

**INTEGRATED SAFEGUARDS DATA SHEET
APPRAISAL STAGE**

Report No.: ISDSA11058

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I. BASIC INFORMATION

1. Basic Project Data

Country:	Myanmar	Project ID:	P146482
Project Name:	Ayeyarwady Integrated River Basin Management Project (P146482)		
Task Team Leader:	Greg J. Browder		
Estimated Appraisal Date:	15-Oct-2014	Estimated Board Date:	11-Dec-2014
Managing Unit:	GWADR	Lending Instrument:	Investment Project Financing
Sector(s):	General water, sanitation and flood protection sector (40%), Flood protection (25%), Ports, waterways and shipping (25%), Public adm inistration- Water, sanitation and flood protection (10%)		
Theme(s):	Water resource management (60%), Natural disaster management (20%), Environmental policies and institutions (20%)		
Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)?			No
Financing (In USD Million)			
Total Project Cost:	100.00	Total Bank Financing:	100.00
Financing Gap:	0.00		
Financing Source			Amount
BORROWER/RECIPIENT			0.00
International Development Association (IDA)			100.00
Total			100.00
Environmental Category:	A - Full Assessment		
Is this a Repeater project?	No		

2. Project Development Objective(s)

The program development objective for the Series of Projects (of which the AIRBM will be the first) is to strengthen integrated, climate resilient management and development of the Ayeyarwady River Basin and national water resources.

The project development objective of the AIRBM is to contribute to the development of integrated river basin management on the Ayeyarwady river.

3. Project Description

A multi-phased approach (Series of Projects) is proposed that will focus, in the first phase, on developing the institutions and tools needed to enable informed decision making in the management of Myanmar's national water resources and to implement integrated river basin management on the Ayeyarwady, while immediately enhancing the river's productivity with "low/no/low regrets" investments in the hydro-meteorological observation system and services (to support agricultural productivity and water-related disaster risk management) and in navigation enhancements (to promote sustainable transportation) on the Ayeyarwady. The project would also support a prompt and effective response to potential crises and emergencies.

The project design includes three inter-related investment components plus a contingency component to allow for rapid reallocation of funds if emergencies arise.

Component 1: Water Resource Management Institutions, Information & Capacity Building (USD 32 million)

1.1 Institutional Development (USD 10.5 million): This sub-component will support (a) design and construction of a new NWRC Secretariat and HIC headquarters facility in Mandalay, immediate refurbishment of associated office space in Yangon and Nay Pyi Taw, and provision of office furnishings and equipment; (b) development of the NWRC institutions, mandates, business plans, staffing strategies and operational procedures, as well as institutional, legal and regulatory reviews and reforms relating to water resources management, and (c) capacity building, including possible twinning arrangements.

1.2 Ayeyarwady River Basin Master Plan and Decision Support System (DSS) (USD 10 million): This sub-component will provide immediate guidance on investment options while also developing the tools and processes needed to ensure the government has ongoing capacity to plan and manage its national water resources. A phased approach will be taken to plan integrated development of the Ayeyarwady River, based on sufficient understanding of opportunities and risks and guided by agreed Basin Development Objectives. Activities will include (a) development of the Ayeyarwady Integrated River Basin Master Plan, the development of a DSS that will become the primary knowledge asset of the HIC, and stakeholder consultations to identify Basin Development Objectives, (b) implementation of groundwater and sediment surveys, and (c) implementation of a Basin-wide Strategic Environmental and Social Assessment (SESA).

1.3 Preparation of Future Investments (USD 7 million): This sub-component will support preparation activities for priority investments that may be financed under future phases of this Series of Projects. It will finance feasibility studies, procurement and safeguards related activities, workshops and study tours and other activities as agreed between the WBG and GoM. It will not finance detailed design work. This financing will create an incentive to develop projects within the NWRC framework – to identify, and prepare projects to international quality standards, within an integrated basin framework and in accordance with basin wide development objectives. To be eligible for PFI funding, a project must be consistent with the Ayeyarwady Basin Master Plan (Sub-component 1.2a) and with the Bank's engagement objectives in Myanmar.

1.4 Implementation Support (USD 4.5 million): This sub-component will provide funds for (a) consultant and advisory services for the Project Management Unit (PMU) including for financial management, procurement, safeguards and monitoring and evaluation, (b) incremental operating costs, and (c) project-related communications and outreach as well as the creation of a Stakeholder Forum that will be an important mechanism for consultation during the implementation of this Project and sustained thereafter as a platform for stakeholder engagement with the NWRC.

Component 2: Hydromet Observation and Information Systems Modernization (USD 30.15 million)

2.1 Institutional and Regulatory Strengthening, Capacity Building and Implementation Support (USD 6 million): This sub-component will support (a) institutional strengthening including the development of a robust legal and regulatory framework, (b) capacity building and training for staff, and (c) technical assistance in systems design, integration and operations as well as Component 2 management and monitoring.

