



# Facility Administration Manual

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Project Number: 38412  
Loan Number: XXXX  
September 2010

## **India: Multitranche Financing Facility - Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program**

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## ABBREVIATIONS

ADB	–	Asian Development Bank
AP	–	affected person
AIFRERMA	–	Assam Integrated Flood and Riverbank Erosion Risk Management Agency
AIFRERMIP	–	Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program
CBFRML	–	community based flood risk management and livelihood
CDP	–	capacity development plan
CWC	–	Central Water Commission
DFID	–	Department for International Development
DMA 2005	–	Disaster Management Act 2005
DMC	–	disaster management committee
DPR	–	detailed project report
EIA	–	environmental impact assessment
EIRR	–	economic internal rate of return
EMP	–	environmental management plan
FFA	–	framework financing agreement
FFW	–	flood forecasting and warning
FRERM	–	flood and riverbank erosion risk management
FYP	–	five-year plan
ICB	–	international competitive bidding
IPPMS	–	investment program performance monitoring system
IWRM	–	integrated water resources management
LIBOR	–	London interbank offered rate
MFF	–	multitranches financing facility
MIS	–	management information system
MOWR	–	Ministry of Water Resources
NCB	–	national competitive bidding
NGOs	–	nongovernment organizations
OCR	–	ordinary capital resources
O&M	–	operation and maintenance
PFR	–	periodic financing request
PMU	–	project management unit
PPMS	–	project performance monitoring system
PPTA	–	project preparatory technical assistance
RDMD	–	Revenue and Disaster Management Department
RF	–	resettlement framework
RP	–	resettlement plan
SEIA	–	summary environmental impact assessment
SGIA	–	second generation imprest account
SGOA	–	state government of Assam
SIO	–	subproject implementation office
SOE	–	statement of expenditure
SWP	–	State Water Policy
TA	–	technical assistance
UNDP	–	United Nations Development Program
WRD	–	Water Resources Department

**LOAN PROCESSING HISTORY**

Approval of PPTA	26 September 2008
Fact-finding Mission	27 January-7 February 2009
Management Review Meeting (MRM)	9 October 2009
Appraisal Mission-1	1-16 February 2010
Appraisal Mission (Final)	27 April – 10 May 2010
Staff Review Meeting (SRM)	29 July 2010
Loan Negotiations for MFF and Tranche 1	7-8 September 2010
Board Circulation	29 September 2010
Board Approval	19 October 2010
Project 1 Approval	IV October 2010
Loan Agreement Signing	November/December 2010
Loan Effectiveness	December/January 2010
Physical Completion Date	31 March 2017
Loan Closing Date	30 September 2017

### **Facility Administration Manual Purpose and Process**

The facility administration manual (FAM) describes the essential administrative and management requirements to implement the investment program on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures.

The Assam Integrated Flood and Riverbank Erosion Risk Management Agency (AIFRERMA) under the state government of Assam is responsible for the implementation of ADB-financed Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program (AIFRERMIP), as agreed jointly between the SGOA, Government of India and ADB, and in accordance with government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by AIFRERMA of their obligations and responsibilities for program implementation in accordance with ADB's policies and procedures.

At Loan Negotiations the Government and ADB shall agree to the FAM and ensure consistency with the Framework Financing Agreement (FFA). Such agreements shall be reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the FAM and the Loan Agreement, the provisions of Loan Agreement shall prevail.

After ADB Board approval of the investment program's report and recommendations of the President (RRP), changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the FAM.

## I. FACILITY DESCRIPTION

1. **Rationale.** India is one of the most disaster-prone countries in the world. Flooding is a major recurrent natural disaster, causing annual damage of \$450 million on average, with increasing severity in the recent years. High flood risk discourages private investments in productive activities, and is thus a key contributor of persistent regional and rural-urban disparity. In many cases, the poorest segment of the society suffers the greatest risk and damage. Vulnerability is particularly high in eastern and northeastern India where poverty level is high. The Government of India is promoting state level sector reforms through its National Water Policy revised in 2002, advocating comprehensive structural and nonstructural measures integrated with improved catchment management pursued with a long term planning framework. Strengthening resilience against water disaster is also one of the key elements of the Climate Change Action Plan of the Government of India (the Government) defined in 2009.

2. Assam is located in alluvial plains and adjacent low hilly terrains of the Brahmaputra River basin. The state remains one of the poorer states in India. Despite recent acceleration of its economic growth led by broad economic and fiscal reforms, disparity against the national average income has still been widening. Effective flood risk management remains high on the state's development agenda, since substantial majority of its urban and agriculture area is located in flood prone areas, and suffering from devastating damages in high flood years. Yet the task is quite challenging, given massive flood discharges of the Brahmaputra River and its highly dynamic morphology, caused by extreme rainfall and fragile subsoil in its catchment, and heavy sediment transport. Addressing the problems calls for a comprehensive long term perspective and sound policy and planning framework as advocated by the Government.

3. The state government of Assam (SGOA) through Water Resources Department (WRD) has extended embankments and associated structures to protect about 50% of its flood prone area. Yet their effectiveness is constrained due to poor designs overlooking local drainage, insufficient maintenance, failure due to river erosion, and limited stakeholder participation. High priority needs to be accorded to improving the reliability of existing embankment systems with assured maintenance. Where feasible, riverbank protection needs to be provided systematically and adaptively in response to the dynamic morphology, and exploring more cost-effective and sustainable innovations such as the use of geo-textile fabrics. Nonstructural measures need to be introduced such as risk education, risk mapping and warning, and flood proofing. These should be pursued with sound knowledge development to understand complex morphology and floodplain hydrology, and participatory mechanisms to ensure transparency and accountability.

4. SGOA initiated economic reforms in the early 2000s aiming at inclusive growth with stronger governance and people's participation. A partnership with ADB has been established in strategic sectors including flood management. SGOA has initiated reform steps including (i) establishing the state Water Resources Council (headed by Chief Minister) and Board as sector apex bodies to guide the reform process; (ii) drafting a state water policy (SWP) with a vision towards setting up integrated water resources management system; (iii) including holistic FRERM as a prime element of the draft SWP setting out a sound strategy to this end; and (iv) notifying National Disaster Management Act and establishing disaster management organizations (DMOs) at state and local government levels. For the purpose of establishing and demonstrating holistic and sustainable FRERM in partnership with ADB, SGOA set up Assam Integrated FRERM Agency (AIFRERMA) in 2009, an autonomous body anchored to WRD with multidisciplinary structure, stable leadership, high level oversight, and timely fund flow. A roadmap to consolidate its effective operations has also been prepared, covering strategic planning, improved infrastructure quality, and sustainable maintenance.

5. The Government and SGOA in their 11<sup>th</sup> Five-year Plan (FYP: 2008–12) have placed significantly high priority for extending effective FRERM systems in flood prone areas. This has provided a basis for the Facility–Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program (AIFRERMIP). The initial engagement with AIFRERMIP will take a focused approach on three selected and appraised subprojects having existing embankments protecting critical urban and productive rural areas. They cover some 90km (7% of total) reaches of the Brahmaputra River in the state. Innovations and international best practices and lessons have been drawn, in terms of (i) knowledge development, (ii) more cost effective, adaptive, and sustainable alternatives in structural and nonstructural instruments, and (iii) holistic program delivery with improved governance, with stakeholder participation, stringent infrastructure quality control, integration with disaster management and livelihood promotion programs, and accountability mechanisms in program management.<sup>1</sup> The AIFRERMIP is needed as the first step towards state wide application of comprehensive FRERM over the longer term. Wider scale replication is envisaged upon its successful implementation, and progressive strengthening of the institutional and knowledge bases.

6. The AIFRERMIP will institutionalize comprehensive risk management systems to cope with critical water disasters in Assam. It will demonstrate the following:

- (i) Establishment of a sound planning framework of holistic FRERM as a basis for strategic and systematic implementation of sector programs.
- (ii) Comprehensive structural and nonstructural measures, with introduction of cost-effective, sustainable, and innovative riverbank protection adaptive to natural river processes, and nonstructural measures applied in a limited scale in Assam.
- (iii) Focused support for institutional development, including (a) knowledge base, (b) autonomous AIFRERMA with multi-disciplinary and accountable implementation with stable leadership, and (c) reforms and capacity strengthening of WRD.
- (iv) Integration of disaster and FRERM operations, with DMOs empowered to join all decision making process with participation of women and vulnerable groups.

7. The specific innovations which are applied to enhance cost-effectiveness and sustainability of managing riverbank erosion will include the following, which are also advocated and supported by the Ministry of Water Resources (MOWR) in the recent years:

- (i) Promotion of revetments as appropriate structural measures that can stabilize bank lines along the naturally developed alignments with little flow disruption, as compared to spurs that obstruct river flows and cause high maintenance requirements as well as erratic erosion in adjacent and opposite reaches.
- (ii) Use of alternative materials such as sand-filled geo-textile containers, which is increasingly seen as lower cost and sustainable technology in view of rapidly rising financial and environmental costs of quarrying boulders from forest areas.<sup>2</sup>
- (iii) Development of short-term erosion prediction tool, which could reduce the mitigation cost through advance planning (as opposed to reactive response) of protection works, and advance warning and evacuation of vulnerable people.<sup>3</sup>

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<sup>1</sup> Lessons learned are shown in the linked document of ADB's appraisal document.

<sup>2</sup> The State with the support of MOWR also applied the technology recently for embankment reconstruction in northern Assam. The technology supported by ADB was recently demonstrated effective in Bangladesh under similar river conditions to Assam and standardized in their national guidelines.



- (iv) Application of a new and lower cost approach of coping with erosion with siltation inducement through flow retarding screens, which have been recently developed in Assam and proven effective up to certain flow conditions. This has a potential for further reducing the cost of riverbank erosion management when effectively combined with other structures such as revetments.

8. **Impact and Outcome.** The Impact of the Investment Program will be reduced economic vulnerability and social disruption caused by flood and riverbank erosion risks in Assam State. This will also contribute to increased economic growth and reduced poverty in the three priority subproject areas along 90km reach of the Brahmaputra River having vulnerable embankments protecting the livelihood of one million people in urban, suburban, and productive rural areas. Its outcome is enhanced effectiveness and reliability of the State's FRERM systems providing enhanced resilience. Location maps are shown in Figures 1–3.

9. **Outputs.** The outputs of the Investment Program comprises (i) FRERM planning, institutional and knowledge bases; (ii) comprehensive FRERM systems in three subproject areas; and (iii) multidisciplinary project management system. The investment will be split into two projects, with (i) project-1 (years 1–4) to provide immediately required investments in the three subproject areas<sup>4</sup> while providing a basis for institutional outputs, and (ii) project-2 (years 4–7) to complete the appraised investments with necessary adjustments following project-1 experience. The specific outputs for the AIFRERMIP (detailed in Framework Financing Agreement Schedule 1) and its project 1 are summarized in Table 1.1 below.

**Table 1.1: Investment Program and Project-1 Outputs**

Investment Program (Year 1–Year 7)	Project-1 (Year 1–Year 4)
<b>Component A. FRERM Planning, Institutional, and Knowledge Bases</b>	
(i) State FRERM Investment Plan <ul style="list-style-type: none"> <li>o Investment plan prepared, and annual review and implementation mechanism established</li> </ul>	o Draft state FRERM plan prepared.
(ii) Institutional Basis for FRERM <ul style="list-style-type: none"> <li>o Capacity development, office establishment, holistic FRERM guidelines for replication</li> </ul>	o Capacity development plan implemented (phase 1), office established, FRERM guidelines drafted
(iii) Data and Knowledge Base <ul style="list-style-type: none"> <li>o Data base on morphology and hydrology, erosion prediction modeling for Brahmaputra, hydrological modeling, action research with academic institutions</li> </ul>	o Data base in three subproject areas, erosion prediction modeling in lower Brahmaputra, hydrological modeling in one subproject area, action research (phase 1) implemented
(iv) Knowledge Sharing and Networking <ul style="list-style-type: none"> <li>o Knowledge sharing in regional countries and international seminars, study tours</li> </ul>	o Knowledge sharing and study tours (phase 1)
<b>Component B. Comprehensive FRERM Systems</b>	
(i) Nonstructural and CBFM with DMCs <ul style="list-style-type: none"> <li>o Community DMCs established and CBFM plans prepared in flood prone villages</li> <li>o Nonstructural programs (awareness campaign; improved warning; strengthened relief and response; hazard maps) delivered</li> <li>o CBFM plan implemented with community</li> </ul>	o Community DMCs established and plan prepared in 75 priority villages. o All program materials developed, and delivered in 75 priority villages. o CBFM plan implemented in 75 priority villages

<sup>3</sup> The prediction system—based on satellite image analyses—has also been established in lower reaches of the Brahmaputra and the Ganges Rivers.

<sup>4</sup> Such as riverbank protection works where erosion is progressing close to the existing embankment systems and renovation of existing deteriorated and vulnerable embankments.

<b>Investment Program (Year 1–Year 7)</b>	<b>Project-1 (Year 1–Year 4)</b>
<ul style="list-style-type: none"> <li>participation (community flood shelters, minor infrastructure, livelihood programs)</li> <li>(ii) Structural Measures               <ul style="list-style-type: none"> <li>o Flood embankments: 43km renovation</li> <li>o Riverbank protection with innovative technologies: 37km revetment and pro-siltation, rehabilitation of 10 spurs</li> <li>o Drainage improvement: 9 sluice gates</li> </ul> </li> <li>(iii) Sustainable Infrastructure Maintenance and Adaptation               <ul style="list-style-type: none"> <li>o Asset inventory and MIS for performance monitoring and maintenance planning</li> <li>o Maintenance and adaptation works implemented on the basis of MIS</li> <li>o Local resources mobilized for routine maintenance works</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>delivering intended results.</li> <li>o Flood embankments: 19km renovation</li> <li>o Riverbank protection: 18km revetment and pro-siltation works</li> <li>o Drainage improvement: 5 sluice gates</li> <li>o Establishing inventory and MIS for the three subproject areas</li> <li>o Maintenance works implemented based on performance monitoring through MIS</li> <li>o Beneficiary group organized for work monitoring and maintenance at project-1 work sites</li> </ul>
<b>Component C. Multidisciplinary Project Management System</b>	
<ul style="list-style-type: none"> <li>o PMU and SIOs set up and made functional with sound MIS</li> <li>o Project-2 proposal prepared and appraised</li> <li>o Participatory implementation decision making system between SIOs and DMOs</li> </ul>	<ul style="list-style-type: none"> <li>o All outputs as depicted in the left column are delivered under project-1.</li> </ul>

FRERM = flood and riverbank erosion risk management, CBFMR = community based flood risk management, DMC = disaster management committee, DMO = disaster management organization, MIS = management information system, PMU = project management unit, SIO = subproject implementation office.

Source: Asian Development Bank.

