Initial Environmental Examination

Project Number: 38385-01
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INO: Rural Infrastructure Support to the PNPM Mandiri II Project

Prepared by the Ministry of Public Works

Asian Development Bank

INITIAL ENVIRONMENTAL EXAMINATION

I. INTRODUCTION

A. Background

1. The proposed Rural Infrastructure Support to PNPM Mandiri II (RIS-PNPM II) will support the implementation of the ongoing National Program for Community Empowerment (PNPM Mandiri). It is an initiative declared by the Government of Indonesia in 2006 and has been officially launched in 2007. The goals of the PNPM Mandiri program are to reduce poverty and accelerate the achievement of the millennium development goals (MDGs) targets by empowering the poor in rural and urban areas through the community driven development process. The PNPM Mandiri adopts a community-driven development approach, of which funds are directly channeled to community groups and community participants prioritize their development needs, control resources and implement rural infrastructure projects.

2. Built upon the experiences and incorporating lessons learned gained from the Rural Infrastructure Support Project (RISP), the Rural Infrastructure Support to PNPM Mandiri (RIS-PNPM), and other community-driven development projects, the proposed Project provides continuous support to the national PNPM Mandiri to reduce poverty and improve local level governance of rural communities in the project area through improved access to service delivery and basic rural infrastructure in the RIS-PNPM provinces in Sumatra Island. The Project will adopt a sector modality to identify and implement subprojects in about 1,341 rural villages and 215 kecamatans in Jambi, Lampung, Riau and South Sumatra provinces in Western Indonesia.

B. Scope of IEE

3. The Project is categorized as environmental category B. The initial environmental examination (IEE) for the project as a whole was prepared to show potential impacts associated with the small-scale rural infrastructure. Since locations and types of infrastructure interventions will be identified based on the village participatory planning process during implementation, the IEE has been prepared based on the (i) review of the selected rural infrastructure completed under RISP; (ii) review of the selected rural infrastructure completed under the World Bank's Third Kecamatan Development Project; (iii) site visit to selected villages in potential RIS-PNPM districts; (iv) discussion with provincial and district government officials from respective planning, public works and environmental agencies, and community implementation organizations (CIOs) and villagers; and (v) review of the relevant documents related to PNPM Mandiri Program, including the World Bank's evaluation report.

II. DESCRIPTION OF THE PROJECT

4. The Project will comprise three outputs: (i) strengthened capacity for community development, (ii) implementation of community development grants, and (ii) implementation support and project management. Table 1 summarizes the overall infrastructure interventions. Learning from the RISP, the infrastructure facilities improved and expanded under the RISP have been small. Most of the work was carried out by the communities themselves. The majority of infrastructure interventions were rehabilitation of existing roads. Types and scale of infrastructure interventions will be similar to those being implemented under RIS-PNPM and most of the interventions are likely to be rehabilitation or upgrade of existing roads. The IEE was carried out mainly for the second output while environmental consideration was incorporated in the first output.

Table 1: Summary of Rural Infrastructure Interventions

Output 1: Strengthened Capacity for Community Development	• Conduct awareness campaign to familiarize the community members with the PNPM Mandiri. • Conduct community facilitation that includes poverty mapping at the village level, identification of problems and needs, evaluation of community implementation capacity, and development of planning mechanisms and decision making process. • Assist in establishment and capacity building of community implementation organizations; and assist communities in formulation of village (Mid-Term Poverty Reduction) plans and related annual investment plans for funding by block grants. • Assist in further prioritization of village MTPR plans at the *Kecamatan* level; and provide technical guidance during the implementation of the activities identified in village MTPR plans. • Assist communities in formulation and implementation of operation and maintenance plans to ensure sustainability of completed facilities.	
Output 2: Implementation of Community Development Grants	Roads, Bridges and Pathways	• Rehabilitation or upgrade of rural roads (1.5km and 3m width in average, earth to gravel or gravel to asphalt and bridges). • New construction of footpath or pathways for pedestrians and motorcycles. • Rehabilitation or construction of drains along the existing roads.
	Water Supply and Sanitation	• Rehabilitation or upgrade of existing water supply systems. • Construction of new wells (mainly shallow wells). • Construction of toilets with septic tanks.
	Irrigation	• Rehabilitation or upgrade of existing village irrigation canals, embankment and or its retaining walls. • Construction of new village canals.
	Other	• Rehabilitation of village schools, health facilities, clinics and other village communal centers.