2.2 Modernization of Observation Infrastructure, Data Management Systems and Forecasting (USD 17.1 million): This sub-component will support (a) technical upgrading of the hydro-meteorological observation network, (b) modernization of operations centers, data management and communications/IT systems, engineering and calibration facilities, (c) improvements in numerical weather prediction systems and associated hydrological modeling systems, and (d) reconstruction and refurbishment of offices and facilities.

2.3 Enhancement of Hydromet Service Delivery Systems (USD 7.05 million): This sub-component will support the strengthening and delivery of hydromet information services in order to ensure project benefits are realized across the range of stakeholders. This will likely include (a) creation of a Service Delivery Platform for weather and hydrological services, (b) support for disaster risk management (DRM) operations including expansion of "end-to-end" early warning systems in small river basins with floods and flash floods, (c) development of an Agricultural and Climate Advisory Service (ACAS), and (d) the creation of a National Framework for Climate Services.

Component 3: Ayeyarwady River Navigation Enhancements (USD 37.85 million)

3.1 Navigation Improvements (USD 30.35 million): This sub-component will support navigation improvements to increase water levels during the low water season for both passenger and cargo vessels, primarily along the busiest stretches of the Ayeyarwady river. This sub-components activities will include: (a) 1-dimensional and 2-dimensional river modeling to identify the scope of works for river navigation enhancements, sedimentation modeling which is essential for effective operations and maintenance, preparation of detailed design documents, cost estimates and bidding documents, and supervision of construction work; (b) preparation of an Environmental and Social Impact Assessment (ESIA), including site-specific Environmental and Social Management Plans (ESMPs), and if needed site-specific Resettlement Plans and Indigenous Peoples Plans, for the proposed enhancement works; and (c) construction of the enhancement works. The scope of works will initially focus on the Mandalay – Nyaung Oo section of the Ayeyarwady River and will be expanded to other critical stretches between Nyaung Oo and Yangon.

3.2 Navigation Aids (USD 3.4 million): This sub-component will support (a) the purchase and installation of navigation aids such as buoys, signage, modern GPS mapping, communications systems (requiring survey boats, echo-sounding equipment and radar) and the installation of lighting and signage systems to enable night time navigation on the Mandalay – Nyaung Oo section of the

River; and (b) a strengthened river pilot system to enhance safety and facilitate efficient navigation along the Mandalay – Yangon section of the Ayeyarwady.

3.3 Water Quality Monitoring (USD 2 million). This component will support the design and piloting of a water quality monitoring system.

3.4 Institutional Strengthening and Implementation Support (USD 2.1 million): This component will support (a) Component 3 implementation costs, (b) a fleet optimization study to improve transport efficiency by ensuring that fleet development is well suited to the river, and (c) capacity building, training and communications and awareness raising activities related to the Project-sponsored river improvements and new information, regulations and procedures.

Component 4: Contingent Emergency Response (USD 0 million)

This ‘zero component’ (initially without any allocated funding) will allow for the rapid reallocation of funds from other components to provide emergency recovery and reconstruction support in the event of a natural disaster, emergency and/or catastrophic event. Funds potentially reallocated to Component 4 would be disbursed either against a positive list of critical goods and/or against the procurement of works, and consultant services required to support the immediate response and recovery needs of GoM. A Contingent Emergency Response Implementation Plan will be developed to guide financial management, procurement, safeguard and any other necessary implementation arrangements and procedures.

4. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

The project will be located within the Ayeyarwady River Basin. The Ayeyarwady rises in the Himalayas and bisects Myanmar from north to south, prior to emptying through a nine-armed delta into the Bay of Bengal. While the Ayeyarwady tributaries host a number of multipurpose dams, the mainstream has no significant structures on it.

The Ayeyarwady River (also known as Irrawaddy; length 2170 km; drainage area 413,710 Km²) is the largest river in Myanmar and has been described as the heart of the nation. The basin accounts for over 60% of Myanmar’s landmass and accommodates 70% of its population. It is rich in natural resources particularly forests, land and water in addition to biodiversity. The Ayeyarwady Basin is home to numerous emblematic and endangered species including elephants, tigers, leopards, sea turtles, crocodiles, a broad range of waterfowl and migratory birds, and the Irrawaddy dolphin.

In addition to a large number of Bamar ethnic communities, of which many are poor and who depend on Ayeyarwady river basin resources for their livelihoods, the basin is home to many ethnic minorities who are also dependent on the river for livelihoods and subsistence. The river traverses Kachin ethnic state.