Figure 1: Dibrugarh Subproject

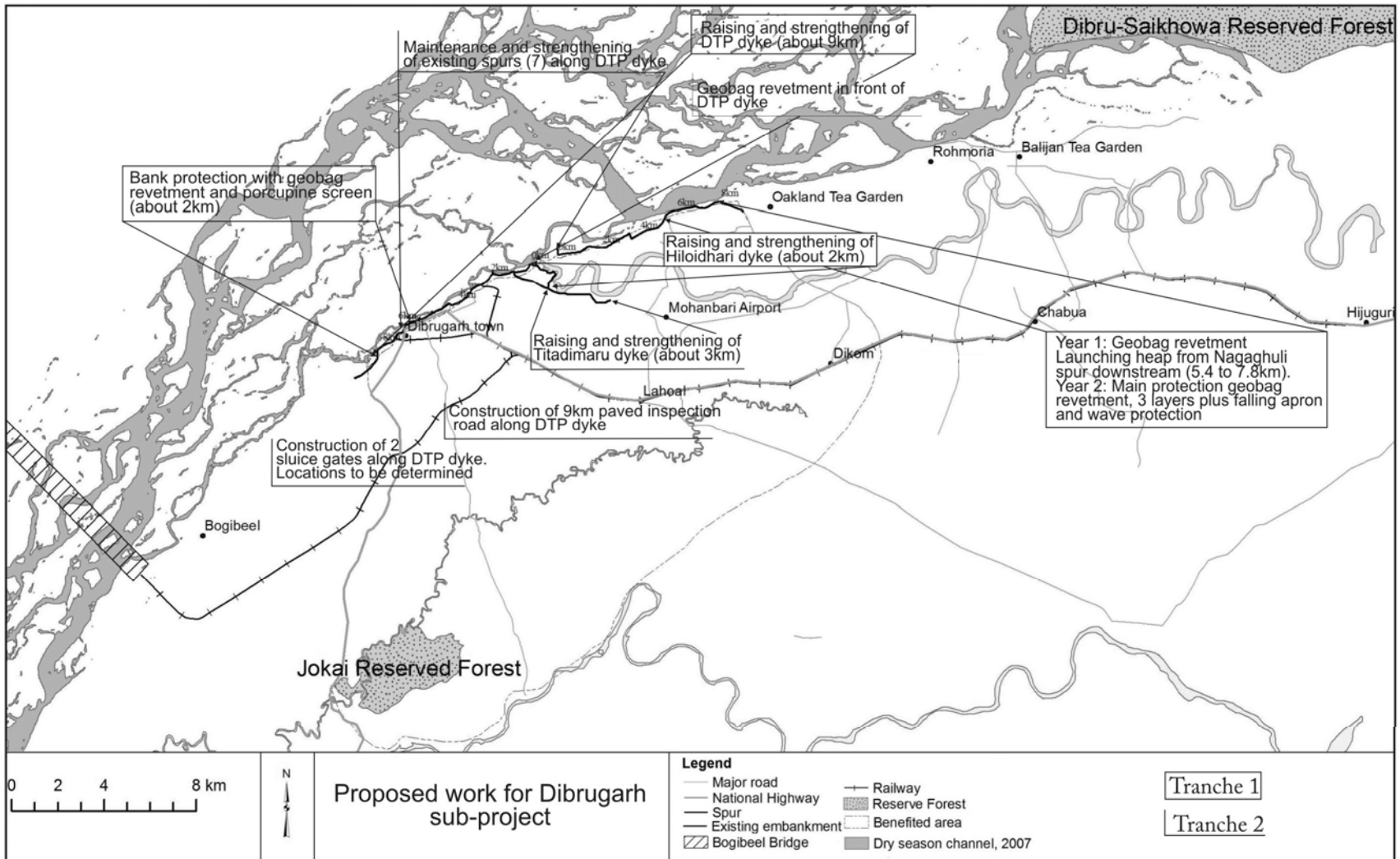
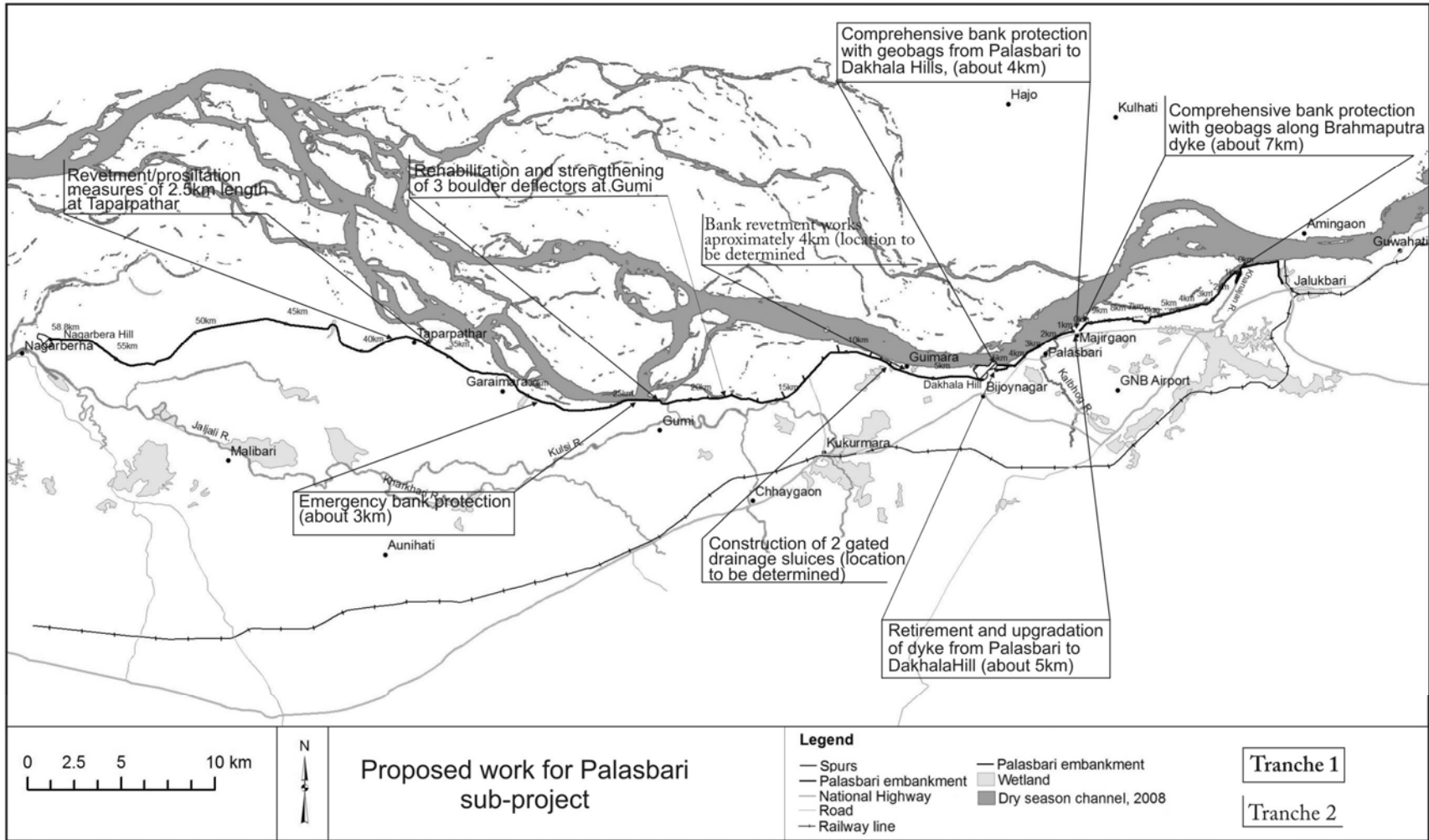




Figure 3: Palasbari Subproject



## I. IMPLEMENTATION PLANS

### A. Program Readiness Activities

**Table 2.1: Program Readiness Activities**

Indicative Activities	2010								Who responsible
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Establishment of the AIFRERMA with key staff in place	√	√	√						SGOA
Government counterpart funds allocation	√								SGOA
Retroactive financing actions	√								AIFRERMA
Completion and approval of the detailed design of Project 1				√					WRD-CWC
Completion, approval, and disclosure of safeguards documents – Project 1	√								SGOA, ADB
Advance contracting actions									
A. Consulting Services (3 packages)									AIFRERMA
• Commencement			√						
• Completion								02/11	
B. Goods bidding									
• Invitation for bids				√					AIFRERMA
• Contract Award							√		
C. Civil Works bidding									
• Invitation for bids					√				AIFRERMA
• Contract Award								01/11	
Loan Negotiation				√					AIFRERMA, GOI, ADB
ADB Board Loan approval					√				ADB
Loan signing							√		GOI, ADB
Issuance of legal opinion								√	GOI
Loan effectiveness									√ GOI, ADB

Source: Asian Development Bank (ADB) GOI – Government of India; SGOA = State Government of Assam

**Table 2.2A. Action Plan for Selection of Consultants (2 Packages for Institutional Strengthening and for Project Management)**

Activities	Start	Finish
EA Advertise Request for EOI	20-Aug-10	
EA prepare draft Request for Proposal	20-Aug-10	27-Sept-10
EA Receive EOI	20-Sept-10	
Evaluate EOI and prepare shortlist	20-Sept-10	27-Sept-10
EA approves & send Shortlist and RFP to ADB	27-Sept-10	8-Oct-10
ADB review and approve RFP and Shortlist	11-Oct-10	18-Oct-10
EA issue RFP	22-Oct-10	
Proposal Preparation and Submission	22-Oct-10	6-Dec-10
EA conduct technical evaluation	6-Dec-10	20-Dec-10
EA approves & sends technical evaluation to ADB	20-Dec-10	31-Dec-10
ADB review and approve technical evaluation	3-Jan-11	14-Jan-11

<b>Activities</b>	<b>Start</b>	<b>Finish</b>
Public Opening of Financial Proposal	21-Jan-11	
EA conduct financial evaluation and final ranking	24-Jan-11	4-Feb-11
EA approves & sends financial evaluation to ADB	4-Feb-11	11-Feb-11
ADB review and approve final ranking	14-Feb-11	21-Feb-11
EA invite first-ranked firm for negotiation	22-Feb-11	
EA negotiate contract with first-ranked firm	28-Feb-11	2-Mar-11
EA forwards negotiated draft contract	7-Mar-11	
ADB review and approve negotiated contract	7-Mar-11	11-Mar-11
EA sign the contract	21-Mar-11	

**Table 2.2B. Action Plan for Selection of Consultants (Benefit Monitoring and Evaluation)**

<b>Activities</b>	<b>Start</b>	<b>Finish</b>
EA Advertise Request for EOI	15-Sept-10	
EA prepare draft Request for Proposal	15-Sept-10	13-Oct-10
EA Receive EOI	13-Oct-10	
Evaluate EOI and prepare shortlist	14-Oct-10	23-Oct-10
EA approves & send Shortlist and RFP to ADB	25-Oct-10	30-Oct-10
ADB review and approve RFP and Shortlist	1-Nov-10	10-Nov-10
EA issue RFP	15-Nov-10	
Proposal Preparation and Submission	15-Nov-10	15-Dec-10
EA conduct technical evaluation	16-Dec-10	31-Dec-10
EA approves & sends technical evaluation to ADB	3-Jan-10	7-Jan-10
ADB review and approve technical evaluation	10-Jan-10	21-Jan-10
Public Opening of Financial Proposal	28-Jan-11	
EA conduct financial evaluation and final ranking	31-Jan-11	11-Feb-11
EA approves & sends financial evaluation to ADB	14-Feb-11	18-Feb-11
ADB review and approve final ranking	21-Feb-11	28-Feb-11
EA invite first-ranked firm for negotiation	1-Mar-11	
EA negotiate contract with first-ranked firm	7-Mar-11	9-Mar-11
EA forwards negotiated draft contract	14-Mar-11	
ADB review and approve negotiated contract	14-Mar-11	18-Mar-11
EA sign the contract	28-Mar-11	

**Table 2.3: Action Plan for the Engagement of NGOs**

<b>Activities</b>	<b>Start</b>	<b>Finish</b>
EA Advertise Request for EOI	15-Oct-10	
EA Receive EOI	12-Nov-10	
Evaluate EOI, prepare shortlist, and approve shortlist	15-Nov-10	22-Nov-10
ADB approves shortlist and EA request highest ranking NGO/firm to submit combined Technical-Financial proposal	23-Nov-10	3-Dec-10
NGO/Firm submits combined technical and Financial proposal	6-Dct-10	27-Dec-10
EA evaluates proposal	27-Dec-10	7-Jan-10
EA invites NGO/firm for negotiation	10-Jan-11	12-Jan-11
NGO submits the negotiated revised financial proposal	13-Jan-11	17-Jan-11
EA approves negotiated proposal	17-Jan-11	26-Jan-11
EA submits copy of the revised proposal and negotiated draft contract to ADB for concurrence	28-Jan-11	
ADB review and concurs award of contract	31-Jan-11	7-Feb-11
EA sign the contract	14-Feb-11	

**Table 2.4: Action Plan for Procurement of Goods**

<b>Activities</b>	<b>Start</b>	<b>Finish</b>
EA prepare draft bidding documents	24-Nov-09	30-Nov-09
ADB approve draft bidding documents	15-Dec-09	
CWC reviews and submits TAC note for DPR	10-Sep-09	13-Sept-10
EA issues advertisements Invitation for Bidding (IFB)	20-Sept-10	
EA issue bidding documents	20-Sept-10	
Bids received and opened	1-Nov-10	
EA evaluate bids	1-Nov-10	20-Nov-10
EA approves and submits to ADB for concurrence	22-Nov-10	1-Dec-10
ADB approve bid evaluation	2-Dec-10	17-Dec-10
EA sign contract	24-Dec-10	

**Table 2.5: Action Plan for Procurement of Civil Works**

<b>Activities</b>	<b>Start</b>	<b>Finish</b>
CWC submits TAC note for DPR	10-Sep-09	13-Sept-10
EA prepare final draft bidding documents and submits to ADB	20-Sept-10	20-Sept-10
ADB approve draft bidding documents	21-Sept-10	8-Oct-10
EA issues advertisements Invitation for Bidding (IFB)	15-Oct-10	
Bids received	12-Nov-10	
EA evaluate and approve technical bids	12-Nov-10	10-Dec-10
ADB approve Technical bid evaluation	13-Dec-10	20-Dec-10
EA opens bids of technically qualified bidders	27-Dec-10	
EA conducts financial evaluation and submits to ADB	27-Dec-10	17-Jan-11
ADB approve Financial bid evaluation	18-Jan-11	18-Jan-11
EA sign contract	7-Feb-11	



**B. Overall Program Implementation Plan**

**Figure 2.1: Overall Program Implementation Plan**

Indicative Activities	2010				2011				2012				2013				2014				2015				2016				2017				Explanatory Notes
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>MFF Tranche Composition</b>																																	
Project-1 (P1)	\$71 million																																
Project-2 (P2)	\$79 million																																
<b>Pre-Approval Readiness Activities (P1 &amp; P2)</b>																																	
AIFRERMA Establishment																																	
DPR processing and approval																																	
Advance procurement of 1st year works																																	
Advance consultant/NGO engagement																																	
Emergency works for 2010 flood season																																	
Submission of PFR and Loan approval																																	
Loan signing																																	
<b>Outputs</b>																																	<b>Scope of P-2 to be detailed during P-1</b>
<b>A. FRERM Inst. and Knowledge base</b>																																	
<b>A1. FRERM planning</b>																																	
- Planning framework (Project 1)																																	
- State FRERM plan (Project 2)																																	
<b>A2. Data and Knowledge Base Devel.</b>																																	
- Training for data & knowledge base																																	
- Equipment																																	
- Morphology: prediction modeling																																	
- Morphology: long-term study																																	
- River surveys																																	
- Pilot flood modeling																																	
- Flood plain modeling																																	
- Action research and studies																																	
<b>A3. Institutional Strengthening</b>																																	
- AIFRERMA & WRD office building																																	
- Office equipment and furniture																																	
- Training on FRERM skills																																	
- FRERM design and implementation guidelines																																	
- MIS for FRERM Infra maintenance & adaptation																																	
<b>A4. Regional Knowledge</b>																																	
- Study tours																																	
- Conference contribution																																	
- Workshops and seminars																																	
<b>B. Comprehensive FRERM Programs</b>																																	
<b>B1. Nonstructural and CBFRM</b>																																	
- NGOs and facilitators																																	
- DMC strengthening, Community mobilization for construction monitoring & maintenance																																	
- CBFRM priority villages: mobilization & planning																																	
- CBFRM plan implementation																																	
<b>B2. Structure Works</b>																																	
<b>B2.1 Social and Env. Safeguards</b>																																	
- Safeguards PPMS/ IPPMS																																	
- LA&R: NGOs for impl. support, and Ext monitors																																	
- LA&R planning and implementation																																	
- Environmental monitoring and management																																	

For structural works of 3 subprojects (SPs)  
3 consultancy and 5 NGO packages (P1)  
Disbursed under "Sustainable Maintenance"

Scope of P-2 to be detailed during P-1

Strategy, plan framework (ISC to assist)  
State FRERM plan preparation

Modeling, GIS, etc. including intern'l training  
Ecosounder, GPS, engine boats, etc.  
(Initially supported under a separate TA)  
(Through local institute guided by ISC)  
(Through outsourced agent.)  
Supported under a separate TA  
(Through local institute guided by ISC)  
(In partnership with local research inst.)