MTPR = mid-term poverty reduction.

III. DESCRIPTION OF THE ENVIRONMENT

A. Physical Resources and Ecological Resources

5. The Project covers the following four provinces: Jambi, Riau, South Sumatra and Lampung. The project areas have the tropical climate with rainy-season (October–April) and dry-season (May–September). The average temperature is 19°–30° C and the average annual rainfall is between 2,000–3,500 millimeters with the driest months in July and August. Musi River is the main stream of southern Sumatra, about 525 km. long and draining an area of 63,500 km^2. It rises near Gunung (mount) Kaba (1,937 m) in the Pegunungan (mountains) Barisan and flows first south-southeast, then northeast, breaking through the mountains in the upper Palembang district to enter the Tertiary hill zone at Tebingtinggi.

6. There are peat swamp and freshwater swamp forests. There are protected areas in the project area. On the western side, there are Kerumtan, Seberida, Bukit Besar reserves. On the western side, the Kerinci Seblat National Park, one of the biggest rainforest in the world, has a total area of 13,750 km^2 and is located in four provinces: Jambi, West Sumatra, Bengkulu and South Sumatra. The Bukit Barisan Selatan National Park has a total area of 3,568 km^2, and spans three provinces: Lumpung, Bengkulu and South Sumatra. Both national parks are home to diversity of flora and fauna. Commercial and illegal logging, as well as land conversion for the palm oil industry, have been damaging the forests.

7. The Riau province is rich with natural resources, particularly petroleum and natural gas, rubber, and palm oil. In Riau, there are four main rivers—Indragiri, Siak, Rokan and Kampar. According to the recent study conducted by Riau Environmental Impact Management Agency, the cadmium and zinc levels exceeded the maximum limits set by the government 2001 regulation. The pollution was mainly caused by illegal gold mining near several tributaries in Logas district. Under the Mandiri PNPM, water quality testing is required to ensure that water source quality meets the drinking water standard. To avoid contamination of drinking water, 10 meter distance between the drinking water source and septic tank are included as part of the eligibility criteria.

B. Socioeconomic Conditions

8. There are two ethnic groups: Javanese and Malay. The selected four provinces are located in the southern half of Sumatra Island, where the incidence of rural poverty is higher than national average. In South Sumatera, the villagers are mostly farmers and laborers employed in rubber and palm oil plantations, paddy fields, farm lands, fishponds and fishing activities. Education infrastructure in South Sumatera is inadequate and schools are only available up to the elementary level. Health facilities are inadequate in South Sumatera. Most villages are served only by small health clinics providing only basic medical care. Patients requiring further medical treatment must be referred or transferred to sub-district or district level hospitals. Lack of adequate infrastructure hampers social services and economic opportunities.

IV. SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

9. Due to a small scale of expected civil works, most of the environmental impacts are short-term and temporary, and easily mitigated to acceptable levels. The following section summarizes the overall impacts associated with design and sites, construction and operation while Attachment 1 presents in detail potential impacts, mitigation measures and monitoring responsibilities.

A. Location and Design Impacts

10. Most of rehabilitation and upgrade work for roads will be within the existing Right of Way (ROW). Construction materials will be procured locally. Close coordination with the local government units in charge of environment will be sought to monitor any illegal excavation activities in the river or embankment areas. To avoid any potential encroachment to the protected and conservation areas, environmental screening criteria will exclude any of the infrastructure interventions within or adjacent to or leading to such environmentally sensitive areas.

11. To avoid any potential contamination of drinking water sources a site for a drinking water supply system will keep at least 10 meters distance to septic tanks and leach fields. Prior to construction of the well or pipe water supply system, water quality sampling will be conducted to test the quality at the lab in the local department of health and ensure that the groundwater or surface drinking water will meet the drinking water quality standards. For a deep well, a permit will be obtained from the local department of environment prior to construction. District engineers will provide technical inputs to ensure adequate water distribution from the secondary to tertiary canals and avoid any downstream impacts due to reduced flow and increased pollution level.