5. Environmental and Social Safeguards Specialists

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6. Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/ BP 4.01	Yes	<p>The Project is proposed as category A for Environmental Assessment due to its spatial extent, the richness and diversity of its ecology and extent of its resources and support to livelihoods, its focus on integrated river basin planning (Component 1) through the development of an Ayeyarwady River Basin Management Plan and studies, and civil works to be carried out under Components 2 and 3. The project also supports a diverse set of activities related to sustainable environmental management in Myanmar, including building a water resources information management system, strengthening the collection and analysis of hydro-meteorological data, designing and piloting a water quality monitoring system, improving river navigation, building institutional capacity for water resources management and relevant environmental and social safeguards, undertaking strategic studies and planning, and strengthening project management and emergency response.</p> <p>The detailed designs of the planned infrastructure investments will not be identified prior to project appraisal, therefore an Environmental and Social Management Framework (ESMF) has been prepared to provide for screening and assessing environmental and social issues and preparing required safeguard instruments during project implementation.</p> <p>The project will also support the establishment of a Decisions Support System to provide the newly formed National Water Resources Committee with the information needed to better assess the complex impacts (including environment and social aspects) and tradeoffs of proposed developments on the Ayeyarwady River.</p> <p>The project will support the preparation of feasibility studies for investments that could be financed in future phases of the proposed series of projects (sub-component 1.3). These potential future investments (i.e., in irrigation, hydropower, navigation, delta management, municipal water supply or wastewater management systems) are</p>

	<p>likely to have adverse environmental and social impacts. The Terms of References (TORs) of these studies will include screening of environmental and social safeguard risks, assessment of impacts (including cumulative aspects) and issues in line with relevant World Bank Group operational policies. In case the river basin planning process identifies priority investments for which feasibility studies will be supported by the project, ESIA and other safeguard instruments (e.g. RAPs, IPPs), as needed, will be prepared for such investments according to the ESMF and Bank policies.</p> <p>River channel enhancement works are planned under the project to increase the 'least available depth' of the river during the low flow season; currently only small or lightly loaded vessels are able to pass through several sections of the busiest stretch of the Ayeyarwady (from Mandalay to Nyaung Oo) during the low flow season. The work is likely to involve the construction of groins within the riverbed and associated dredging that will serve to concentrate the dry season flow into a narrower and hence deeper section of the river bed in order to facilitate safe ship passage. These activities may impact downstream water quality and turbidity, aquatic habitats, aquatic flora and fauna, fishery, primary productivity and users of the river. Transport and disposal of dredged materials will also have impacts, and the works may have impacts on navigational traffic and safety. Unexploded ordinance (UXO) clearance works are not expected, however, if required they will be implemented in line with specific international standards of operations. During implementation, before channel enhancements begin, a feasibility study and ESIA will be carried out (see activity 3.2) to assess environment and social impacts in detail and required safeguard instruments will be prepared, as needed.</p> <p>To enhance the project benefits and to address the potential environmental and social impacts, key elements of the project approach include:</p>
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	<p>1. An ESMF prepared by appraisal to establish the screening and assessment process of environmental and social impacts of various activities including the Master Plan and Decision Support System (Component 1.2) including the Strategic Environment and Social Assessment (SESA), the feasibility and other studies under the preparation of future investments sub-component (1.3), the upgrading of hydromet stations (Component 2), the channel enhancement works (Component 3) and any Technical Assistance provided during project implementation.</p> <p>The ESMF specifies the type, level and depth of environmental and social impact assessments (ESIAs or ESMPs) required for each of the project activities based on the results of the screening and the relevant impacts. The ESMF was the subject of two rounds of public consultations and disclosure prior to project appraisal.</p> <p>2. During project implementation the following safeguard activities will be undertaken, as described in the ESMF:</p> <p>(i) ESIAs will be undertaken for the river navigation improvements to assess all environmental (including potential cumulative impacts) and social impacts, and safeguard plans will be prepared as needed (e.g. RAP, IPP).</p> <p>(ii) TORs for proposed investments under the preparation of future investments sub-component 1.3 will include detailed procedures for screening of environmental and social safeguard risks, mainstreaming of safeguard issues into the activity design, and, if needed, undertaking of ESIAs and preparation of safeguard instruments, such as ESMPs, RAPs and IPPs.</p> <p>(iii) In case the river basin planning process identifies priority investments for which feasibility studies will be supported by the project, screening of environmental and social safeguard risks will be undertaken, and ESIAs and other safeguard instruments (e.g. RAPs,</p>
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	<p>IPPs), as needed, will be prepared.</p> <p>(iv) A Strategic Environmental and Social Assessment (SESA) will be conducted to support the development of a long-term basin-wide perspective and institutional assessment to inform the development of the river basin master plan. A preliminary draft ToRs for the SESA, developed and annexed to the ESMF, includes environmental and social safeguard provisions and the need to take into consideration regional and cumulative effects. The preliminary ToRs for the SESA will be finalized and approved by the Bank during project implementation following an expert and stakeholder workshop.</p> <p>Furthermore, the River Basin Management Plan will contain the basic environmental and social data collection and mapping such as biodiversity areas, aquatic habitats, riparian habitats , water quality, river and riparian uses, livelihoods dependencies including the presence of ethnic minorities. Environment and social risks and potential impacts will be taken into account in all development scenarios. A TOR of the River Basin Management Plan will be provided at the beginning of project implementation to the Regional Safeguards Secretariat. It will identify in detail the scope of the different environment and social aspects to be taken into account in the River Basin Management Plan. It will also indicate how the Strategic Environmental and Social Impacts Assessment (SESA) will be integrated into the River Basin Management Plan and how regional and cumulative effects will be taken into account.</p> <p>3. The safeguard capacity of the institutions involved in project implementation and river basin management will be enhanced through training and learning-by-doing activities. A detailed safeguards institutional capacity and capacity building plan will be developed and agreed upon with counterparts at the beginning of project implementation in order to provide the support required to implement the different safeguards activities related to this project.</p>
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		All safeguard instruments developed during implementation, whether assessments or plans, including ToRs and the final SESA, will be shared with the Regional Safeguards Secretariat for review and clearance to ensure timely and efficient advice that is consistent with the Bank's safeguard policies. The environment and social content of the TOR for the River Basin Management Plan will also be reviewed and cleared by the Regional Safeguards Adviser.
Natural Habitats OP/BP 4.04	Yes	<p>This policy is triggered because of the positive impacts that are anticipated as a consequence of better management of the river's water resources. At the same time, however, project activities may have negative impacts on natural habitats, for example channel enhancement works or works associated with the upgrading of the hydromet system could potentially affect aquatic and riparian habitats. Furthermore, Projects included in the sub-component for preparation of future investments, such as irrigation and hydropower, are likely to trigger the policy.</p> <p>The ESMF provides for the screening of potential project impacts and how safeguard issues under 4.04 should be addressed during project implementation.</p>
Forests OP/BP 4.36	Yes	No activities financed under this Project (first phase of the series of projects envisioned) are anticipated in forest areas. However, the policy is triggered because projects included in the sub-component for preparation of future investments, such as irrigation and hydropower, are likely to trigger the policy. Detailed assessment and relevant safeguards instruments will be prepared as part of project implementation, if needed, in order to comply with this policy provision.
Pest Management OP 4.09	Yes	The project activities are not expected to use pesticides, nor lead to increased usage of pesticides. However, this policy will be screened in future investments supported by sub-component 1.3 and appropriate instruments (Integrated Pest Management Plans) would be prepared as needed.
Physical Cultural Resources OP/ BP 4.11	Yes	The project will carry out civil works under the