New building for AIFRERMA, refurbishing WRD

FRERM, DRM, and project mgt training.  
(Initially supported under a separate TA)  
MIS for 3 SP areas (P1), and extension (P2)

US (Mississippi), Mekong, etc.  
Intern't seminar participation, state seminars  
Organized by ISC and PMC

3 NGOs for 3 districts selected by SIOs.  
Training of existing DMCs & volunteers, and  
group mobilization along work sites  
75 priority villages in P1.  
Measures identified by villages.

(PMC safeguards specialists to assist)  
2 NGOs for 3 SPs and ext monitor (P1)  
LA 61ha, 764 HHs affected in 3 SPs (P1)  
(PMC env. Specialists to assist)



**Table 2.6: Sector Roadmap – Institutional Action Matrix for Implementation during AIFRERMIP**

<b>Key Issues and Actions</b>	<b>Actions by</b>	<b>Timeframe</b>	<b>Performance Indicators</b>
<b>A. Policy and Planning Framework</b>			
a-1. State Water Policy drafted with incorporation of key principles for integrated FRERM, and finalized with stakeholder consultation.	SGOA	<i>Draft by 2009. Policy finalization by 2011.</i>	Policy incorporated with reflection of integrated FRERM, and then finalized.
a-2. Establish multidisciplinary AIFRERMA as a special purpose vehicle to implement integrated FRERM under the Program.	SGOA	<i>Cabinet decision in Jan. 2010</i>	AIFRERMA established as a lead organization to implement integrated FRERM.
b. Prepare integrated FRERM plan with interagency coordination and stakeholder consultation (as one of the first steps to implement State Water Policy).	AIFRERMA /WRD	Plan drafted by end of tranche -1	State FRERM plan drafted with stakeholder consultation and finalized
c. Establish ASDMA and district level authorities to provide basic institutional framework for disaster risk management	SGOA	<i>Established in 2009</i>	ASDMA and district level authorities established in all Program districts.
<b>B. Institutional Basis for Reliable and Effective FRERM</b>			
<b>1. WRD and AIFRERMA</b>			
a. Establish AIFRERMA with governing and executive bodies, multidisciplinary PMU, and 20% female representation among external staff *	SGOA/WRD	<i>December 2010</i>	AIFRERMA established (with FRERM, DM, and F&A directorates) and staff assigned
b. Set up a common advisory council comprising prominent experts to advise on FRERM operations	WRD and AIFRERMA	<i>(WRD council established) Starting 2010</i>	Council established and meet on annual and medium-term plans of AIFRERMA and WRD
c. Strengthen infrastructure quality control and management system with (i) FIDIC tender documents and stringent quality control; (ii) supervision consultants, and (iii) third party quality monitoring and auditing arrangements	AIFRERMA	During tranche-1	WRD's FRERM infrastructure quality attain high level of satisfaction by stakeholders and their organizations
d. Establish holistic guidelines for (i) community participation, (ii) planning and design, (iii) implementation and quality control, (iv) monitoring and evaluation, (v) nonstructural measures, and (vi) gender mainstreaming*, for replication to WRD's state wide operations	AIFRERMA	During tranche-1	FRERM operations to be provided following the improved guidelines, with progressively higher quality and stakeholder satisfaction
e. Prepare and implement capacity development plan, including 75% staff trained on gender issues*	AIFRERMA /WRD	During tranche-1	Capacities of project offices enhanced, and institutional performance starts to improve
f. Operationalize knowledge-based FRERM, with mandatory systematic surveys and analysis in planning and design, and monitoring and evaluation of completed works.	AIFRERMA	During tranche-1	Knowledge-based FRERM planning and M&E made operational
<b>2. Participatory Mechanisms</b>			
a. Issue staff instructions to provide FRERM operations in close consultation with DMCs with client orientation.	AIFRERMA	During tranche-1	Feedback to AIFRERMA from DMCs.

Key Issues and Actions	Actions by	Timeframe	Performance Indicators
<p>b. Issue staff instructions to ensure that FRERM operational plans will be included as a part of district and local level disaster management plans</p> <p>c. Establish DMCs in all Program subproject areas, to be extended to all districts, with 30% representation of women and vulnerable groups at block and GP levels *</p> <p>d. Issue staff instructions to implement poverty reduction and social strategy including gender action plan through PRIs</p>	<p>AIFRERMA</p> <p>ASDMA</p> <p>AIFRERMA</p>	<p>During tranche-1</p> <p>During tranche-1</p> <p>During tranche-1</p>	<p>FRERM plans are included in district disaster management plans with clear information to beneficiaries</p> <p>Local DMCs established and effectively participate in planning and implementation of FRERM operations</p> <p>Poverty and social strategy is reflected in DMC structure and disaster management plans</p>
<p><b>3. Local Research Organizations</b> Effective working relations are established with universities, institutes, and NGOs for undertaking regular investigation and planning, and knowledge management activities</p>	AIFRERMA	By 2011	Network of knowledge institutions mobilized for systematic survey, research and development of FRERM operations
<b>C. Sustainable FRERM Infrastructure Development and Maintenance</b>			
a. Develop structural flood and riverbank erosion protection works to renovate the existing embankment systems in the three subproject areas using innovative technologies	AIFRERMA	By 2017	Structural infrastructure developed and operational
b. Develop nonstructural measures including (i) awareness campaigns; (ii) local flood emergency response and related activities, (iii) advanced flood forecasting and warning (FFW) system; (iv) advance erosion prediction.	AIFRERMA	By 2017	Non-structural programs developed and operational
c. Establish FRERM infrastructure asset MIS for performance monitoring, planning, and implementation of maintenance	AIFRERMA	Framework prior to approval, MIS during tranche-1	Data collection and entry systems in place and reports produced and distributed to managers.
d. Institutionalize transparent maintenance work implementation, with disclosure of fund allocation in each field office, and list of works and amounts at district and work sites.	AIFRERMA	During tranche-1	Transparent consultation and implementation system established and made operational
e. Explore and pilot test multi-year maintenance contracts with private contractors linked with MIS.	AIFRERMA	Develop contracts during tranche-1, and pilot test during tranche-2	Infrastructure maintenance contracts implemented with satisfactory performance
f. WRD to progressively move towards introducing the measures in c. and d. above in the schemes within the state.	WRD	During tranche-2	Systems for infrastructure performance monitoring and transparent maintenance work management established
g. Ensure full maintenance funding for AIFRERMA schemes, while progressively enhancing maintenance budget from 25% of requirement at present towards full requirements	WRD, Finance	2017	Annual nonplan maintenance budget allocation substantially meets the requirements

Key Issues and Actions	Actions by	Timeframe	Performance Indicators
h. Pursue FRERM infrastructure rehabilitation and maintenance through centrally assisted schemes	WRD, State, GOI	<i>Initiated in 2008</i>	DPRs prepared, approved, and implemented with improved infrastructure maintenance
i. Establish and operationalize beneficiary participation systems with (i) mobilization of NREG programs for embankment maintenance where appropriate, and (ii) mobilization of embankment platform beneficiaries and adjacent communities for routine maintenance, with 20% female representation	AIFRERMA	During tranche-1	Beneficiary mobilization systems made operational for embankment maintenance
<b>D. institutional reforms and Safeguards</b>			
a. AIFRERMA to have social and environmental unit to look after safeguards issues	AIFRERMA /WRD	<i>December 2010</i>	Social and environmental unit established and made functional effectively
b. AIFRERMA and WRD to ensure transparency of its operation by (i) setting up organizational website with annual and mid-term programs, and posting of procurement information there, along with posting of work information at work sites; and (ii) issuing annual reports highlighting the institutional development actions and programs with sufficient details	AIFRERMA and WRD	AIFRERMA starting year-1, WRD during tranche-2	Awareness survey under benefit monitoring and evaluation
c. AIFRERMA to put into operation external technical auditing for the civil works under the Program (to be institutionalized towards the end of implementation period)	AIFRERMA	During tranche-1	FRERM infrastructure quality attains high level of stakeholder participation, with operationalization of external technical audit
d. AIFRERMA to put into place, with awareness campaign, grievance mechanisms with assignment of chief vigilance officer	AIFRERMA	During tranche-1	Effective grievance reporting and redressal mechanisms are in place.
e. WRD will progressively introduce the above measures taken by AIFRERMA to its other FREM schemes	WRD	During tranche-2	

\* These actions have been included in the Gender Action Plan (GAP) that has been developed in line with the Government of India's 11<sup>th</sup> Five-year plan and Assam Women's Act 2005 and its stated commitment to gender mainstreaming in all sectors and will be implemented as feasible.

AIFRERMA = Assam Integrated Flood and Riverbank Erosion Risk Management Agency; ASDMA = Assam State Disaster Management Authority; DDMA = district disaster management authority; DMC = disaster management committee, DPR = detailed project report, FFW = flood forecasting and warning, FRERM = flood and river erosion risk management, MIS = management information system, M&E = monitoring and evaluation, NGO = nongovernment organization, PMU = project management unit, PRI = panchayat raj institution, REG = rural employment guarantee, SGOA = state government of Assam; WRD = Water Resources Department

## II. PROJECT MANAGEMENT ARRANGEMENTS

### A. Project Stakeholders – Roles and Responsibilities

Project Stakeholders	Management Roles and Responsibilities
<ul style="list-style-type: none"> <li>➤ AIFRERMA (Executing Agency)</li> </ul>	<ul style="list-style-type: none"> <li>• Establish PMU with required staff and recruiting consultants</li> <li>• Prepare overall implementation plan and annual project budget</li> <li>• Guide the preparation of DPRs and coordinate for clearance</li> <li>• Prepare documents for the individual project approval including safeguards and bidding documents</li> <li>• Monitor and guide the activities of (a) the subproject implementation office (SIOs) on subproject planning, implementation, maintenance and adaptation, and (b) Water Resources Department (WRD) on data and knowledge base strengthening</li> <li>• Ensure that the SIOs meet all social and environmental safeguards aspects and facilitate the implementation of the respective plans</li> <li>• Establish and maintain asset inventory and management information system (MIS) for infrastructure performance</li> <li>• Monitor overall project progress and evaluate benefits and social and environmental impacts through investment program performance monitoring system (IPPMS) and project performance monitoring system (PPMS)</li> <li>• Arrange staff training programs</li> <li>• Manage procurement, consulting and NGO services, and loan disbursement</li> <li>• Quality assurance of works, consultants, and staff</li> <li>• Maintain financial accounts, and ensure timely submission of withdrawal applications to ADB, conducting financial audits as per agreed timeframe and taking recommended actions</li> <li>• Establish consultation processes with beneficiaries and civil society representatives in all stages of project design and implementation;</li> <li>• Public disclosure of project outputs;</li> <li>• Complying with all loan covenants including sector roadmap – institutional action matrix (Schedule 1 of FFA); and</li> <li>• Preparing regular periodic progress reports, and project completion reports and their timely submission to ADB.</li> </ul>
<ul style="list-style-type: none"> <li>➤ Subproject Implementation Offices (SIOs)</li> </ul>	<ul style="list-style-type: none"> <li>• Work closely with Disaster Management Committees (DMCs) to establish a participatory decision making system through regular meetings</li> <li>• Undertake subproject planning including DPR preparation and detailed design process</li> <li>• Undertake DMC institutional strengthening and preparation of DMC level community disaster risk management plans in coordination with DDMA</li> <li>• Implement safeguards actions following the relevant plans</li> <li>• Execute civil works</li> <li>• Coordinate for and/or implement nonstructural FRERM measures including those related to adaptive agriculture and community livelihoods</li> <li>• Undertake maintenance of FRERM infrastructure, with the mobilization of local labor and resources for routine maintenance works; and</li> <li>• Arrange training programs for the staff including NGOs, and DMCs.</li> </ul>
<ul style="list-style-type: none"> <li>➤ Water Resources Department (WRD)</li> </ul>	<ul style="list-style-type: none"> <li>• Provide staff support to the PMU for undertaking (a) planning and design, (b) nonstructural FRERM measures, (c) research and development, (d) survey, monitoring and evaluation, (e) data management, GIS and drafting, and (f) quality control; and</li> <li>• Provide inputs to implement the activities of the designated subjects</li> </ul>

<b>Project Stakeholders</b>	<b>Management Roles and Responsibilities</b>
➤ SGOA/ SGOA (Dept. of Finance)	<ul style="list-style-type: none"> <li>• Signing of Project Agreement</li> <li>• Allocation and release of funds for the project including counterpart funds</li> <li>• Monitoring of investment program implementation and providing respective coordination and facilitation</li> <li>• Ensuring projects' sustainability post implementation stage</li> </ul>
➤ Asian Development Bank	<ul style="list-style-type: none"> <li>• Assist AIFRERMA and PMU in providing timely guidance at each stage of the project for smooth implementation in accordance the agreed implementation arrangements;</li> <li>• Review all documents that require ADB approval;</li> <li>• Conduct periodic loan review missions, a mid-term review, a completion mission for each project under the MFF, and program completion mission;</li> <li>• Ensure compliance of all loan covenants (reforms, social- environmental safeguards, financial, economic, and others);</li> <li>• Timely process withdrawal applications and disburse eligible funds;</li> <li>• Ensure the compliance of financial audit recommendations;</li> <li>• Regularly update the project performance review reports;</li> <li>• Regularly post on ADB web the updated project information documents for public disclosure,</li> </ul>
➤ Ministry of Finance, Government of India	<ul style="list-style-type: none"> <li>• Signing the FFA and the Loan Agreement for each Project;</li> <li>• Monitoring of the investment program implementation and providing respective coordination and facilitation;</li> <li>• Timely disbursement of ADB funds to SGOA;</li> <li>• Endorsing to ADB the authorized staff with approved signatures for withdrawal applications; and</li> <li>• Processing and submitting to ADB any request, when required, for reallocation of loan proceeds.</li> </ul>

