal as observed after heavy rains?		
10. Obstruction of water flow due to aggregation of garbage at check gates/control gates		
Water Quality		
11. Deterioration of surface water quality due to the following:		
a. Increased sediment run-off from the construction site?		
b. Improper disposal of sanitary and solid wastes from workers' base camps?		
c. Contamination from oil, grease and fuel spills?		
d. Excessive application of fertilizers and pesticides leading to discharge of agro-chemical contaminated waters from the service area?		
e. Salinization due to over pumping of groundwater, insufficient drainage?		
12. Will the project and/or its component infiltrate in community water source?		
Air Quality		
13. Deterioration of air quality due to the following impacts arising from heavy equipment operations and other construction works:		
a. Dust suspension?		
b. Obnoxious gas & particulate emissions?		
c. Noise generation?		
Biological Environment		
14. Tree cutting or vegetation clearing?		
15. Dislocation, disruption or other disturbance to terrestrial wildlife?		
16. Impediments to movements of animals?		
17. Loss of precious ecological values (e.g. result of encroachment into forests/swamplands or historical/cultural buildings/areas, disruption of hydrology of natural waterways, regional flooding, and drainage hazards)?		
18. Localized damage and/or disturbance to ecologically significant/economically important flora and fauna in forest areas/other critical habitats or agricultural crops?		

19. Smothering or other adverse effects on aquatic species?		
20. Will the project make use of non-native, invasive and/or alien species?		
21. Will the project involve harvesting of major and/or minor forest products?		
22. Will there be modification of habitats such as change of forest/ crop species?		
23. Is the project area vulnerable to wild fire?		
Social Environment		
24. Disfiguration of landscape in historical/cultural areas?		
25. Dislocation or involuntary resettlement of people along the right-of-way?		
26. Loss of private land rights/ownership/property of the right-of-way of the project?		
27. Encroachment of informal dwellers along the irrigation canals/dikes?		
28. Increase in cropping intensity or cropping area?		
29. Loss of income from crop damage along the right-of-way?		
30. Exposure of workers to emergency or hazards of flashfloods?		
31. Obstruction of public access through the construction area, delaying people movement and transport of farm products?		
32. Generation of solid waste and sanitary waste in construction camps and work sites?		
33. Increased health risk from the increase in the population of rodents, insects or other vectors of disease during construction?		
34. Increase in incidence of waterborne or water related diseases?		
35. Non-participation of customary communities in sub-project planning to implementation?		
36. Gender issues (non-participation of women and other marginalized sectors in sub-project planning to implementation)		

III. Key Issues Identified			
1.			
2.			
3.			
Per item 137 ADB EA Guidelines, 2003, <u>environmentally sensitive issues</u> include the following: Destructive to tropical forest, conversion of wetlands, potential adverse effects of protected areas, encroachment on lands or rights of IPs or other vulnerable minorities, involuntary resettlement, toxic waste disposal.			
IV. MOEF CATEGORIZATION (*check appropriate box to determine requirement)*			
Category A □	Category B □	Category C* □	Category D □
Remarks:			
V. RECOMMEDED ADB ENVIRONMENTALCATEGORY (*check appropriate box to determine requirement)*			
A □	B □	C □	see requirements below
Remarks: No environmentally sensitive issue apart from key issues raised during screening process. All key issues are mitigatable at the local community level and during sub-project design or thru the sub-projects operation and maintenance.			
BASIC ENVIRONMENTAL ASSESSMENT REUIREMENTS			
Category A • Environmental Impact Assessment (EIA) • Environmental Management Plan including a Budget • Public Consultation (at least twice) • Disclosure 120 days in advance of Board Consideration (ADB only)			
Category B • Initial Environmental Examination (IEE) [for ADB/DMC, or IEE or EIS (for DMC)] • Public Consultation (or if EIS for DMC) • *[ ] check if the project is to be deemed environmentally sensitive* • Environmental Management Plan including a Budget • Disclosure 120 days in advance of Board Consideration (ADB only)			
Category C (for ADB) or Category C/D (for DMC) • Review of Environmental Implications (Note: No requirement for DMC for Category D projects; Project Description and acquisition of Certificate of Non-Coverage for Category C projects)			

Table A-1: Subproject Limits to the project requiring AMDAL

Type of businesses/activities required to conduct an Environmental Impact Analysis (AMDAL)				
General activities which require AMDAL analysis	**Detailed criteria requiring AMDAL analysis**		**Potential project activities to assess***	**Location in Ministerial Regulation (MOE) No. 05/2012[27]**
Earth-moving activities	> 500.000 m3 of earth moved		Agroforestry	Page 2
Utilization of water from lakes, rivers, springs, or other surface water sources	> 250 l / sec		Fish cultivation, ecotourism, micro-hydropower	Page 2
Extraction of groundwater	≥ 50 liters / sec (from one or more wells in the region <10 ha)		fish cultivation, ecotourism, micro-hydropower	Page 2
Construction of buildings	Building size: >10.000 m2 or Land Area: > 5 ha		Ecotourism	Page 3
Development of plantation area (with or without processing unit)	Seasonal: > 2.000 ha Annually: > 3.000 ha		Agroforestry and rubber plantation	Page 5
Wood product utilization from natural forests	Any kind of activities		Handicraft	Page 7
Construction of dam / reservoir or other water bin type	> 15 m of height		Micro-hydropower, fish cultivation	Page 19
Construction of flood channels or river normalization	Large City / Metropolitan Area	> 5 km; or > 500.000 m3	Micro-hydropower	Page 21
	Medium-size City	> 10 km; or > 500.000 m3		
	Rural Area	> 15 km; or > 500.000 m3		
Construction of drainage channels in settlements (primary and / or secondary)	Large City / Metropolitan Area: ≥ 5 km Medium-sized City: ≥ 10 km		Ecotourism (construction of small facilities), agroforestry, plantation or nursery	page 25
Construction of water transmission network	≥ 10 km		Micro-hydropower, fish cultivation	Page 25
Development of power transmission networks	> 150 kV		Micro-hydropower, solar panels	Page 31
Construction of power plants	≥ 10 MW (at one location)		Micro-hydropower, solar panels	Page 32
Development of recreational parks	> 100 ha		Ecotourism	Page 34
Waste management of hazardous and toxic materials - biological waste treatment (composting, land farming)	Any kind of activities		Agroforestry, ecotourism	Page 41

*This project will not accept any activity that will require an AMDAL. The activities mentioned in this column should be assessed to ensure they do not require AMDAL according to the thresholds mentioned in this table.

[27] Regarding type of businesses/activities required to conduct an environmental impact analysis (AMDAL)