		<p>channel enhancements and hydromet modernization sub-components. The channel enhancement activities will be carried out mainly within the river bed and hydromet modernization activities will upgrade existing facilities. As a consequence, no PCR impacts are anticipated, however, this cannot be ruled out until the detailed designs have been prepared.</p> <p>Furthermore, projects included in the sub-component for preparation of future investments, such as irrigation and hydropower, may also trigger the policy. The policy is triggered, and the ESMF includes guidelines for addressing OP 4.11, including “Chance Finds Procedures”.</p>
Indigenous Peoples OP/BP 4.10	Yes	<p>The Ayeyarwady basin is home to diverse groups of ethnic minorities who meet the eligibility criteria of OP 4.10 and are dependent on the river for livelihoods and subsistence. The river also traverses Kachin ethnic state. OP 4.10 is thus triggered.</p> <p>Overall, the project is expected to generate positive impacts on livelihoods, including for ethnic minorities. However, activities associated with the river channel enhancement works (Component 3) may result in temporary economic disruptions and hydromet modernization activities (Component 2) may be carried out in areas where ethnic minorities are present. Projects included in the sub-component for preparation of future investments may also include areas with ethnic minorities.</p> <p>An Indigenous Peoples Policy Framework (IPPF) was developed as part of the ESMF to guide the design of mitigation measures and to provide mechanisms to ensure the meaningful participation of ethnic minorities in the Project. Indigenous Peoples Plans (IPP) will be developed if necessary during implementation for specific project activities based on a social assessment and free, prior and informed consultation process with affected ethnic minorities when the exact scope and scale of project impacts become known.</p> <p>Development of the river basin management plan</p>