## **B. Key Persons Involved in Implementation**

<b>Executing Agency</b>	
AIFRERMA	Ravi Shankar Prasad IAS Chief Executive Officer Telephone No +91-361-223 7259 <a href="mailto:r1ravi@gmail.com">r1ravi@gmail.com</a> F Block, Secretariat, Dispur Guwahati – 781 006, Assam (India)
Project Management Unit	xxxxxxxxxx Executive Officer, Telephone No +91-361-223 7259 <a href="mailto:xxxxx@xxxx.com">xxxxx@xxxx.com</a> House No. 7 Tripura Road, Beltola Guwahati – 781 028, Assam (India)
<b>Asian Development Bank</b>	
Division Director	T. Matsuo Director SANS, South Asia Regional Department (SARD) Telephone No: +63-2-632-6765; Email address: <a href="mailto:tmatsuo@adb.org">tmatsuo@adb.org</a> 6 ADB Avenue, Mandaluyong City, 1600 Metro Manila, Philippine
Mission Leader	Kenichi Yokoyama Principal Water Resources Specialist, SANS/SARD Telephone No: +63-2-632-5683 Email address: <a href="mailto:kyokoyama@adb.org">kyokoyama@adb.org</a> 6 ADB Avenue, Mandaluyong City, 1600 Metro Manila, Philippine

### **C. Facility Organizational Structure**

10. The State has established AIFRERMA as the Executing Agency (EA) for the Facility. AIFRERMA is a special purpose vehicle registered under the Societies Act, 1860 anchored to the State Water Resources Department (WRD) and associated with the Assam State Disaster Management Authority (ASDMA). The AIFRERMA will be headed by a Chief Executive Officer at a rank of no less than an additional secretary. It will be responsible for establishing and making operational the integrated flood and riverbank erosion risk management (FRERM) addressing multi-disciplinary agendas to manage the flooding and riverbank erosion.

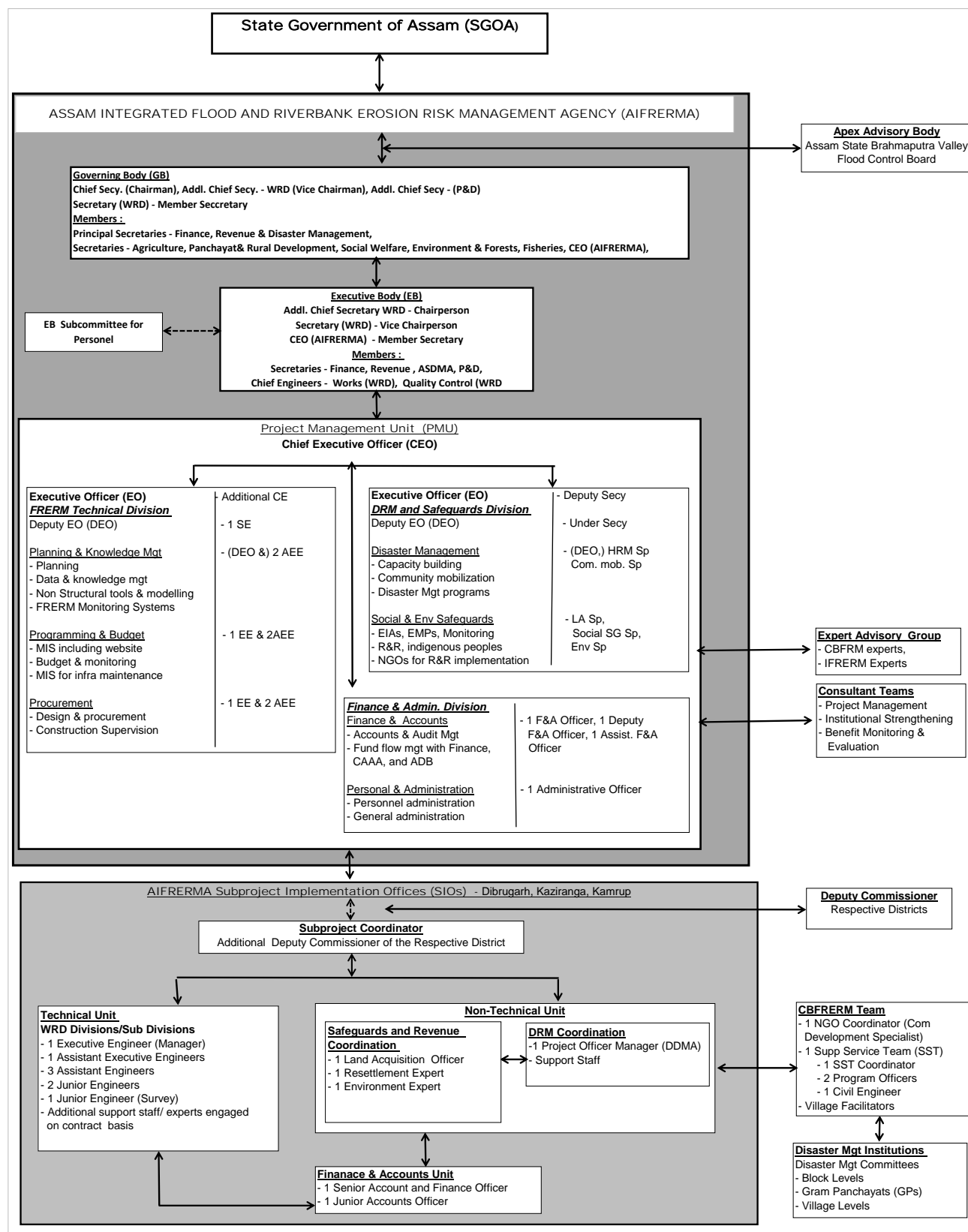
11. AIFRERMA has the Governing Body (GB) which will provide policy guidance on matters related to the Facility and individual projects therein. Its Executive Body (EB) will provide program implementation and coordination guidance including staff assignments in AIFRERMA. Within this framework, a multi-disciplinary Project Management Unit (PMU) is established and is responsible for planning, design, implementation, physical and financial monitoring, and all other administration and management activities of the Agency consistent with policy and management directions issued by the Governing Body (GB) and Executive Body (EB) of AIFRERMA. In the field level, EA is supported by subproject implementation offices (SIOs), comprising (i) technical team, and (ii) non-technical team. For each SIO, Additional Deputy Commissioner of the respective district will be assigned as subproject coordinator. SIOs will manage project implementation as per the directions received from PMU. SIOs are also supported with assistance from district disaster management authorities (DDMAs), local disaster management committees (DMCs), research institutions, NGOs, consultants and contractors. The proposed staff composition and institutional structure supporting AIFRERMA (at full implementation stage) is shown in Figure 3.1.

12. At the State level WRD will, on a need basis, provide staff support to the PMU (at the level of superintending engineers, executive engineers and assistant (executive) engineers) for undertaking (i) planning and design, (ii) nonstructural FRERM measures, (iii) research and development, (iv) survey, monitoring and evaluation, (v) data management, GIS and drafting, and (vi) quality control, and provide inputs to implement the activities of the designated subjects.

13. Assistance will be provided to the PMU by multidisciplinary teams of consultants for institutional strengthening (ISC) and project management consultants (PMC), for monitoring, capacity development, quality control, and project management. An expert advisory group will also be established to allow interchange of ideas and information from renowned experts of FRERM, heads of State departments, community focused and user group stakeholders to support the PMU from time to time in guiding the project. The proposed capacity development plan for the Project institutions under Project 1 is included as supplementary appendix in the linked documents to the RRP.



Figure 3.1: AIFRERMIP Organizational Structure



### III. COSTS AND FINANCING

#### A. Overview

14. The AIFRERMIP is estimated to cost \$150 million (Table 4.1). The Government has requested an MFF in an amount up to \$120 million from ADB's ordinary capital resources (OCR) to finance a part of the AIFRERMIP (Table 4.2) that will consist of two (or more if needed) tranches.

**Table 4.1: Project Investment Plan (\$ million)**

Item	Amount <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>	
Component A. Development of FRERM Planning, Institutional and Knowledge Bases	11.2
Component B. Comprehensive FRERM Programs	
(a) Nonstructural and CBFMR Measures with DMCs	2.2
(b) Structural Measures	91.1
(c) Sustainable Infrastructure Maintenance and Adaptation	5.9
Component C. Multidisciplinary Program Management Systems	10.3
<b>Subtotal (A)</b>	<b>120.7</b>
<b>B. Contingencies<sup>c</sup></b>	<b>17.2</b>
<b>C. Financing Charges During Implementation<sup>d</sup></b>	<b>12.1</b>
<b>Total (A+B+C)</b>	<b>150.0</b>

<sup>a</sup> Including taxes and duties of \$14.0 million to be financed from the Government and ADB loan resources.

<sup>b</sup> In mid 2009 prices.

<sup>c</sup> Physical contingencies are computed at 12.5%. Price contingencies computed at 0.8% of foreign exchange costs and 5.0% for local currency cost per annum, including provisions for exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Includes interest and commitment charges. Interest during construction has been computed at the five-year forward London interbank offered rate (LIBOR) plus a spread of 0.30%. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank estimates.

**Table 4.2: Financing Plan**

Source	Amount (\$ million)	Percent of Total
Asian Development Bank	120.0	80
Government	30.0	20
<b>Total</b>	<b>150.0</b>	<b>100</b>

Source: Asian Development Bank estimates.

15. The tranche 1 project cost is estimated at \$71.1 million. This includes taxes and duties of \$7.7 million to be financed by the Government and ADB. The Government has requested a loan in an amount of \$56.9 million and has submitted the relevant periodic financing request (PFR) to ADB. The Government will finance a balance of \$14.2 million as counterpart fund (Table 4.3).

**Table 4.3: Cost Estimates and Financing Plan for Project 1 (\$ million)**

Item	ADB	Government	Total
I. Project Cost including Contingencies			
A. Institutional and Knowledge Base Development	5.1	0.7	5.8
B. Comprehensive FRERM Programs	47.8	6.2	54.0
C. Project Management and Institutional Strengthening	4.0	1.8	5.8
Taxes and Duties <sup>a</sup>	(3.1)	(4.6)	(7.7)
<b>Subtotal</b>	<b>56.9</b>	<b>8.7</b>	<b>65.6</b>
II. Financing Charges	-	5.5	5.5
<b>Total</b>	<b>56.9</b>	<b>14.2</b>	<b>71.1</b>
<b>Financing Share (%)</b>	<b>80%</b>	<b>20%</b>	<b>100%</b>

<sup>a</sup> Included in the component cost and financing plan.

Source: Asian Development Bank estimates.

## B. Detailed Cost Estimates by Expenditure Category

**Table 4.4: Detailed Cost Estimates by Expenditure Category (Facility)<sup>a</sup>**

Item	IN Rs Million	US \$ Million	% Base Costs
<b>I. Investment Costs</b>			
A. Civil Works	2,166	48.3	40
B. Civil Works (Maintenance)	265	5.9	4.9
C. Civil Works (Govt)	17	0.4	0.3
D. Construction Materials	1,778	39.7	32.9
E. Resttlement	46	1.0	0.8
F. Land Acquisition	130	2.9	2.4
G. Equipment	81	1.8	1.5
H. Vehicles	15	0.3	0.2
<b>I. Capacity Development</b>			
Training/Workshops	78	1.8	1.5
Study Tours	8	0.2	0.2
<b>Subtotal Capacity Development</b>	87	1.9	1.6
J. Survey, Research, and Investigation	159	3.6	3.0
<b>K. Consultants</b>			
International Consultants	167	3.7	3.1
Domestic Consultants	116	2.6	2.2
Consultant Studies and Training	11	0.2	0.2
Consultant Operational Costs	40	0.9	0.7
M&E Consultants	8	0.2	0.2
<b>Subtotal Consultants</b>	342	7.6	6.3
L. NGOs and Local Institutes	35	0.8	0.7
M. Project Management	171	3.8	3.1
<b>Total Investment Costs</b>	5,292	118.1	97.8
<b>II. Recurrent Costs</b>			
O&M Project Institutions	117	2.6	2.2
<b>Total Recurrent Costs</b>	117	2.6	2.2
<b>Total BASE COSTS</b>	5,409	120.7	100.0
Physical Contingencies	610	13.6	11.3
Price Contingencies	910	3.6	3.0
<b>Total PROJECT COSTS</b>	6,929	137.9	114.3
Interest During Construction	583	11.7	9.7
Commitment Charges	18	0.4	0.3
<b>TOTAL</b>	7,530	150.0	124.3

M&E = monitoring and evaluation, NGO = nongovernment organization, O&M = operation and maintenance

<sup>a</sup> In mid-2009 prices.

**Table 4.5: Detailed Cost Estimates by Expenditure Category (Project 1) <sup>a</sup>**

<b>Item</b>	<b>IN Rs Million</b>	<b>US \$ Million</b>	<b>% Base Costs</b>
<b>I. Investment Costs</b>			
A. Civil Works	891	19.9	34.3
B. Civil Works (Maintenance)	63	1.4	2.4
C. Civil Works (Govt)			
D. Construction Materials	1,029	23.0	39.6
E. Resttlement	28	0.6	1.0
F. Land Acquisition	103	2.3	4.0
G. Equipment	34	0.8	1.4
H. Vehicles	12	0.3	0.5
<b>I. Capacity Development</b>			
Training/Workshops	33	0.7	1.2
Study Tours	4	0.1	0.2
<b>Subtotal Capacity Development</b>	37	0.8	1.4
J. Survey, Research, and Investigation	29	0.6	1.0
<b>K. Consultants</b>			
International Consultants	117	2.6	4.5
Domestic Consultants	68	1.5	2.6
Consultants Studies and Surveys	9	0.2	0.3
Consultant Operational Costs	24	0.5	0.9
M&E Consultants	5	0.1	0.2
<b>Subtotal Consultants</b>	222	5.0	8.6
L. NGOs and Local Institutes	17	0.4	0.7
M. Project Management	73	1.6	2.8
<b>Total Investment Costs</b>	2,553	57.0	98.1
<b>II. Recurrent Costs</b>			
O&M Project Institutions	50	1.1	1.9
<b>Total Recurrent Costs</b>	50	1.1	1.9
<b>Total BASE COSTS</b>	2,604	58.1	100.0
Physical Contingencies	302	6.7	11.5
Price Contingencies	158	0.8	1.4
<b>Total PROJECT COSTS</b>	3,063	65.6	112.9
Interest During Construction	246	5.3	9.1
Commitment Charges	7	0.2	0.3
<b>TOTAL</b>	3,317	71.1	122.4

M&E = monitoring and evaluation, NGO = nongovernment organization, O&M = operation and maintenance

<sup>a</sup> In mid-2009 prices.