B. Construction Impacts

12. Due to a small scale civil work, most of the impacts are short-term and temporary, and easily mitigated to acceptable levels. The project activities will be undertaken by communities, largely through manual labor and using locally available and environmentally safe materials. Negative environmental impacts include increased dust, noise, traffic, wastes and soil erosion. Such impacts are short-term and temporary, and the mitigation measures specified in the existing guidelines for construction can minimize the impacts. Construction activities will be avoided during the rainy season as much as possible.

13. The independent evaluation report on the quality of infrastructure [1] indicated no meaningful negative effects during and after the completion of the infrastructure construction. The field review conducted for the selected completed infrastructure under RISP also has not identified any negative or recurrent environmental impacts. It recognized positive environmental improvements as a result of the improved community infrastructure. A close monitoring of construction activities and inspection of the completed infrastructure will be conducted by the community members in collaboration with district consultants and government staff.

C. Operation Impacts

14. Communities are responsible for properly maintaining improved infrastructure facilities. Development of an O&M plan is one of the eligibility requirements for each village. During the field review, it was noted that the villages have been financing O&M costs by collecting money from the village members for a repair or charging a toll fee to a small truck by installing gate. O&M activities will be fully implemented and partly financed by the communities. District governments also monitor surface and groundwater quality through their on-going monitoring programs.

V. INSTITUTIONAL REQUIREMENTS AND ENVIRONMENTAL MONITORING PLAN

A. Environmental Assessment Regulations

15. Indonesia has its own environmental impact assessment (EIA) system for development projects—*Analisa Mengenai Dampak Lingkungan* (AMDAL), which describes coverage of facilities and activities under the Government's environmental impact assessment system and the procedural steps and compliance requirements. The relevant environmental assessment regulations include

- Environmental Management Law (Law No. 23/1997)
- Government Regulation No.27/1999 requires actions to implement EIA
- Minister of Environment Decree No.8/2006 (EIA procedures)
- Minister of Environment Decree No.11/2006 (list of projects requiring EIA)
- Minister of Environment Decree No.40/2000 (EIA approval authority)
- Head of Environment Agency (*Badan Pengendalian Dampak Lingkungan,* BAPEDAL) Order No.8/2000 (public involvements and information disclosures)

16. The Ministry of Environment is responsible for the EIA. Under the AMDAL system, each

[1] The World Bank conducted an independent evaluation on its Kecamatan Development Program (KDPs) in Indonesia, the major predecessor of PNPM Mandiri.

individual scheme must be screened for coverage and compliance. An investment project is categorized into one of three types: (i) project requiring an EIA Report (*Analisis Dampak Lingkungan* [ANDAL]); (ii) project requiring Environmental Management Effort (*Upaya Pengelolaan Lingkungan* [UKL]) and Environmental Monitoring Effort (*Upaya Pemantauan Lingkungan* [UPL]); and (iii) projects that do not require ANDAL or UKL/UPL. The Decree No. 11/2006 lists types of investment activities (sector specific thresholds) which require a preparation of EIA. Investment activities below the thresholds will be assessed by responsible district governments in charge of environment to determine an appropriate environmental category. Attachment 2 shows the environmental screening process.

17. The Decree No.11/2006 lists an extensive list of screening and sector-specific criteria for investment projects requiring EIA. The main gap between the AMDAL system and ADB's environmental assessment requirements is in two areas: (i) the format of ANDAL (EIA) does not include analysis of alternatives; and (ii) public consultation is not included in the formats for ANDAL and UKL/UPL. Implementation capacity of AMDAL system at the local level varies. The World Bank has been providing support to *AMDAL Revitalization* through policy-oriented research focusing on adapting existing environmental regulatory regimes to the changed circumstances of decentralization.