		will also have implications for ethnic minorities. The basin-wide SESA will assess among other things issues, risks, and opportunities concerning ethnic minorities. Ethnic minorities and their representative organizations will be engaged in the SESA and consultation process during project implementation, and stakeholder forums will be established which will help promote communications with and outreach to broad stakeholders including representatives of ethnic minorities.
Involuntary Resettlement OP/BP 4.12	Yes	<p>While the overall project impact is expected to be positive, civil works to be financed under Components 2 and 3 could affect people who use the Ayeyarwady riverbanks, and potential investments examined under the project preparation facility (Component 1) will involve future land and other property loss. This policy is therefore triggered.</p> <p>The ESMF includes a Resettlement Policy Framework (RPF) to address any land acquisition and other involuntary resettlement issues that may arise from project activities during project implementation. Resettlement Action Plans (RAP) will be prepared as needed for specific activities that require involuntary resettlement.</p>
Safety of Dams OP/BP 4.37	Yes	<p>The Project will not finance any activities related to the construction of dams nor affect operations of existing dams or affiliated reservoirs. However, projects included in the sub-component for preparation of future investments, such as irrigation and hydropower, may trigger the policy. Implementation of the policy provisions (i.e., due diligence of linked dams, proposal of any necessary corrective measures to address possible safety risk) will be evaluated and relevant instruments prepared during implementation if needed with any studies of the sub-component 1.3.</p>
Projects on International Waterways OP/BP 7.50	Yes	<p>The Ayeyarwady rises in the Himalayas, bisects Myanmar from north to south and empties through a nine-armed delta into the Bay of Bengal. A portion of the catchment areas that feed two of the tributaries of the river (the Maykha which is referred to as the Daying in China, and the Malikha which is referred to as the</p>

		Jiang in China) are located in China. The Malikha tributary in turn is fed by a sub-tributary originating within India. This meets the definition of an International Waterway as stipulated in paragraph 1 of the World Bank's Operational Policy 7.50 on International Waterways, although the combined flow outside of Myanmar is estimated to be less than 1%. The planned investment activities involve minor additions or alterations to an ongoing scheme of river training and protection, feasibility studies for potential future investments in the river basin and water resource/groundwater surveys. Although modeling and the environmental assessment have yet to be done, it is not anticipated that the construction or rehabilitation works proposed under the project will adversely change the quality or quantity of water flowing in the river and the project will not be appreciably affected by other riparians' possible water use. On this basis, the Bank has determined that the proposed project does not require riparian notification in accordance paragraphs 7(a) and 7(b) of OP 7.50.
Projects in Disputed Areas OP/BP 7.60	No	Based upon the information provided, no activities are planned in any disputed areas.

II. Key Safeguard Policy Issues and Their Management

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

OP/BP 4.01 Environmental Assessment: the project is rated as environmental assessment category A due to its spatial extent, the richness and diversity of its ecology and extent of its resources and support to livelihoods and its focus on integrated river basin planning (Component 1) through the development of a Ayeyarwady River Basin Management Plan and because of the river-related infrastructure works under Components 2 and 3, as well as the technical studies to be undertaken in Component 1 which could potentially lead to investments that have significant impacts on the river system as well as site-specific safeguard impacts.

The project is expected to have overall positive environmental and social benefits by (a) enhancing water resources management thereby contributing to the delivery of more reliable and better quality water to all users, (b) strengthening disaster risk management efforts related to flood, drought and storm risks by improving predictions of the timing and severity of weather extremes and delivering more effective warnings to at-risk (and generally predominantly poor) communities, and (c) enabling safer, more efficient inland water transport.

The project will target integration of gender dimensions in key assessments and planning exercises including the Basin Master Plan and the SESA; as well as in all communications and outreach

activities including the dissemination of disaster warnings and agricultural advisories. The project will also ensure that male and female staff of relevant agencies and communities have equal opportunities to participate in capacity building and training support from the Project.

Negative environmental impacts may arise in the course of the construction of the proposed river channel enhancements. Dredging and river training works can influence the water regime in rivers and swamp areas in the wider Ayeyarwady catchment area. This is a slow process that will develop over the years after completion of works. As a result of reduced water flow in the lateral branches and minor flooding, changes in groundwater levels can be expected. This can negatively affect the functioning of wetlands, which are important refuges, hatching grounds and habitats of plants, birds, fish, amphibians and other animals. In addition, dredging and the disposal of dredged materials can also potentially lead to turbidity, siltation and sedimentation, reduced primary productivity, substrate disturbance and scouring, all of which can have cumulative impacts on downstream users of the river.

The project will also support the construction of small works (e.g. the construction or refurbishment of a National Water Resources Committee (NWRC) Secretariat and Hydro-Informatics Center headquarters facility, the modernization of Observation Infrastructure, Data Management Systems and Forecasting and establishing of Navigation Aids from Mandalay to Yangon). The impacts of these small works are expected to be localized and can be prevented or reduced to acceptable levels by applying international construction practices and planning. Such potential impacts are related to: (i) air pollution/dust, noise, vibration, and access restriction, (ii) improper disposal of construction related waste; (iii) temporary pollution of soil and surface waters due to accidental spillage of fuel from construction activities; (v) safety hazards including worker safety; (vi) damage to natural habitats, aquatic fauna, or existing vegetation, and (vii) impacts to physical cultural resources. These impacts should be properly managed during the construction phase by the contractor and closely supervised by the Project Management Unit (PMU), the Project Implementation Team and the supervision engineer.