### C. Detailed Cost Estimates by Financier

Table 4.6: Detailed Cost Estimates by Financier (Facility) <sup>a</sup>

Item	INRs Million			US\$ Million			% Govt	% ADB	Taxes & Duties
	Govt	ADB	Total	Govt	ADB	Total			
<b>I. Investment Costs</b>									
A. Civil Works	225	2,611	2,836	4.4	51.5	56.0	7.9	92.1	6.3
B. Civil Works (Maintenance)	33	299	333	0.6	5.5	6.2	10.0	90.0	0.7
C. Civil Works (Govt)	20	0	20	0.4	0.0	0.4	100.0	0.0	0.1
D. Construction Materials	178	2,066	2,244	3.6	42.0	45.6	7.9	92.1	4.7
E. Resttlement	0	56	56	0.0	1.2	1.2	0.0	100.0	0.1
F. Land Acquisition	155	0	155	3.2	0.0	3.2	100.0	0.0	0.0
G. Equipment	5	93	98	0.1	1.9	2.0	5.0	95.0	0.3
H. Vehicles	1	17	18	0.0	0.4	0.4	5.0	95.0	0.0
<b>I. Capacity Development</b>									
Training/Workshops	0	101	101	0.0	2.0	2.0	0.0	100.0	0.2
Study Tours	0	10	10	0.0	0.2	0.2	0.0	100.0	0.0
<b>Subtotal Capacity Development</b>	0	112	112	0.0	2.2	2.2	0.0	100.0	0.2
J. Survey, Research, and Investigation	43	169	212	0.8	3.2	4.1	20.3	79.7	0.8
<b>K. Consultants</b>									
International Consultants	35	171	205	0.7	3.5	4.2	16.9	83.1	0.7
Domestic Consultants	30	116	146	0.6	2.3	2.9	20.3	79.7	0.6
Consultants Studies and Surveys	3	10	13	0.1	0.2	0.3	20.3	79.7	0.1
Consultant Operational Costs	10	40	50	0.2	0.8	1.0	20.3	79.7	0.2
M&E Consultants	2	9	11	0.0	0.2	0.2	20.3	79.7	0.0
<b>Subtotal Consultants</b>	79	345	425	1.6	7.0	8.6	18.6	81.4	1.6
L. NGOs and Local Institutes	4	40	44	0.1	0.8	0.9	10.0	90.0	0.1
M. Project Management	0	224	224	0.0	4.3	4.3	0.0	100.0	0.4
<b>Total Investment Costs</b>	744	6,032	6,776	15.0	120.0	135.0	11.1	88.9	15.5
<b>II. Recurrent Costs</b>									
O&M Project Institutions	153	0	153	3.0	0.0	3.0	100.0	0.0	0.4
<b>Total Recurrent Costs</b>	153	0	153	3.0	0.0	3.0	100.0	0.0	0.4
<b>Total BASE COSTS</b>									
Interest During Construction	583	0	583	11.7	0.0	11.7	100.0	0.0	0.0
Commitment Charges	18	0	18	0.4	0.0	0.4	100.0	0.0	0.0
<b>Total PROJECT COSTS</b>	1,499	6,032	7,530	30.0	120.0	150.0	20.0	80.0	15.8

ADB = Asian Development Bank; M&E = monitoring and evaluation, NGO = nongovernment organization, O&M = operation and maintenance

<sup>a</sup> In mid-2009 prices. Taxes and duties will be financed by the borrower and ADB.

Table 4.6: Detailed Cost Estimates by Financier (Project 1)

Item	INRs Million			US\$ Million			% Govt	% ADB	Taxes & Duties
	Govt	ADB	Total	Govt	ADB	Total			
<b>I. Investment Costs</b>									
A. Civil Works	64	1,012	1,076	1.4	21.4	22.7	6.0	94.0	2.7
B. Civil Works (Maintenance)	7	63	70	0.1	1.3	1.4	10.0	90.0	0.2
C. Civil Works (Govt)	16	0	16	0.4	0.0	0.4	100.0	0.0	0.0
D. Construction Materials	83	1,108	1,192	1.8	24.2	26.0	7.0	93.0	2.9
E. Resttlement	0	33	33	0.0	0.7	0.7	0.0	100.0	0.1
F. Land Acquisition	118	0	118	2.5	0.0	2.5	100.0	0.0	0.0
G. Equipment	2	37	39	0.0	0.8	0.8	5.0	95.0	0.1
H. Vehicles	1	13	13	0.0	0.3	0.3	5.0	95.0	0.0
<b>I. Capacity Development</b>									
Training/Workshops	0	40	40	0.0	0.8	0.8	0.0	100.0	0.1
Study Tours	0	4	4	0.0	0.1	0.1	0.0	100.0	0.0
<b>Subtotal Capacity Development</b>	0	44	44	0.0	0.9	0.9	0.0	100.0	0.1
J. Survey, Research, and Investigator	7	27	34	0.1	0.6	0.7	20.3	79.7	0.1
<b>K. Consultants</b>									
International Consultants	23	114	137	0.5	2.4	2.9	16.9	83.1	0.5
Domestic Consultants	16	64	80	0.3	1.3	1.7	20.3	79.7	0.3
Consultants Studies and Surveys	2	8	11	0.0	0.2	0.2	20.3	79.7	0.0
Consultant Operational Costs	6	22	28	0.1	0.5	0.6	20.3	79.7	0.1
M&E Consultants	1	4	5	0.0	0.1	0.1	20.3	79.7	0.0
<b>Subtotal Consultants</b>	48	213	261	1.0	4.5	5.5	18.5	81.5	1.0
L. NGOs and Local Institutes	2	18	21	0.0	0.4	0.4	10.0	90.0	0.0
M. Project Management	0	87	87	0.0	1.8	1.8	0.0	100.0	0.2
<b>Total Investment Costs</b>	349	2,655	3,004	7.5	56.9	64.4	11.6	88.4	7.6
<b>II. Recurrent Costs</b>									
O&M Project Institutions	59	0	59	1.3	0.0	1.3	100.0	0.0	0.2
<b>Total Recurrent Costs</b>	59	0	59	1.3	0.0	1.3	100.0	0.0	0.2
<b>Total BASE COSTS</b>	408	2,655	3,063	8.7	56.9	65.6	13.3	86.7	7.7
Interest During Construction	246	0	246	5.3	0.0	5.3	100.0	0.0	0.0
Commitment Charges	7	0	7	0.2	0.0	0.2	100.0	0.0	0.0
<b>Total PROJECT COSTS</b>	662	2,655	3,317	14.2	56.9	71.1	20.0	80.0	7.7

ADB = Asian Development Bank; O&M = operation and maintenance

<sup>a</sup> In mid-2009 prices. Taxes and duties will be financed by the borrower and ADB.

#### D. Allocation and Withdrawal of Loan Proceeds

16. **Use of Loan Proceeds.** The Facility will be provided in line with the provisions of the MFF modality. The MFF is particularly well-suited for the Facility because (i) the MFF structure allows the flexibility to AIFRERMA in its investment decisions based on the readiness of investments and other activities in the three selected subproject areas which will dictate disbursement projections; and (ii) the experience and performance of the Project 1 can guide the design and implementation of Project 2, through the incorporation of lessons learned and new technologies demonstrated. Further, the Facility supports the institutional strengthening of AIFRERMA and WRD in line with the evolving reforms, thus building a long-term partnership between SGOA and ADB.

17. The AIFRERMIP will be financed under the MFF in accordance with the Framework Financing Agreement (FFA) that was signed between the Government of India and ADB. The MFF may extend two (or more if needed) loans (or Projects) to implement the Investment Program, subject to submission of the related periodic financing request (PFR) by the Government and signing of the related loan agreements. Pursuant to the provisions of the signed FFA, the Borrower has submitted and sign the periodic financing request for the Project 1 (PFR1).

18. **OCR Loan Terms.** The provisions of ordinary operations loan regulations applicable to ADB's London interbank offered rate (LIBOR)-based lending facility drawn from ADB's OCR, dated 1 July 2001, will apply to each loan under the Facility, subject to any modifications that may be included under each loan agreement. The specific terms of each loan will be based on the related PFR, with interest to be determined in accordance with ADB's LIBOR-based lending facility. The Government will bear the foreign exchange risk. The Government may choose a currency (from among several eligible currencies) and interest rate regime for each loan.

19. **Framework Financing Agreement (FFA).** The FFA records the scope, financing, and execution of the AIFRERMIP with the full set of assurances on cross-cutting themes covering safeguards, institutional reforms, anticorruption, financial management, procurement, disbursement, and monitoring and evaluation. Before ADB accepts the PFR, the Government of India and the SGOA will ensure full compliance with the terms and conditions of the FFA.

20. **Periodic Financing Request.** Two (or more if required) tranches or projects will be extended under the MFF to support the phased implementation of investments in the three subprojects and the state level institutional strengthening under the AIFRERMIP. Each individual tranche will not be less than \$20 million.

21. **Project 1.** Project 1 is estimated to cost the equivalent of \$71.1 million (Table 4.3). This includes taxes and duties of \$7.7 million and equivalent to be financed by the Government and ADB. The first PFR for Tranche 1 amounting to \$56.9 million (from ADB's OCR) will cover part of the cost of Project-1. This also includes the cost of implementing environment management plan, resettlement plan (excluding land acquisition) and indigenous peoples development plan, as required. The ADB loan will have a term of 25 years, including a grace period of 7 years (given the 7 year implementation period of the three subproject embankment systems), with interest rate to be determined according to ADB's LIBOR-based lending facility, a commitment charge of 0.15% per annum, and such other terms and conditions as agreed in the FFA, and the loan and project agreements. Loan proceeds for Project 1 have been allocated as detailed in Schedule 3 of the Loan Agreement. The Loan proceeds will be withdrawn from the Loan amount on the basis of the percentages provided in Table 4.7.

**Table 4.7 Allocation and Withdrawal of Loan Proceeds (\$ million)**

CATEGORY			ADB FINANCING
No.	Item under Project 1	Amount Allocated \$	Percentage & Basis for Withdrawal from Loan Amount
1	Works		
1A	Civil Works	19.0	94% of total expenditure claimed
1B	Civil works (maintenance)	1.3	90% of total expenditure claimed
2	Vehicles and Equipment	1.0	95% of total expenditure claimed
3	Materials	21.5	93% of total expenditure claimed
4	Resettlement	0.6	100% of total expenditure claimed
5	Training/ Fellowships	0.8	100% of total expenditure claimed
6	Consulting Services		
6A	Survey*	0.5	100% of total expenditure claimed
6B	NGO Services *	0.4	100% of total expenditure claimed
6B	Other Consulting Services *	4.1	100% of total expenditure claimed
7	Incremental Cost	1.7	100% of total expenditure claimed
8	Unallocated	6.0	
	<b>Total</b>	<b>56.9</b>	

❖ Excluding taxes and duties imposed within India

22. Withdrawals of Loan proceeds under Tranche 1 are expected to be completed by 30 September 2014. No disbursement from the loan account will be requested or made later than 31 December 2014, or any other date as mutually agreed between India and ADB.

23. **Project 2.** The AIFRERMA with the assistance of the project management consultants will prepare PFR-2 in accordance with the provision of Schedule 4 of FFA. At that time the AIFRERMA will assess the implementation progress and performance of the ongoing Project 1. This will cover the roadmap actions, progress in achieving the technology and capacity development and other targets, lessons, and compliance in safeguards management. On the basis of these, specific measures to enhance the effectiveness of the interventions will be identified and incorporated into the Project 2. The AIFRERMA is also to prepare and process the detailed project reports (DPRs) of the concerned interventions under the Project 2 to be implemented in the three subprojects. ADB will provide advice to the SGOA and the Government of India while the work is being carried out. After appraisal mission is completed by ADB, SGOA, and the Government, the Government will submit the PFR2 for further processing and approval, including loan negotiations and signing.



## E. Detailed Cost Estimates by Outputs

Table 4.8: Detailed Cost Estimates by Outputs (Facility)

	COPONENT A				COMPONENT B			COMPONENT C			Physical Contingencies		
	Integrated FRER Planing Framework	Data and Knowledge Base	Institutions Bases	Knowledge Sharing and Networking	Consultants (Inst Strengthening)	Non-Structural and CBFMR Measures with DMCs	Structural Measures	Sustainable Infrastructure Maintenance and Adaptation	Project Management Office	Consultants (Project Management and M&E)	Total	%	Amount
<b>I. Investment Costs</b>													
A. Civil Works	-	-	1.772	-	-	0.320	46.257	-	-	-	48.349	12.5	6.044
B. Civil Works (Maintenance)	-	-	-	-	-	-	-	5.914	-	-	5.914	-	-
C. Civil Works (Govt)	-	-	-	-	-	-	0.375	-	-	-	0.375	12.5	0.047
D. Construction Materials	-	-	-	-	-	-	39.678	-	-	-	39.678	12.5	4.960
E. Resttlement	-	-	-	-	-	-	1.027	-	-	-	1.027	10.0	0.103
F. Land Acquisition	-	-	-	-	-	-	2.900	-	-	-	2.900	10.0	0.290
G. Equipment	-	0.539	0.546	-	-	-	0.730	-	-	-	1.815	6.0	0.108
H. Vehicles	-	-	0.341	-	-	-	-	-	-	-	0.341	10.0	0.034
<b>I. Capacity Development</b>													
Training/Workshops	0.004	0.357	0.243	0.055	-	1.091	0.002	-	-	-	1.752	10.0	0.175
Study Tours	-	-	-	0.180	-	-	-	-	-	-	0.180	10.0	0.018
<b>Subtotal Capacity Development</b>	0.004	0.357	0.243	0.235	-	1.091	0.002	-	-	-	1.932	10.0	0.193
J. Survey, Research and Investigation (Local Institutes)	0.450	2.723	0.220	-	-	-	0.167	-	-	-	3.560	10.0	0.356
<b>K. Consultants</b>													
International Consultants (Inst Strengthening)	-	-	-	-	2.336	-	-	-	-	-	2.336	10.0	0.234
International Consultants (Project Mgt)	-	-	-	-	-	-	-	-	-	1.399	1.399	10.0	0.140
National Consultants (IS)	-	-	-	-	0.830	-	-	-	-	-	0.830	10.0	0.083
National Consultants (PM)	-	-	-	-	0.006	-	-	-	-	1.758	1.764	10.0	0.176
Consultant Training and Studies (IS)	0.030	0.046	0.029	0.043	-	-	-	-	-	-	0.148	10.0	0.015
Consultant Training and Studies (PM)	-	-	0.016	0.012	-	0.058	0.003	-	-	-	0.089	10.0	0.009
Consultant Operational Costs (IS)	-	-	-	-	0.382	-	-	-	-	-	0.382	10.0	0.038
Consultant Operational Costs (PM)	-	-	-	-	-	-	-	-	-	0.510	0.510	10.0	0.051
M&E Consultants	-	-	-	-	-	-	-	-	-	0.186	0.186	10.0	0.019
<b>Subtotal onultants</b>	0.030	0.046	0.045	0.055	3.554	0.058	0.003	-	-	3.853	7.644	10.0	0.764
L. NGOs and Local Institutes	-	-	-	-	-	0.773	-	-	-	-	0.773	10.0	0.077
M. Project Management	-	-	-	-	-	-	-	-	3.806	-	3.806	10.0	0.381
<b>Total Investment Costs</b>	0.484	3.665	3.167	0.290	3.554	2.242	91.139	5.914	3.806	3.853	118.115	11.3	13.357
<b>II. Recurrent Costs</b>													
B. O&M PMO	-	-	-	-	-	-	-	-	2.613	-	2.613	10.0	0.261
<b>Total Recurrent Costs</b>	-	-	-	-	-	-	-	-	2.613	-	2.613	10.0	0.261
<b>Total BASELINE COSTS</b>	0.484	3.665	3.167	0.290	3.554	2.242	91.139	5.914	6.419	3.853	120.727	11.3	13.618
Physical Contingencies	0.048	0.367	0.361	0.029	0.355	0.232	11.199	-	0.642	0.385	13.618	-	-
<b>Price Contingencies</b>													
<b>Inflation</b>													
Local	0.108	0.585	0.283	0.019	0.178	0.403	7.308	1.308	1.266	0.392	11.850	-	-
Foreign	0.003	0.017	0.025	0.006	0.039	0.001	1.201	0.030	0.014	0.023	1.358	-	-
<b>Subtotal Inflation</b>	0.110	0.602	0.307	0.025	0.216	0.405	8.509	1.338	1.280	0.415	13.208	-	-
Devaluation	-0.089	-0.480	-0.228	-0.016	-0.139	-0.331	-5.880	-1.088	-1.047	-0.318	-9.616	-	-
Subtotal Price Contingencies	0.021	0.122	0.080	0.010	0.078	0.074	2.628	0.250	0.233	0.097	3.593	9.8	0.353
<b>Total PROJECT COSTS</b>	0.554	4.154	3.608	0.329	3.987	2.548	104.966	6.164	7.293	4.336	137.938	10.1	13.972
Taxes	0.112	0.770	0.471	0.017	0.720	0.269	11.100	0.740	0.789	0.827	15.814	10.0	1.587
Foreign Exchange	0.066	0.886	1.128	0.216	2.196	0.052	48.466	0.740	0.442	1.340	55.532	10.7	5.966