18. In accordance with the AMDAL system, none of the individual infrastructure interventions implemented so far under the RISP, RIS-PNPM or PNPM Mandiri have required UKL/UPL (equivalent to ADB's IEE) because (i) village infrastructure interventions are small scale, and (ii) screening criteria exclude any infrastructure interventions located within or next to the environmentally sensitive areas. Since the proposed Project will support the implementation of the ongoing PNPM Mandiri, any of the small scale infrastructure interventions are not likely to require a preparation of UKL/UPL.

19. Environmental safeguard measures were taken into considerations in the existing PNPM guidelines as part of the harmonized approaches among donors to support the PNPM Mandiri in order to comply with their respective safeguard policies. The restriction list developed under the PNPM Mandiri covers environmentally sensitive locations and restricted activities that are not eligible for funding (Attachment 3). Under the national program, several implementation guidelines such as management of complaints and problems, community construction, village operation manuals, and technical guidelines have been developed. The environmental screening checklists adopted under RIS-PNPM will be used in RIS-PNPM II.

B. Environmental Responsibility

20. Since the Project will be implemented as part of PNPM Mandiri, it will use the existing implementation mechanisms that are in place for that program. The Ministry of Public Works through the Directorate General of Human Settlements (DGHS) will be the executing agency (EA) for the Project. The EA will establish a project coordination and monitoring unit (PCMU) at the national level. The PCMU will be responsible for the management, coordination, and monitoring of project activities. The Project will utilize the existing provincial project implementation units (PPIUs) established at the national, provincial, and district levels under the respective PNPM Mandiri coordination teams. Each participating village will establish a CIO which will have a legal status. Each CIO will create or utilize its existing organization structure and assign staff to manage project including environmental aspects. A team of five community facilitators (two social development, two technical, and one management) will be assisting about seven villages. District government units for public works, environment and health also have

responsibility to ensure that any infrastructure investments proposed by CIOs will comply with relevant national and provincial regulations.

21. Each participating CIO will identify development needs and will present as part of the village MTPR plan to the kecamatan forums, where development needs will be prioritized by the representatives of all villages based on the kecamatan development priorities (e.g., development of inter-village roads and water supply schemes), efficiency considerations and eligibility criteria. A team of five community facilitators will play a key role in assisting each CIO in ensuring that environmental considerations are incorporated in the identification and implementation of development needs. Table 2 shows specific environmental responsibilities.

Table 2: Main Environmental Responsibilities

Institutions		**Responsibilities**
National	Ministry of Public Works (Executing Agency)	• Overall coordination, supervision, monitoring. • Preparation and submission of consolidated quarterly progress reports and evaluation reports.
Provincial	Public Works	• Steering committee member responsible for coordination and oversight of districts activities including environmental safeguard.
	Environment	• Steering committee member responsible for overall coordination and oversight of districts activities to ensure that overall environmental management are taken into consideration.
District	Public Works (PIUs)	• Provide overall coordination, supervision, monitoring and approval of village proposals including environmental checklists. • Prepare quarter progress reports including environmental. • Provide technical support to commune facilitators and CIOs.
	Environmental	• Provide guidance on environmental checklists. • Coordinate with community facilitators to conduct site visits, if necessary, to validate the screening/assessment results. • Review the engineering design and environmental checklists and provide permit for construction of a deep well. • Conduct random checking during construction and after completion to inspect environmental procedures and impacts.
	Health	• Test collected water quality samples to determine if collected water sources meet the drinking water standards.
Village	Community Implementation Organization (CIO)	• Responsible for establishing implementation units within a CIO. • Responsible for conducting environmental checklists assisted by community facilitators and developing operation and maintenance. • Responsible for monitoring construction activities and conducting inspection for completed interventions. • Disclose on the village board village proposals and contracts including environmental checklists. • Responsible for taking any negative feedback related site, construction and operation from other village members and organizing meetings to solve problems with assistance by facilitators. • Responsible for reporting environmental monitoring to provincial implementation units.

C. Capacity Building

22. Community facilitators will receive a technical training prior to project implementation in order to provide appropriate awareness and technical training to each CIO. Environmental awareness training will be provided to community facilitators. Environmental training will include the overall national environmental assessment regulations, ADB's safeguard requirements, and environmental assessment process by using the developed checklists. Domestic environmental consultants to be recruited at the provincial and district levels will assess the specific training

needs in their respective participating districts and develop more detailed environmental training programs that will be conducted for the district and kecamatan governments and CIOs.