The AIRBM project will support technical assistance to inform river basin management including: (i) the preparation of a River Basin Master Plan and associated Decision Support System, and (ii) technical studies such as the basin groundwater survey, sedimentation survey, fleet optimization study, and Ayeyarwady river navigation strategy. It is envisioned that the Master Plan and technical activities will suggest investments or management options that could have associated environmental and social risks and impacts. A SESA will be carried out during implementation in order to better understand the environmental and social dynamics and impacts of the potential development and management options in the Ayeyarwady basin. Furthermore, it is envisioned that the Master Plan will suggest priority investments to manage the river basin. The regional and cumulative impacts of these investments will be assessed in the SESA or as part of the relevant ESIA's. The AIRBM, under the sub-component 1.3, will finance advisory support for planning or feasibility studies linked to some of those suggested investments.

At this point of the project, the potential investments or their likely environmental and social impacts are not known. Therefore, the AIRBM project will carry out environmental and social assessments commensurate to the potential impacts and risks of the investments that will be considered as either Category A or B projects based on the results of screening

In order to study the potential impacts of the project and to propose related mitigation measures to address such impacts, the Borrower has prepared an Environmental and Social Management

Framework (ESMF) to meet the OP/BP 4.01 requirements and project appraisal conditions. The ESMF covers all investments and activities financed by or involving the Bank and sets out the process based on which the related ESIA/ESMPs, as well as any RAPs or IPPs needed, will be developed during project implementation once the detailed designs and other relevant technical studies are prepared. The ESMF summarizes investment options analysis; reviews existing legislative and organizational structures for environmental management; briefly describes existing environmental and social conditions and anticipated impacts from known project activities at this point; outlines environmental impact mitigation and monitoring actions; and describes the public consultation process during project preparation and implementation. It also includes a preliminary draft ToR for the SESA that will be developed in parallel with and integrated into the Basin Master Plan. It also describes the process for ESIA and/or other specific safeguard instruments or ToRs preparation relevant to future subprojects (sub-component 1.3), if required.

OP/BP 4.04 Natural Habitats will apply since channel enhancement works and monitoring station upgrades could affect river-dependent ecosystems and habitats; activities supported under the preparation of future investments sub-component may also trigger the policy as well as activities related to the Master Plan and SESA. The ESMF identifies potential impacts that will be analyzed in detail during project implementation when ESIA will be undertaken to produce site specific analyses and mitigation options in parallel with detailed design.

OP/BP 4.36 Forests is triggered. No activities financed under this Project (first phase of the series of projects envisioned) are anticipated in forest areas. However, the policy is triggered because projects included in the sub-component for preparation of future investments, such as irrigation and hydropower, are likely to trigger the policy.

Similarly, OP 4.37 (Safety of Dams) and OP 4.09 (Pest Management) are triggered since future investments, such as irrigation and hydropower, may need to comply with these policies provisions. This Project will not finance any activities related to irrigation schemes or the construction of dams nor affect operations of existing dams or affiliated reservoirs.

OP 4.10 is triggered since ethnic minorities who meet the eligibility criteria of OP 4.10 are known to be present in the Ayeyarwady river basin; the basin also traverses Kachin ethnic state. Some activities associated with the river channel enhancement works (Component 3) may result in temporary economic displacement of some ethnic minorities. Also, changes in the management of the Ayeyarwady basin may result in the short/ mid-terms negative impacts on their livelihoods, and potential investments to be prepared (Sub-component 1.3) may be carried out in areas where ethnic minorities are present. An Indigenous Peoples Policy Framework (IPPF) was developed as part of the ESMF to provide guidance on the design of mitigation measures and develop mechanisms to ensure the meaningful benefits and participation of ethnic minorities in the different project activities. If needed, Indigenous Peoples Plans (IPP) will be developed during implementation based on a social assessment and free, prior and informed consultation process with affected ethnic minorities when the exact scope and scale of the specific project impact becomes known. The SESA, which will inform the master plan, will also assess among other things issues, risks and opportunities concerning ethnic minorities, and engage ethnic minorities in assessment and consultation exercises.

OP/BP 4.11 on Physical Cultural Resources will apply as a precautionary measure given Myanmar's wealth of cultural heritage. There are numerous pagodas and religious sites along the river, including in the Mandalay-Nyaun Oo section of the river, and chance find procedures are

included in the ESMF and will be included in construction contracts. In addition to following national laws on cultural heritage, a Physical Cultural Resources (PCR) Management Plan will be prepared, if needed, during the ESIA/detailed design stage based on the PCRs assessment undertaken during the preparation of the ESIA.

OP 4.12 on Involuntary Resettlement is triggered. While the overall project impacts are expected to be positive, civil works to be financed under Components 2 and 3 could affect people who use the Ayeyarwady riverbanks, and potential investments examined under the preparation of future investments sub-component (1.3) could involve future land and other property loss. The ESMF includes a Resettlement Policy Framework (RPF) to address any land acquisition and other involuntary resettlement impacts that may arise once detailed project activities are identified during project implementation. This includes the preparation of Resettlement Action Plans, if needed.