Table 4.9: Detailed Cost Estimates by Outputs (Project 1)

	COMPONENT A				COMPONENT B			COMPONENT C			Physical Contingencies		
	Integrated FRERM Planning Framework	Data and Knowledge Base	Institutions Bases	Knowledge Sharing and Networking	Consultants (Inst Strengthening)	Non-Structural and CBFMR Measures with DMCs	Structural Measures	Sustainable Infrastructure Maintenance and Adaptation	Project Management Office	Consultants (Project Management and M&E)	Total	%	Amount
<b>I. Investment Costs</b>													
A. Civil Works	-	-	0.938	-	-	0.160	18.800	-	-	-	19.898	12.5	2.487
B. Civil Works (Maintenance)	-	-	-	-	-	-	-	1.415	-	-	1.415	-	-
C. Civil Works (Govt)	-	-	-	-	-	-	0.319	-	-	-	0.319	12.5	0.040
D. Construction Materials	-	-	-	-	-	-	22.969	-	-	-	22.969	12.5	2.871
E. Resettlement	-	-	-	-	-	-	0.634	-	-	-	0.634	10.0	0.063
F. Land Acquisition	-	-	-	-	-	-	2.290	-	-	-	2.290	10.0	0.229
G. Equipment	-	0.509	0.096	-	-	-	0.160	-	-	-	0.765	7.9	0.060
H. Vehicles	-	-	0.261	-	-	-	-	-	-	-	0.261	10.0	0.026
<b>I. Capacity Development</b>													
Training/Workshops	0.002	0.159	0.103	0.019	-	0.454	-	-	-	-	0.737	10.0	0.074
Study Tours	-	-	-	0.082	-	-	-	-	-	-	0.082	10.0	0.008
<b>Subtotal Capacity Development</b>	0.002	0.159	0.103	0.101	-	0.454	-	-	-	-	0.819	10.0	0.082
J. Survey, Research and Investigation (Local Institutes)	-	0.551	-	-	-	-	0.097	-	-	-	0.648	10.0	0.065
<b>K. Consultants</b>													
International Consultants (Inst Strengthening)	-	-	-	-	1.594	-	-	-	-	-	1.594	10.0	0.159
International Consultants (Project Mgt)	-	-	-	-	-	-	-	-	-	1.020	1.020	10.0	0.102
National Consultants (IS)	-	-	-	-	0.527	-	-	-	-	-	0.527	10.0	0.053
National Consultants (PM)	-	-	-	-	0.003	-	-	-	-	0.980	0.983	10.0	0.098
Consultant Training and Studies (IS)	0.030	0.034	0.029	0.024	-	-	-	-	-	-	0.117	10.0	0.012
Consultant Training and Studies (PM)	-	-	0.016	0.006	-	0.058	0.003	-	-	-	0.083	10.0	0.008
Consultant Operational Costs (IS)	-	-	-	-	0.230	-	-	-	-	-	0.230	10.0	0.023
Consultant Operational Costs (PM)	-	-	-	-	-	-	-	-	-	0.307	0.307	10.0	0.031
M&E Consultants	-	-	-	-	-	-	-	-	-	0.102	0.102	10.0	0.010
<b>Subtotal consultants</b>	0.030	0.034	0.045	0.030	2.353	0.058	0.003	-	-	2.409	4.962	10.0	0.496
L. NGOs and Local Institutes	-	-	-	-	-	0.386	-	-	-	-	0.386	10.0	0.039
M. Project Management	-	-	-	-	-	-	-	-	1.631	-	1.631	10.0	0.163
<b>Total Investment Costs</b>	0.032	1.253	1.443	0.131	2.353	1.058	45.271	1.415	1.631	2.409	56.997	11.6	6.622
<b>II. Recurrent Costs</b>													
B. O&M PMO	-	-	-	-	-	-	-	-	1.120	-	1.120	10.0	0.112
<b>Total Recurrent Costs</b>	-	-	-	-	-	-	-	-	1.120	-	1.120	10.0	0.112
<b>Total BASELINE COSTS</b>	0.032	1.253	1.443	0.131	2.353	1.058	45.271	1.415	2.751	2.409	58.117	11.6	6.734
Physical Contingencies	0.003	0.125	0.168	0.013	0.235	0.110	5.563	-	0.275	0.241	6.734	-	-
<b>Price Contingencies</b>													
<b>Inflation</b>													
Local	0.003	0.058	0.037	0.004	0.060	0.105	1.750	0.128	0.218	0.108	2.470	-	-
Foreign	0.000	0.005	0.003	0.002	0.015	0.001	0.172	0.004	0.003	0.010	0.214	-	-
<b>Subtotal Inflation</b>	0.003	0.063	0.040	0.006	0.075	0.105	1.922	0.131	0.221	0.118	2.684	-	-
Devaluation	-0.002	-0.045	-0.028	-0.003	-0.045	-0.083	-1.354	-0.102	-0.172	-0.084	-1.917	-	-
Subtotal Price Contingencies	0.001	0.018	0.012	0.003	0.030	0.022	0.568	0.030	0.049	0.035	0.766	10.1	0.078
<b>Total PROJECT COSTS</b>	0.036	1.396	1.623	0.147	2.618	1.190	51.402	1.445	3.075	2.685	65.617	10.4	6.811
Taxes	0.007	0.235	0.200	0.008	0.471	0.129	5.650	0.173	0.332	0.506	7.712	10.4	0.798
Foreign Exchange	0.004	0.558	0.469	0.101	1.485	0.030	22.127	0.173	0.186	0.966	26.100	10.8	2.807

## F. Detailed Cost Estimates by Year

**Table 4.10: Detailed Cost Estimates by Year by Outputs (Facility)**

Components incl. Contingencies (Rs Million)	TRANCHE-1			TRANCHE -2				Total	Key Scope (Tranche 1)
	2010	2011	2012	2013	2014	2015	2016		
<b>Part A: Planning, Institutional &amp; Knowledge Bases</b>									
1. Integrated FRERM Planning Framework	0.051	1.114	0.557	8.830	9.271	9.670	-	29.492	Draft State plan framework
2. Data and Knowledge Base									
a. Training on Knowledge Base	0.606	4.773	3.508	5.613	2.026	5.222	-	21.749	Modeling, GIS, etc. including intern'l training
b. Equipment	23.185	2.652	-	1.754	-	-	-	27.591	Ecosounder, GPS, engine boats, etc.
c. Surveys	1.515	14.851	1.671	16.373	1.842	18.051	-	54.302	River surveys (x sections, water leves, etc.)
d. River Studies (Morphology, Hydrology)	4.748	4.137	3.731	42.101	43.654	9.735	-	108.106	Erosion prediciton, pilot flood forecasting
<b>Subtotal Data and Knowledge Base</b>	<b>30.055</b>	<b>26.413</b>	<b>8.910</b>	<b>65.842</b>	<b>47.522</b>	<b>33.007</b>	<b>-</b>	<b>211.749</b>	
3. Institutions Bases									
a. Hardware (Office Bldgs, Vehicles, Equipment)	65.982	0.499	-	80.916	-	-	-	147.396	SPV and WRD-SIO hardware
b. Capacity Development Training	1.339	3.485	2.294	4.046	3.512	0.851	-	15.527	FRERM, DRM, and project mgt training
c. Maintenance MIS	-	0.424	0.390	-	7.368	6.447	-	14.629	Asset inventory and MIS operationalization
<b>Subtotal Institutional Basis</b>	<b>67.320</b>	<b>4.407</b>	<b>2.684</b>	<b>84.962</b>	<b>10.880</b>	<b>7.298</b>	<b>-</b>	<b>177.552</b>	
4. Knowledge Sharing and Networking	0.707	3.504	2.840	3.042	4.311	2.386	-	16.790	Intern't seminar participation, state seminars
<b>Subtotal Part A</b>	<b>98.133</b>	<b>35.438</b>	<b>14.992</b>	<b>162.675</b>	<b>71.984</b>	<b>52.361</b>	<b>-</b>	<b>435.582</b>	
<b>Part B: Comprehensive FRERM Programs</b>									
1. Non-Structural and CBFMR Measures with DMCs									
a. NGOs and Facilitators	6.506	6.831	7.173	7.531	7.908	8.303	-	44.253	NGOs and village facilitators
b. Social mobilization and awareness	-	2.281	2.395	2.514	2.640	-	-	9.830	75 priority villages, & villages along wk sites
c. Nonstructural FRERM program delivery	1.010	15.106	15.861	18.409	19.329	5.480	-	75.195	CBFRM implementation in 75 priority villages
<b>Subtotal Nonstructural &amp; CBFMR Measures</b>	<b>7.516</b>	<b>24.218</b>	<b>25.429</b>	<b>28.454</b>	<b>29.877</b>	<b>13.783</b>	<b>-</b>	<b>129.278</b>	
2. Structural Measures									
a. Dibrugarh Structural Works	400.711	192.393	84.543	221.467	306.459	93.163	-	1,298.737	Revetment (3km), DTP dyke (9.5km)
b. Dibrugarh Land Aquisition and Resettlement	11.936	6.290	3.341	9.999	-	-	-	31.567	No LA, 310 HHs affected
c. Kaziranga Structural Works	55.028	164.221	129.943	136.381	143.200	3.694	-	632.466	5 sluices, dyke extrn (5km), prosiltation (2km)
d. Kaziranga LA and R	20.331	10.708	-	6.432	-	-	-	37.472	LA 20.6ha, 80 HHs affected
e. Palasbari Structural Works	910.639	246.342	41.954	537.528	796.783	406.385	-	2,939.631	Revetment (8km), dyke retiremt (5km)
f. Palasbari LA and R	59.842	31.515	4.455	47.327	74.270	28.698	-	246.107	LA 30.0ha, 274 HHs affected
g. Environmental Management	3.081	6.806	6.784	14.624	13.435	12.090	-	56.819	EMP of 3 subproject EIAs
<b>Subtotal Structural Measures</b>	<b>1,461.568</b>	<b>658.275</b>	<b>271.020</b>	<b>973.758</b>	<b>1,334.147</b>	<b>544.031</b>	<b>-</b>	<b>5,242.798</b>	
3. Sustainable Infra. Maintenance and Adaptation	-	32.718	37.292	39.157	48.964	61.419	113.047	332.597	(As per CWC guidelines for spurs)
<b>Subtotal Part B</b>	<b>1,469.084</b>	<b>715.211</b>	<b>333.741</b>	<b>1,041.369</b>	<b>1,412.988</b>	<b>619.233</b>	<b>113.047</b>	<b>5,704.673</b>	
<b>Part C: Multidisciplinary Project Mgt Systems</b>									
1. Project Management Office									
a. Operational Cost (SPV and SIO additional)	27.466	28.839	30.281	31.795	33.385	35.054	36.807	223.628	SPV and SIO additional op. costs
b. Operational Cost (Recurrent)	18.852	19.794	20.784	21.823	22.914	24.060	25.263	153.492	WRD and SIO recurrent costs
c. Monitoring and Evaluation	2.273	-	3.174	-	-	5.415	-	10.863	Outsourced to local agents
<b>Subtotal Project Management</b>	<b>48.591</b>	<b>48.634</b>	<b>54.240</b>	<b>53.619</b>	<b>56.299</b>	<b>64.530</b>	<b>62.070</b>	<b>387.982</b>	
2. Consultants (Inst Strengthening)	52.094	41.673	29.852	30.340	30.424	12.021	-	196.403	Outputs related to Part A
3. Consultants (Project Management)	50.151	35.628	35.777	32.923	28.775	21.168	-	204.421	Outputs related to Part B
<b>Subtotal Part C</b>	<b>150.835</b>	<b>125.935</b>	<b>119.869</b>	<b>116.881</b>	<b>115.498</b>	<b>97.719</b>	<b>62.070</b>	<b>788.806</b>	
<b>Total PROJECT COSTS</b>	<b>1,718.051</b>	<b>876.583</b>	<b>468.601</b>	<b>1,320.925</b>	<b>1,600.470</b>	<b>769.314</b>	<b>175.117</b>	<b>6,929.061</b>	
<b>Annual Projection of ADB Fund (US\$ Million)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>Total</b>	
<b>Contract Awards</b>	43.7	10.8	2.2	41.3	13.3	6.3	2.4	120.0	
<b>Expenditure</b>	32.3	15.7	8.1	23.0	26.4	12.1	2.4	120.0	
<b>Disbursements</b>	16.2	24.0	11.9	15.5	24.7	19.2	8.4	120.0	
<b>Commitment charges</b>	0.084	0.048	0.018	0.097	0.068	0.030	0.006	0.351	
Anticipated Exchange Rate	45.628	47.417	49.393	51.451	53.594	55.828	58.154		