E. Environmental Monitoring and Reporting

23. As Table 1 of the Attachment 1 shows, each participating CIO is responsible for monitoring the construction activities and inspecting the completed infrastructure. The monitoring and supervision unit will be established within each CIO. Community facilitators will assist CIOs to develop detail day-to-day monitoring and supervision schedules. All complaints received by the CIOs will be documented in the log books in accordance with the Implementation Guidance: Management of Complaints and Problems that was developed under the national program. Community facilitators will assist CIOs in solving problems through community forums or reporting to the district or provincial governments if formal legal process is required.

24. The Project will be part of the overall monitoring and evaluation (M&E) framework for the PNPM Mandiri, for which the performance indicators and targets have already been established. Indicators to assess and monitoring social, environmental and economic impacts are also included in the M&E framework. Environmental questions are embedded in the overall project evaluation questions. Such questions include (i) adequate attention and procedures paid to social and environmental conservation, (ii) infrastructure maintained on a regular basis, (iii) percentage of declining environmental problems in the implemented areas, and (iv) percentage of fund allocation to natural conservation. The community facilitators will use the results of the baseline surveys that were carried out for PNPM Mandiri in 2007–2008. M&E findings will be incorporated in the quarterly project progress report to be prepared by the PCMU and submitted to Asian Development Bank (ADB) and the PNPM Mandiri Oversight Body.

F. Environmental Management Budget

25. Overall environmental mitigation measures including drinking water sources sampling are included in the project design costs. The consulting services will be provided at the national, provincial, and district levels. At the national level, a team of consultants will assist the PCMU. A safeguards specialist (12 person-months) to be recruited at PCMC will be responsible for assisting PCMC in incorporating environmental monitoring in the quarterly progress reports and environmental survey results in the M&E framework.

26. There will be three regional teams with the following provincial coverage: (i) Lampung, (ii) South Sumatra, and (iii) Jambi and Riau. Each regional team will consist of five provincial level experts: (i) the project manager, (ii) financial management specialist, (iii) social development/social safeguards expert, (iv) rural infrastructure specialist and (v) safeguard specialist. The safeguards specialist (12 person-months) to be recruited at each of the three regional teams is responsible for assisting district safeguards specialists and coordinating with the provincial government in charge of environment.

27. Each regional team will also have 3–4 district level teams with similar composition as a provincial level team, with each district team covering about four districts. A safeguards specialist will be recruited at each of the three district teams is responsible for assisting community facilitators and district government to ensure environmental safeguard in the village planning and implementation of infrastructure proposals.

VI. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

28. Public consultation was conducted in potential districts of RIS-PNPM in February and May 2008 during a visit to Garut district in the West Java Province, Madiun district in the East Java Province, and Sukoharjo and Klaten districts in the Central Java Province. The main purposes were to (i) meet Bappeda officials, CIOs, and villagers; (ii) review the completed community infrastructure implemented under the RISP to learn from their experiences including environmental screening and management during the preparation and implementation; and (iii) visit the villages likely to be included under the proposed Project to review the sites and assess general infrastructure needs.

29. In general, the district officials and the CIOs members appreciated the improved rural infrastructure and supported the RIS-PNPM and the PNPM Mandiri. Main environmental concerns were potential contamination of drinking water sources and soil erosion due to construction activities during the rainy season. The communities also shared that short preparation period (about 5 months) to identify, select and implement infrastructure interventions was not adequate to discuss among communities the design and alternatives, and develop proposals.

30. Taking account of the lessons learned from the RISP and RIS-PNPM, a community preparation period is extended to 6 months. To avoid potential contamination of raw water, siting requirements for water supply system and sanitation facilities, and drinking water quality testing requirements are included as part of the environmental screening requirements. Construction during the rainy season will be avoided as much as possible.