OP/BP 7.50 Projects on International Waterways policy is triggered since the Ayeyarwady is an international waterway. However, an exception to notification has been requested.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

At this point, no irreversible or long term adverse indirect impacts are anticipated from these project activities. However, the ESIA and the SESA will seek to identify and propose measures for future and cumulative risks in the project area, for example anticipated increases in water pollution or wastewater discharge loads for development plans and priority activities that might be identified as part of the Ayeyarwady Master Plan (Component 1).

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

In terms of the overall project design, an alternative that was considered included a watershed management component rather than the current navigation enhancements component. In discussions with government it was agreed that it would be very difficult to implement the watershed management component within this project because it would have been implemented by a different Ministry, the Ministry of Environment Conservation and Forestry. It was therefore decided that for this first project activities would be focused in a single Ministry. With regard to specific project activities, alternatives will be examined in the Master Plan, the SESA and project specific ESIA as described in the ESMF, as well as the final designs of the hydromet system and navigation enhancements.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

The government, the executing Ministry of Transport and other involved entities have no or very limited experience in World Bank safeguard policies as well as in conducting consultations and public disclosure. The government also has no or very limited experience to date in managing environmental and social impacts based on international good practice and it lacks updated legislation, professionals with experience preparing safeguard instruments in line with World Bank requirements, and the basic infrastructure for monitoring and laboratory analysis (especially linked to water, sediment and air quality).

The Bank will assist and guide the Borrower with the implementation of the provisions of the ESMF and other relevant safeguard instruments. Capacity building on safeguards will be undertaken as part of Component 1.1 on institutional development and implementation support

(Component 1.4) and includes funds for consultant and advisory services for safeguards. A detailed safeguards institutional capacity and capacity building plan will be developed and agreed upon with counterparts at the beginning of project implementation in order to provide the support required to implement the different safeguards activities related to this project.

Based on input from the stakeholder consultations and the results of the preliminary assessments of existing environmental and social data relevant to the project, the project ESMF was developed and includes guidance on screening for safeguards impacts, preparation of site-specific ESIs and ESMPs, a Resettlement Policy Framework to address any land acquisition and other involuntary resettlement impacts, and an Indigenous Peoples Planning Framework to address issues concerning ethnic minorities who may be affected, whether positively or adversely, from project activities in areas with ethnic minorities.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

The key stakeholders of the project include the National Water Resources Committee, the Directorate of Water Resources and Improvement of River Systems (DWIR), the Department of Meteorology and Hydrology (DMH) and over 30 additional water-related government agencies, as well as river transport providers and users, communities that derive their livelihoods from water-dependent sectors and those that are vulnerable to water-related hazards.

Consultations have been undertaken with key Ministries, relevant Parliamentary committees, the River Users Association, and a broad group of NGOs and CSOs with interests in water, environment, natural resources management and disaster risk management, including consultations and public disclosure regarding the ToR for the preparation of the ESMF in May 2014 and the draft ESMF in September 2014. The ESMF has been finalized subsequent to the public consultations and describes the issues raised and how they have been responded to and addressed.

Public consultations will continue and be expanded throughout project implementation, either as part of environmental and social assessment processes or as part of the SESA and Stakeholder Engagement activities

The ESMF includes specific measures for consultation and public disclosure during project implementation, including particular measures for consulting with ethnic minorities as described in the IPPF for site-specific activities in areas with ethnic minorities. Moreover, the SESA will include a consultation process to engage all relevant stakeholders, including ethnic minorities, in the preparation of the river basin master plan. The draft ESMF was submitted to the Bank's Infoshop on August 13, 2014 and its Executive Summary to the Board on August 15, 2014. After translation, the draft ESMF was publicly disclosed in country in Myanmar language and English on September 4, 2014 prior to consultations held in Yangon and Mandalay on September 18 and 19, 2014

The Project will also support the creation of: (i) a Stakeholder Forum to ensure engagement of key stakeholders from the public sector, private sector, NGOs and CSOs, (ii) a local grievance mechanism aimed at resolving possible community concerns on the Project promptly, in an impartial, understandable and transparent process tailored to the specific community, and (iii) a Communication Strategy to ensure that stakeholder engagement is informed in a manner accessible to communities, project affected people, and other key stakeholders.

The PMU will continue disclosing relevant project environmental and social information in a manner accessible to affected communities and other stakeholders during implementation. Relevant project information includes all environmental and social assessment documents (e.g. ESIA, EMP, SESA) produced under the AIRBM project. The Client will also provide periodic reports to the affected communities and other relevant stakeholders on the implementation status or any modification to environmental and social management plans.