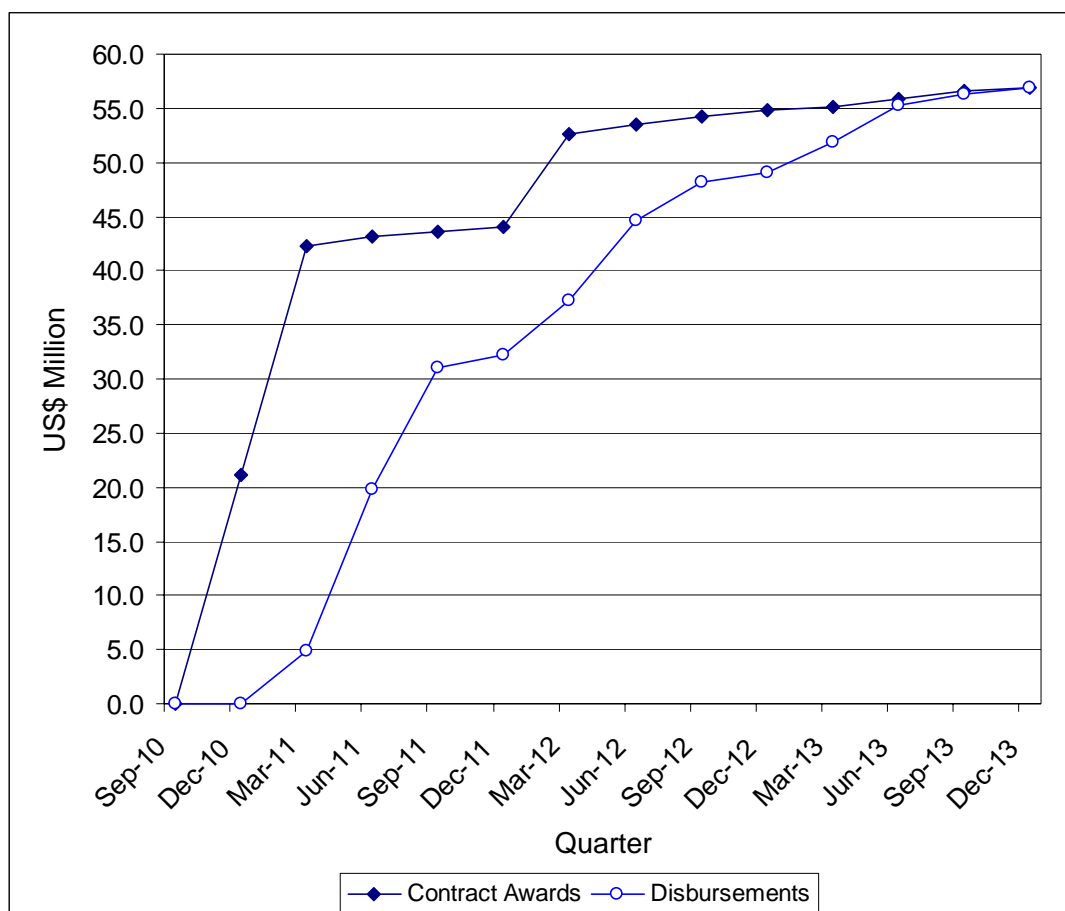
Table 4.11: Detailed Cost Estimates by Year of Expenditure (Facility)

Expenditure including Contingencies (Rs Million)	TRANCHE-1			TRANCHE-2			Total	
	2010	2011	2012	2013	2014	2015		2016
<b>I. Investment Costs</b>								
A. Civil Works	310.518	503.539	262.220	717.818	856.928	184.727	-	2,835.750
B. Civil Works (Maintenance)	-	32.718	37.292	39.157	48.964	61.419	113.047	332.597
C. Civil Works (Govt)	16.490	-	-	-	-	3.694	-	20.184
D. Construction Materials	1,087.397	104.127	-	267.887	439.459	344.937	-	2,243.807
E. Resttlement	20.978	11.053	0.557	22.992	-	-	-	55.580
F. Land Acquisition	72.646	38.256	7.240	6.432	30.699	-	-	155.273
G. Equipment	27.552	7.008	4.050	39.762	10.605	9.377	-	98.354
H. Vehicles	13.184	-	-	4.678	-	-	-	17.862
<b>I. Capacity Development</b>								
Training/Workshops	1.162	20.112	18.667	26.150	23.405	12.004	-	101.499
Study Tours	0.455	1.803	2.172	1.988	2.947	1.031	-	10.396
<b>Subtotal Capacity Development</b>	1.616	21.915	20.839	28.138	26.352	13.035	-	111.895
J. Survey, Research and Investigation (Local Institutes)	6.743	20.690	6.911	68.830	63.491	45.198	-	211.864
<b>K. Consultants</b>								
International Consultants (Inst Strengthening)	36.703	28.138	18.758	17.727	20.312	6.980	-	128.617
International Consultants (Project Mgt)	23.213	13.973	16.548	10.130	8.863	3.955	-	76.682
National Consultants (IS)	9.926	9.865	8.019	9.385	6.846	1.998	-	46.039
National Consultants (PM)	17.957	18.271	15.732	18.536	16.055	13.087	-	99.639
Consultant Training and Studies (IS)	1.970	3.026	1.169	0.703	0.443	0.775	-	8.086
Consultant Training and Studies (PM)	1.616	1.485	1.281	0.117	0.123	0.129	-	4.751
Consultant Operational Costs (IS)	5.415	3.617	3.018	3.169	3.205	2.978	-	21.403
Consultant Operational Costs (PM)	9.032	3.437	3.553	4.315	3.917	4.190	-	28.444
M&E Consultants	2.273	-	3.174	-	-	5.415	-	10.863
<b>Subtotal onsultants</b>	108.104	81.813	71.254	64.082	59.765	39.508	-	424.525
L. NGOs and Local Institutes	6.506	6.831	7.173	7.531	7.908	8.303	-	44.253
M. Project Management	27.466	28.839	30.281	31.795	33.385	35.054	36.807	223.628
<b>Total Investment Costs</b>	1,699.200	856.789	447.817	1,299.101	1,577.555	745.254	149.854	6,775.570
<b>II. Recurrent Costs</b>								
B. O&M PMO	18.852	19.794	20.784	21.823	22.914	24.060	25.263	153.492
<b>Total Recurrent Costs</b>	18.852	19.794	20.784	21.823	22.914	24.060	25.263	153.492
<b>Total PROJECT COSTS</b>	1,718.051	876.583	468.601	1,320.925	1,600.470	769.314	175.117	6,929.061
<b>Annual Projection of ADB Fund (US\$ Million)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>Total</b>
Contract Awards	43.7	10.8	2.2	41.3	13.3	6.3	2.4	120.0
Expenditure	32.3	15.7	8.1	23.0	26.4	12.1	2.4	120.0
Disbursements	16.2	24.0	11.9	15.5	24.7	19.2	8.4	120.0
Commitment charges	0.084	0.048	0.018	0.097	0.068	0.030	0.006	0.351
Anticipated Exchange Rate	45.628	47.417	49.393	51.451	53.594	55.828	58.154	

### G. Contract and Disbursement S-Curve

24. Figure 4.1 shows the estimated disbursement progress over the Project 1 implementation period. This will help to assess disbursement performance at any time during the project implementation. In case of delays and poor disbursements, this will help as an early warning system for taking timely remedial measures.

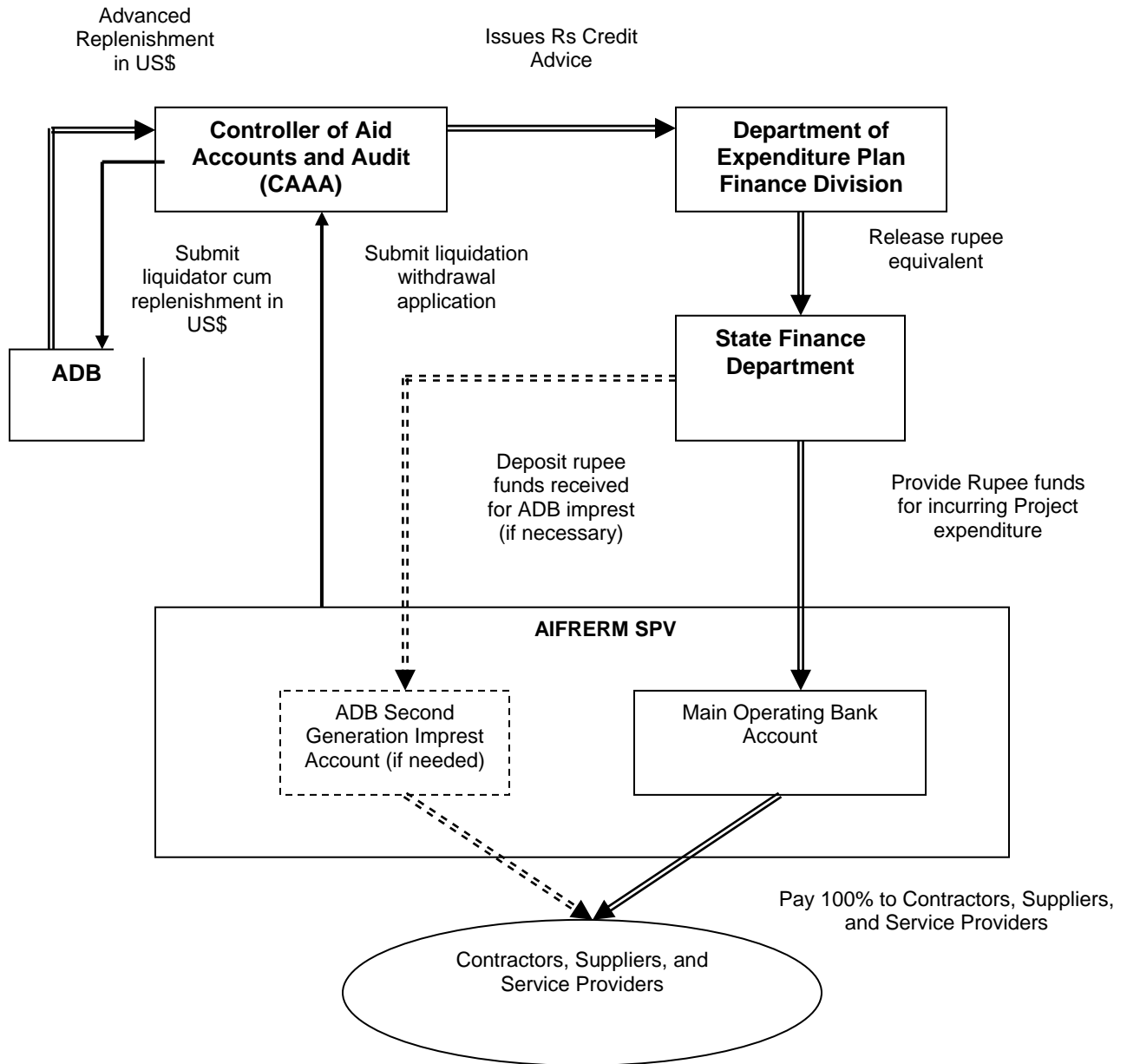
**Figure 4-1. Contract Award and Disbursement S-Curve**



### H. Fund Flow Diagram

25. Fund flow diagram, as illustrated in Figure 4.2, shows the funds flow from ADB, and the Government to implement project activities.

**Figure 4.2: Fund Flow Mechanism**



Note: In addition to the above, direct payment from ADB may also be requested from ADB by the AIFRERMA by submitting withdrawal applications.

## IV. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

26. Key findings of the financial management assessment undertaken for the Program during the investment program preparation are as follows.

**Table 5.1 Summary of the Financial Management Assessment**

Particulars	Conclusions
<b>A. Funds Flow Arrangements</b>	Funds flow arrangements for the new Special Purpose Vehicle - AIFRERMA will be established as given in Figure 4.2 to ensure smooth flow of funds from ADB-GOI-SGOA-AIFRERMA to effect timely payment to contractors, consultants and other service providers engaged in the Investment Program.
<b>B. Staffing</b>	AIFRERMA's PMU is being staffed with key experienced personal drawn from other departments including the Water Resources, Revenue and Disaster Management, and State Finance Departments with additional inputs from contractual experts drawn from the market to service the gaps to facilitate execution of the project. The PMU staff and other experts will undergo regular trainings on ADB's procurement and financial management procedures and other such programs to enhance their capacities and knowledge.
<b>C. Accounting Policies and Procedures</b>	AIFRERMA accounting policy is based on the Accounting Standards and Financial Reporting Regulations followed in India and accepted by ADB in its other ongoing projects in India.
<b>D. Internal and External Audits</b>	Internal audits will be carried out by the Audit Officer drawn from the State Finance Department and an external auditor will be engaged by AIFRERMA for carrying out annual audits. In addition to the above, the annual audit will be carried out by the Office of the Comptroller and Audit General of India.
<b>G. Reporting and Monitoring</b>	AIFRERMA will comply with the reporting requirements of ADB, and submit their reports to SGOA, DEA, Ministry of Finance, Govt. of India
<b>H. Information Systems</b>	AIFRERMA will establish a robust accounting system to meet both the program requirements and others required by SGOA and GOI.

Source: PPTA consultants

27. AIFRERMA being a new agency established for the purpose of implementation of this program, following actions are required to be initiated to facilitate smooth implementation of the project:

- (i) Assign PMU staff drawn on deputation from their parent departments at a higher level along with or including special incentives /special allowances to avoid frequent staff turnover and adverse impacts on implementation of the project;
- (ii) PMU staff must undergo trainings on ADB's procurement and financial management procedures to further strengthen its capacity and enable them to disseminate best practices and knowledge transfer to build improve the capacities of their parent departments;
- (iii) A separate Financial Management Handbook Rules for the SPV and a Finance Management Manual for the Program is being prepared in accordance with established accounting and financial management procedures and practices;
- (iv) AIFRERMA should maintain separate Second Generation Imprest Account (SGIA) bank account for funds received from ADB through GOI-SGOA at PMU

level and separate project accounts at the Subproject Implementation Offices (SIO) levels under the Investment Program. These accounts will be audited annually, in accordance with appropriate auditing standards consistently applied by independent auditors.

28. **Risk Assessments:** During the implementation phase, the PMU might face some risks that may affect timely project implementation. These are summarized as follows. Project and financial management risks and the risk mitigation measures thereof will be updated throughout the life of the AIFRERMIP.