31. As indicated in the stages of implementation activities in the Attachment 4, public consultation is an integral part of the village identification, planning and implementation process. Continuous dialogue will be carried out during the implementation. The procedures for management of complaints and problems for the PNPM Mandiri have been implemented under the national program. The guidelines specify the organizational structure and institutional responsibilities, specific steps for filing complaints, organizing community forums to discuss complaints, taking legal actions if necessary, and reporting to the relevant district and provincial government. Strict enforcement of the guidelines will be sought to ensure that any concerns and problems raised will be solved in an open and transparent manner.

VII. ENVIRONMENTAL ASSESSMENT AND REVIEW FRAMEWORK

32. The environmental assessment and review framework (EARF) has been prepared to guide the implementation process of screening rural infrastructure interventions, setting up institutional arrangements in relation to environmental management and monitoring, and carrying out environmental assessment to comply with the applicable laws and regulations of the Government and with ADB's environment policy and *Environmental Assessment Guidelines*. While expected village infrastructure interventions are likely to be environmental category C, if the district department staff in charge of environment determines need for a preparation of UKL/UPL for a particular infrastructure intervention, domestic consultants to be recruited at the district level will work closely with a CIO and district engineers to prepare UKL/UPL. A draft UKL/UPL (English version) will be sent to ADB for its review and endorsement. The terms of references for domestic consultants will include a requirement of UKL/UPL preparation.

VIII. FINDINGS AND CONCLUSIONS

33. The Project will have significant positive impacts on the quality of life and environment for the project communities. Potential negative impacts associated with the design, construction and operation of the proposed subproject activities will be temporary, minor, and localized in extent and can be mitigated to acceptable levels. The EARF will provide adequate guidance to screen subprojects, determine the appropriate mitigation measures for any identified negative environmental impacts, and implement environmental management and monitoring during project implementation. It is determined that a detailed EIA for any of village infrastructure proposals is not warranted.

Potential Impacts, Mitigation Measures and Monitoring

Potential Impacts	Proposed Mitigation Measure	Responsible Entity	Monitorable Output	Funding Source
Location and Design				
All Interventions				
Resettlement • No land acquisition or relocation of houses since rehabilitation will be within the right of way.	• The provision of small amounts of land for any new infrastructure will be based mainly on voluntary rather than involuntary basis. • At the design stage, scope of damage and compensation will be assessed and compensation mechanisms will be decided through community discussion	District consultants, Community facilitators	Resettlement Plans	Project costs or counterpart funds
Environmental sensitive areas • No subprojects are located within or adjacent to the sensitive areas as described in the environmental criteria for sub-project selection described in this document.	• Environmental screening criteria included in the environmental assessment and review framework will eliminate any village infrastructure located in environmentally sensitive areas.	Community facilitators, CIOs	Environmental assessment checklists	Project costs
Road and Bridges				
Soil erosion • Rehabilitation could cause soil erosion	• All road cuttings and embankment fills will incorporate soil and slope stabilization measures, vegetation on the shoulders and adequate drainage provisions; construction and major earthworks during the rainy season will be avoided.	CIO, Community facilitators	Approved design of road works in vulnerable areas	Measures will be included as project-financed civil works
Construction Materials • Excavation cause erosion and siltation in streams mined for gravel; damage aquatic ecosystems	• Construction materials will be procured from local shops (as in the case of RISP). • Permission from the district government (environment) is required to excavate sand from streams.	CIO, Community facilitators, District government (environment)	Approved drawings and budget	Project costs