B. Disclosure Requirements

Environmental Assessment/Audit/Management Plan/Other	
Date of receipt by the Bank	02-Oct-2014
Date of submission to InfoShop	13-Aug-2014
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	15-Aug-2014
"In country" Disclosure	
Myanmar	04-Sep-2014
<i>Comments:</i>	
Resettlement Action Plan/Framework/Policy Process	
Date of receipt by the Bank	02-Oct-2014
Date of submission to InfoShop	13-Aug-2014
"In country" Disclosure	
Myanmar	04-Sep-2014
<i>Comments:</i> A Resettlement Policy Framework is a separate annex included in the ESMF.	
Indigenous Peoples Development Plan/Framework	
Date of receipt by the Bank	02-Oct-2014
Date of submission to InfoShop	13-Aug-2014
"In country" Disclosure	
Myanmar	04-Sep-2014
<i>Comments:</i> An Indigenous Peoples Planning Framework is a separate annex included in the ESMF.	
Pest Management Plan	
Was the document disclosed prior to appraisal?	NA
Date of receipt by the Bank	NA
Date of submission to InfoShop	NA
"In country" Disclosure	
<i>Comments:</i>	
If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.	
If in-country disclosure of any of the above documents is not expected, please explain why:	

C. Compliance Monitoring Indicators at the Corporate Level

OP/BP/GP 4.01 - Environment Assessment	
Does the project require a stand-alone EA (including EMP) report?	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>] NA [<input type="checkbox"/>]
If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>] NA [<input type="checkbox"/>]
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>] NA [<input type="checkbox"/>]
OP/BP 4.04 - Natural Habitats	
Would the project result in any significant conversion or degradation of critical natural habitats?	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>] NA [<input type="checkbox"/>]
If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?	Yes [<input type="checkbox"/>] No [<input type="checkbox"/>] NA [<input checked="" type="checkbox"/>]
OP 4.09 - Pest Management	
Does the EA adequately address the pest management issues?	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>] NA [<input type="checkbox"/>]
Is a separate PMP required?	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>] NA [<input type="checkbox"/>]
If yes, has the PMP been reviewed and approved by a safeguards specialist or PM? Are PMP requirements included in project design? If yes, does the project team include a Pest Management Specialist?	Yes [<input type="checkbox"/>] No [<input type="checkbox"/>] NA [<input checked="" type="checkbox"/>]
OP/BP 4.11 - Physical Cultural Resources	
Does the EA include adequate measures related to cultural property?	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>] NA [<input type="checkbox"/>]
Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>] NA [<input type="checkbox"/>]
OP/BP 4.10 - Indigenous Peoples	
Has a separate Indigenous Peoples Plan/Planning Framework (as appropriate) been prepared in consultation with affected Indigenous Peoples?	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>] NA [<input type="checkbox"/>]
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>] NA [<input type="checkbox"/>]
If the whole project is designed to benefit IP, has the design been reviewed and approved by the Regional Social Development Unit or Practice Manager?	Yes [<input type="checkbox"/>] No [<input type="checkbox"/>] NA [<input checked="" type="checkbox"/>]
OP/BP 4.12 - Involuntary Resettlement	
Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>] NA [<input type="checkbox"/>]
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>] NA [<input type="checkbox"/>]
OP/BP 4.36 - Forests	
Has the sector-wide analysis of policy and institutional issues and constraints been carried out?	Yes [<input type="checkbox"/>] No [<input type="checkbox"/>] NA [<input checked="" type="checkbox"/>]

Does the project design include satisfactory measures to overcome these constraints?	Yes [] No [] NA [×]
Does the project finance commercial harvesting, and if so, does it include provisions for certification system?	Yes [] No [×] NA []
OP/BP 4.37 - Safety of Dams	
Have dam safety plans been prepared?	Yes [] No [] NA [×]
Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank?	Yes [] No [×] NA []
Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?	Yes [] No [] NA [×]
OP 7.50 - Projects on International Waterways	
Have the other riparians been notified of the project?	Yes [] No [] NA [×]
If the project falls under one of the exceptions to the notification requirement, has this been cleared with the Legal Department, and the memo to the RVP prepared and sent?	Yes [×] No [] NA []
Has the RVP approved such an exception?	Yes [×] No [] NA []
The World Bank Policy on Disclosure of Information	
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [×] No [] NA []
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes [×] No [] NA []
All Safeguard Policies	
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [×] No [] NA []
Have costs related to safeguard policy measures been included in the project cost?	Yes [×] No [] NA []
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes [×] No [] NA []
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes [×] No [] NA []

III. APPROVALS

Task Team Leader:	Name: Greg J. Browder	
Approved By		
Regional Safeguards Advisor:	Name: Peter Leonard (RSA)	Date: 11-Nov-2014

Practice Manager/ Manager:	Name: Ousmane Dione (PMGR)	Date: 12-Nov-2014
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