Potential Impacts	Proposed Mitigation Measure	Responsible Entity	Monitorable Output	Funding Source
Irrigation				
Water availability and quality • Conflict in water supply rights is not likely since rehabilitation of irrigation interventions will be a small percentage of the total investment (most of the village block grant will be used for rehabilitation of roads). • Significant increase in the use of agriculture chemicals is not expected.	• District engineers will assess the overall irrigation water distribution. • Community awareness building will include appropriate use of chemicals.	District public works, Community facilitators	Village proposals	Project costs
Water Supply and Sanitation				
Water source quality • Contamination of drinking water sources due to inadequate or inappropriate siting	• Screen area for flood free • Conduct aquifer quality sampling prior to commencement of drilling • For a deep well, obtain permit from district government (environment) prior to commencement of drilling • Locate sanitation facilities with adequate distance (at least 10 m.) to wells	CIO, Community facilitators, District government (health), District government (environment)	Approved drawings, Environmental screening checklist, Permit from district government	Project costs
During Construction (all interventions)				
Dust and noise • Temporary dust and noise hazards	• Existing guidelines for construction have specification to (i) regularly water down road surfaces and provide covers to trucks and on loose materials, (ii) reinstate vegetative cover on all bare surfaces upon completion, (iii) maintain construction equipment in good condition, and (iv) limit night time work.	CIO, Community facilitators, District consultants	Quarterly project progress reports by PCMU, Reports of ADB review missions	Project costs

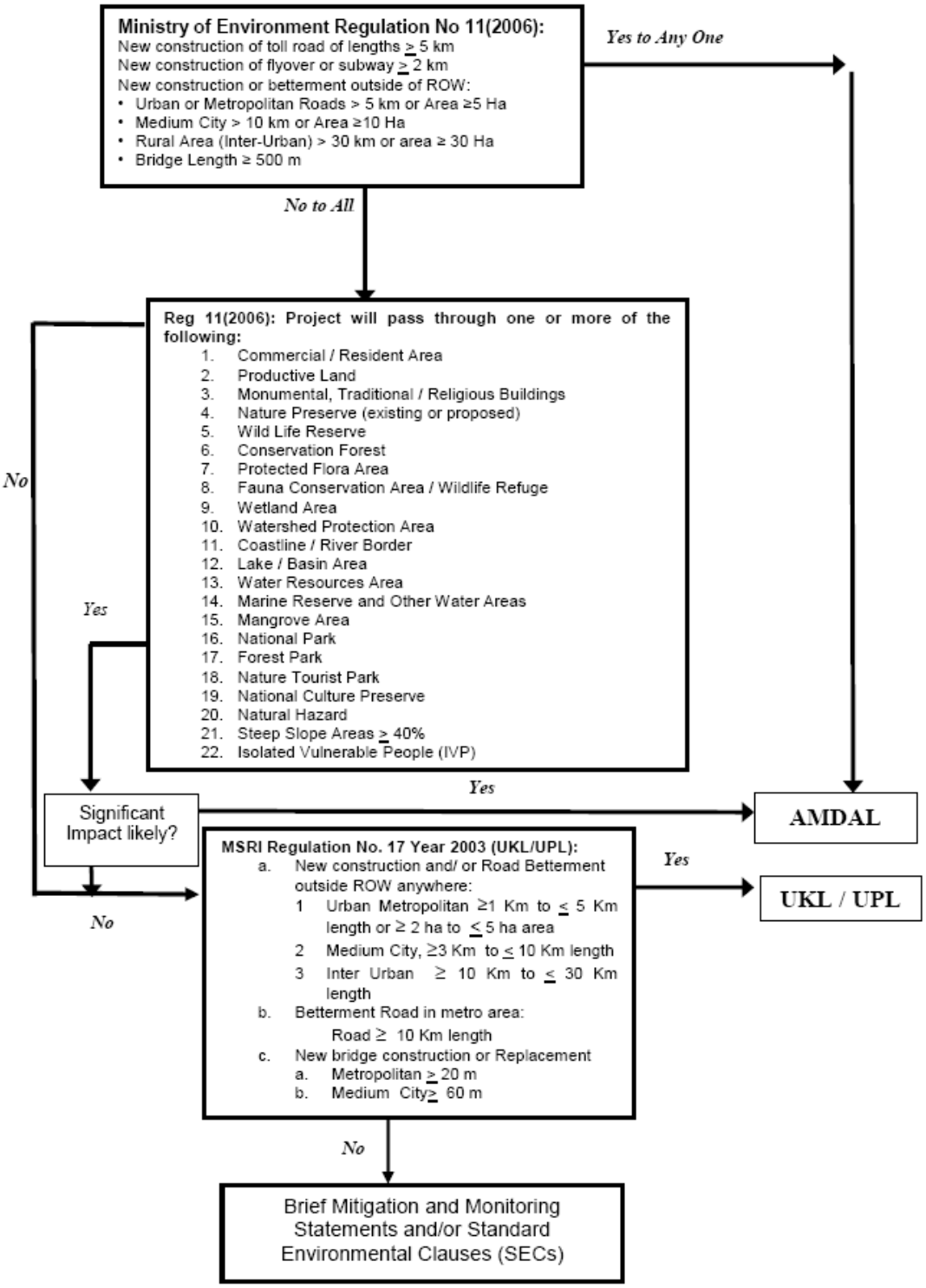
Potential Impacts	Proposed Mitigation Measure	Responsible Entity	Monitorable Output	Funding Source
Soil and Land • Damage to agricultural land, river banks, public spaces, and other nearby areas by disposal of excavated spoil, liquid and solid wastes.	• Existing guidelines for construction have mitigation measures such as (i) compacting and protecting exposed soil, (ii) replanting areas where the vegetation has been damaged, (iii) disposal of excess earthfill material in designated areas, and (iv) appropriately collecting and disposing of solid and liquid wastes.	CIO, Community facilitators, District consultants	Quarterly project progress reports by PCMU, Reports of ADB review missions	Project costs
Surface and groundwater • Water contamination due to excavation, disposal of wastes	• Existing guidelines for construction have mitigation measures such as (i) obtaining approval from responsible authority for removal of any sand, gravel, and rock materials from river beds; (ii) disposal of solid and liquid wastes; and (iii) provision of proper sanitation in work camps, ensuring that no untreated effluents reach surface or groundwater.	CIO, Community facilitators, District consultants	Quarterly project progress reports by PCMU, Reports of ADB review missions	Project costs
Health and safety • Safety hazard to workers, locals and traffic	• Existing guidelines for construction have specification to (i) install barrier fencing around construction site, (ii) control access of unauthorized persons to site, and (iii) provide fist aide and safety training to workers and drivers.	CIOs, Community facilitators, District consultants	Quarterly project progress reports by PCMU, Reports of ADB review missions	Project costs
During Operation				
Road				
Air quality and noise • Increase dust, emission, and noise due to increased volume of traffic as a result of improved road condition	• No specific measures are proposed because the increase in emission, dust, and noise is not expected to be significant.	N/A	N/A	N/A

Potential Impacts	Proposed Mitigation Measure	Responsible Entity	Monitorable Output	Funding Source
Water Supply				
Drinking Water contamination • Contamination of drinking water due to in adequate maintenance and	• Conduct inspection and water quality monitoring • Inspect periodically to assure drainage conditions around water point do not cause sanitary problem	CIOs, Department of Health	Monitoring reports	On-going monitoring programs

ADB = Asian Development Bank, CIO = community implementation organization, RISP = Rural Infrastructure Support Project, PCMU = project coordination and monitoring unit.

Attachment 2

Indonesia's Environmental Screening Process



Attachment 3

Environmental Screening List

The list consists of the following environmentally sensitive areas, harmful procurement and destructive activities:

(i) Avoid following sensitive areas:
- national park, forest park, wildlife reserve, protected flora area, conservation forest, and watershed protection forest.
- national cultural preserve, traditional/religious buildings.
- marine reserves, coastline and dune systems, and mangrove and wetland areas.

(ii) Prohibit the following procurement:
- procurement of any products containing asbestos.
- procurement of pesticides or herbicides.

(iii) Prohibit the following activities:
- mining or excavation of live coral.
- construction of a road leading to protected forests.
- production, processing, handling, storage or sale of tobacco or products containing tobacco.
- water resources developments on rivers which flow into or out of other countries.
- alterations to river courses.
- land reclamation larger than 50 ha.
- new irrigation larger than 50 ha.
- construction of water retaining or storage structures of capacity greater than 10,000 cubic meters.

In addition to the above list, the following additional requirements for water supply and sanitation interventions need to be met:

(i) Potable water supply from proposed sites must be free from any contamination and certified safe by the district health officer though the conduct of water sample analysis; and

(ii) Leaching fields from latrines has to be located at least ten meters from any water supply system.