**Table 5.2: Summary of Risks and Mitigation Measures**

Sl. No.	Risk	Assessment without Mitigation	Management Plan or Measures	Assessment with Mitigation
1	Unpredicted morphological changes affecting RBP structures	Medium	<ul style="list-style-type: none"> <li>▪ Adaptive riverbank stabilization (revetment) along naturally developed bank lines with safe end termination structures<sup>5</sup></li> <li>▪ Proactive and advance measures (e.g., revetment extension) with erosion prediction modeling</li> <li>▪ Regular monitoring and survey of structure performance</li> </ul>	Low (Medium-Low over medium-to long-term)
2	Negative impact of climate change	Medium (over long term)	<ul style="list-style-type: none"> <li>▪ Sufficient free board in embankments beyond design flood levels to ensure safety</li> <li>▪ Regular monitoring of basin hydrology and implementation of adaptation measures over the medium- to long-term.</li> </ul>	Low (Medium-Low over medium-to long-term)
3	Performance problem of new RBP technology	Low	<ul style="list-style-type: none"> <li>▪ Use of verified and standardized designs in the similar river environment following the set design parameters</li> <li>▪ Close performance monitoring and evaluation</li> <li>▪ Technical scrutinization through panel of experts for further improvements and standardization in India</li> </ul>	Low
4	Resistance to adopt new technology	Medium-Low	<ul style="list-style-type: none"> <li>▪ Consultations on effectiveness of new technologies demonstrated elsewhere, including study tours</li> <li>▪ Advice from international and national experts</li> </ul>	Low
5	Limited capacities of FRERM institutions	High	<ul style="list-style-type: none"> <li>▪ Implementation through a special purpose agency with stable leadership, multidisciplinary staffing, leadership, and regular managerial guidance following successful models</li> <li>▪ Establishment and operationalization of the agency with eligible staffing completed prior to project approval</li> <li>▪ Continuous and intensive capacity development programs</li> <li>▪ Upfront actions completed to define policy, planning, and institutional framework of integrated FRERM</li> </ul>	Medium
6	Slow land acquisition/ resettlement	Medium	<ul style="list-style-type: none"> <li>▪ Advance initiation of land acquisition and resettlement following the RPs as a readiness filter action</li> <li>▪ Implementation support for pre-project activities</li> </ul>	Low
7	Slow procurement and consultant recruitment	Medium	<ul style="list-style-type: none"> <li>▪ Advance procurement and consultant engagement, and processing prior to loan negotiations and signing based on firm procurement plan</li> <li>▪ Implementation support for pre-project activities</li> </ul>	Low
8	Poor time and quality management of contractors	Medium	<ul style="list-style-type: none"> <li>▪ Practical bid pricing based on market rates, price adjustment mechanism during implementation</li> <li>▪ Sound construction management following ADB standard bid documents (including FIDIC provision)</li> <li>▪ Mobilization of supervision consultants to support stringent</li> </ul>	Low

<sup>5</sup> Termination structures aim to withstand erosion in immediate upstream and downstream of revetment end points.



Sl. No.	Risk	Assessment without Mitigation	Management Plan or Measures	Assessment with Mitigation
			<ul style="list-style-type: none"> <li>quality management using modern technologies</li> <li>▪ Participation of local DMOs to monitor construction quality</li> </ul>	
9	Limited local people's participation in DMOs	Low	<ul style="list-style-type: none"> <li>▪ Sufficient awareness and motivation campaigns with the support of experienced and NGOs trained by consultants</li> <li>▪ Initial focus on highly vulnerable areas and demonstration of program quality</li> </ul>	Low
10	Sustainability of FRERM infrastructure	High	<ul style="list-style-type: none"> <li>▪ Asset inventory and MIS for infrastructure performance monitoring and maintenance planning</li> <li>▪ Progressive increase of maintenance fund allocation by SGOA in public infrastructures (ongoing and to continue)</li> <li>▪ Improved maintenance fund management at the field level with higher transparency and accountability</li> <li>▪ Utilization of available LGI funds for routine maintenance works (e.g. rural employment guarantee program)</li> <li>▪ Utilization of available central sector assistance for capital adaptation and maintenance works</li> </ul>	Medium
11	Unavailability of Timely fund flow	Medium-Low	<ul style="list-style-type: none"> <li>▪ SGOA to ensure timely release of project and counterpart fund through AIFRERMA CEO and its finance unit</li> <li>▪ Establishment of second generation imprest fund as necessary</li> </ul>	Low
12	Low performance in financial management	Medium-High	<ul style="list-style-type: none"> <li>▪ Establishment of specialized FA division in AIFRERMA PMU and FA unit in SIOs with specially assigned FA staffs</li> <li>▪ Sufficient training of FA staffs by consultants</li> <li>▪ Sound internal and external auditing mechanism with the latter following the standards for audit issued by ICAI</li> </ul>	Low
Overall		Medium		Medium-Low

ADB = Asian Development Bank, AIFRERMA = Assam Integrated Flood and Riverbank Erosion Risk Management Agency, CEO = chief executive officer, DMO = disaster management organization, FA = finance and account, FIDIC = International Federation of Consulting Engineers, FRERM = flood and riverbank erosion risk management, ICAI = Institute of Chartered Accounts of India, MIS = management information system, NGO = nongovernment organization, PMU = project management unit, RBP = river bank protection, RP = resettlement plan, SIO = subproject implementation office.

Source: Asian Development Bank

\* H – High, S – Substantial, M – Moderate, N – Negligible or Low. Source: PPTA consultants

## B. Disbursement Procedures

29. Disbursement of loan proceeds under the MFF will be in accordance with ADB's *Loan Disbursement Handbook* (2007, as amended from time to time)<sup>6</sup>. Each loan under the MFF may have its own imprest account in Controller of Aid Accounts & Audit (CAAA), Department of Economic Affairs, India.

30. **Types of Disbursement Arrangements.** There are four major types of disbursement:

- (i) Direct payment procedure where ADB, at the borrower's request, pays a designated beneficiary directly;
- (ii) Commitment procedure where ADB, at the borrower's request, provides an irrevocable undertaking to reimburse a commercial bank for payments made or to be made to a supplier against a letter of credit financed from the loan account;
- (iii) Reimbursement procedure (with or without full supporting documents) where ADB pays from the loan account to the borrower's account, or in some cases, to

<sup>6</sup> Available at: [http://www.adb.org/Documents/Handbooks/Loan\\_Disbursement/loan-disbursement-final.pdf](http://www.adb.org/Documents/Handbooks/Loan_Disbursement/loan-disbursement-final.pdf)

- the project account for eligible expenditures which have been incurred and paid for by the project out of its budget allocation or its own resources; and
- (iv) Imprest fund procedure where ADB makes an advance disbursement from the loan account for deposit to an imprest account to be used exclusively for ADB's share of eligible expenditures.
31. Required actions prior to initial withdrawal includes the following:
- (i) Authorized signatory letter from the AIFRERMA addressed to ADB
  - (ii) Authenticated specimen signatures of authorized signatories
  - (iii) Submission of withdrawal application (initial advance) and duly accomplished Estimate of Expenditures Sheet in case of imprest account.<sup>7</sup>
32. **Second Generation Imprest Account.** The state, through AIFRERMA, may establish a second-generation imprest account (SGIA) for each loan under the Facility, in an account with a commercial bank acceptable to ADB. The advances made to the imprest account maintained by CAAA will be immediately and fully transferred through Department of Expenditure (Plan Finance PF1) to SGOA and thereafter to the SGIA within 30 days from the date of receipt of imprest funds from ADB. The AIFRERMA will be responsible for administering and managing the SGIA and the imprest limit of SGIA will not exceed 6 months of estimated expenditures or 10% of the relevant loan amount, whichever is lower.
33. The request for initial advance to the SGIA should be accompanied by an Estimate of Expenditure Sheet setting out the estimated expenditures for the first six (6) months of project implementation, and submission of evidence satisfactory to ADB that the imprest account has been duly opened. A comfort letter is required from the commercial bank where the Imprest Account is opened to protect the interest of both AIFRERMA and ADB, confirming that the bank shall not assert any claim to set off, seize, or attach amounts on deposit to the Account to satisfy amounts due to the bank by AIFRERMA or SGOA. The comfort letter should be submitted in the format given in *Appendix 32 of ADB's Loan Disbursement Handbook*. For every liquidation and replenishment request of SGIA, AIFRERMA will furnish to ADB (a) Statement of Account (Bank Statement) where the imprest account is maintained, and (b) the Imprest Account Reconciliation Statement (IARS) reconciling the above mentioned bank statement against AIFRERMA's records.<sup>8</sup>
34. **Statement of Expenditure Procedure.** The statement of expenditure (SOE) procedure will be used to reimburse/liquidate eligible expenditures not exceeding \$100,000 equivalent for any individual payment. For all single payments exceeding \$100,000 equivalent, documented claim procedure will be adopted for replenishment of loan funds to SGIA. Withdrawal applications for payments made to contractors/consultants in currencies other than Indian Rupees, submitted for replenishment of funds will follow documented claim procedure and will be in the currency paid to contractors/consultants. SOE records should be maintained and made readily available for review by ADB's disbursement and review missions or upon ADB's request for submission of supporting documents on a sampling basis, and independent audit.<sup>9</sup>

<sup>7</sup> Available in Appendix 29 of the *Loan Disbursement Handbook*.

<sup>8</sup> Follow the format provided in Appendix 30 of the *Loan Disbursement Handbook*.

<sup>9</sup> Checklist for SOE procedures and formats are available at:

[http://www.adb.org/documents/handbooks/loan\\_disbursement/chap-09.pdf](http://www.adb.org/documents/handbooks/loan_disbursement/chap-09.pdf)

[http://www.adb.org/documents/handbooks/loan\\_disbursement/SOE-Contracts-100-Below.xls](http://www.adb.org/documents/handbooks/loan_disbursement/SOE-Contracts-100-Below.xls)

[http://www.adb.org/documents/handbooks/loan\\_disbursement/SOE-Contracts-Over-100.xls](http://www.adb.org/documents/handbooks/loan_disbursement/SOE-Contracts-Over-100.xls)

[http://www.adb.org/documents/handbooks/loan\\_disbursement/SOE-Operating-Costs.xls](http://www.adb.org/documents/handbooks/loan_disbursement/SOE-Operating-Costs.xls)

[http://www.adb.org/documents/handbooks/loan\\_disbursement/SOE-Free-Format.xls](http://www.adb.org/documents/handbooks/loan_disbursement/SOE-Free-Format.xls)

35. **Minimum value per Withdrawal Application.** The minimum value per withdrawal application is US\$100,000, unless otherwise approved by ADB. AIFRERMA will consolidate claims to meet this limit for reimbursement and imprest account claims. Withdrawal applications and supporting documents will demonstrate, among other things that the goods, and/or services were produced in or from ADB member countries, and are eligible for ADB financing.

36. **Institutional Responsibility.** AIFRERMA will be responsible for (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds, (iii) collecting supporting documents, and (iv) preparing and sending withdrawal applications to ADB. Before the submission of the first withdrawal application, the Government shall submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of India, together with the authenticated specimen signatures of each authorized person.

37. All disbursements under government financing will be carried out in accordance with regulations of Government of India relevant to co-financing of the projects financed by the Multilateral Financing Organizations. AIFRERMA shall open and maintain the separate account for government's counterpart funds.

38. Pursuant to ADB's *Safeguard Policy Statement (2009) (SPS)*,<sup>10</sup> ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at *Appendix 5* of the SPS. All financial institutions will ensure that their investments are in compliance with applicable national laws and regulations and will apply the prohibited investment activities list to subprojects financed by ADB.

### C. Finance Accounting and Auditing Requirements

39. AIFRERMA, through the PMU, will:

- (i) establish and maintain separate records for works, goods, and services financed out of loan proceeds;
- (ii) maintain separate project accounts according to generally acceptable accounting principles for all expenditures incurred under the MFF and the Projects, whether out of loan proceeds or other sources;
- (iii) record in a transparent manner all funds received from the SGOA and ADB;
- (iv) maintain detailed consolidated annual project accounts to be audited by independent auditors whose qualifications, experience, and terms of reference are acceptable to ADB;
- (v) furnish to ADB as soon as available but in any event not later than 6 months after the end of each fiscal year, certified copies of audited project accounts and report of the auditors which should include a separate audit opinion on the use of loan proceeds, the operation of the SGIA, and compliance with SOE procedures and loan covenants

40. AIFRERMA has been made aware of ADB's policy regarding the delayed submission of audits and the requirements for a satisfactory and acceptable audit of accounts. The independent auditors will be engaged and financed under the MFF.

<sup>10</sup> Available at: <http://www.adb.org/Documents/Policies/Safeguards/Safeguard-Policy-Statement-June2009.pdf>

## V. PROCUREMENT AND CONSULTING SERVICES

### A. Advance Contracting and Retroactive Financing

41. All advance contracting and retroactive financing will be undertaken in conformity with ADB's *Procurement Guidelines* (April 2010, as amended from time to time) (ADB's *Procurement Guidelines*)<sup>11</sup> and ADB's *Guidelines on the Use of Consultants* (April 2010, as amended from time to time).<sup>12</sup> The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. The Government has been informed that the approval of advance action and retroactive financing does not commit ADB to finance the relevant Projects under the Investment Program.

42. Under each tranche, ADB may, subject to its policies and procedures, allow upon request (a) advance contracting and (b) retroactive financing of eligible expenditures for up to 20% of the proposed individual loan, incurred prior to loan effectiveness but not earlier than 12 months before the date of signing of the related legal agreement.

43. For Project-1, the ADB Management has endorsed advance contracting of consultants, NGO engagement and for procurement of goods and civil works, and retroactive financing. Retroactive financing was endorsed provided that the total eligible expenditure under such financing will not exceed an amount equivalent to 20% of the individual loan, and must have been incurred not more than 12 months before signing of the Loan Agreement. Necessary capacity development support is provided through a separate technical assistance to ensure due compliance with the relevant ADB guidelines.

### B. Procurement of Goods, Works, and Consulting Services

44. **Procurement of Goods and Works.** Procurement to be financed under the MFF will be carried out in accordance with ADB's *Procurement Guidelines* (2010, as amended from time to time). The AIFRERMA has submitted its General Procurement Notice (GPN) for posting the same in ADB's Website. To ensure competitive bidding, international competitive bidding (ICB) will be followed for civil work contracts costing \$10 million or more. Civil works contracts costing less than \$10 million will be procured through national competitive bidding (NCB). ADB in consultation with the SGOA and AIFRERMA will review and arrive at agreed procedures and documents to be applied under the National Competitive Bidding mode of procurement under the projects.<sup>13</sup> For procurement of goods and related services, ICB procedures will be used if the estimated cost is \$1 million or more and shopping if the estimated contract amount is less than \$0.1 million.

45. AIFRERMA will prepare draft bidding documents for each contract package and submit to ADB for its approval. The final copy of the bidding document incorporating the comments of ADB will be forwarded to ADB (or made available through AIFRERMA's website), within one

<sup>11</sup> Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

<sup>12</sup> Available at: <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>

<sup>13</sup> During the project preparation stage, an assessment of the procurement practices of WRD and other infrastructure departments was undertaken. WRD is progressively improving the procurement practices in line with the State Public Works Department (PWD) Codes. However, WRD has limited experience in competitive bidding for high value contracts and limited practice of applying new technologies in works relating to riverbank protection envisaged under the AIFRERMIP. As such, the State has established AIFRERMA as an EA for the project anchored to WRD, and will be strengthening the capacities for managing sound procurement procedures and practices that can attract quality contractors, with the support of the consultants for institutional strengthening and project management.

week from the date of issue of invitation of bid for its records. AIFRERMA will seek ADB's concurrence for all bid evaluation reports at every stage for each contract package.

46. ADB will approve the draft bidding documents under each category during the initial implementation period. AIFRERMA will be exempted from ADB's prior approval of the bidding documents once bid documents are standardized for other similar contract packages provided that such documents are in line with the corresponding approved model bidding document, and at the time of release of invitation of bid, a copy of the bidding documents should be forwarded to ADB for post-facto approval. AIFRERMA will also issue amendments based on comments (if any) made by ADB, during the bidding period.

47. For small contract packages valued less than \$100,000, AIFRERMA will prepare a draft model bidding documents for two types of contract packages viz. (a) civil works, and (b) supply of goods, equipment and materials and seek ADB's approval for the same. AIFRERMA will also do the same for small community works contracts valued less than \$10,000.<sup>14</sup> Upon approval of the model documents AIFRERMA may approve and award contracts in each case without seeking prior approval, but will be subject to post-facto review and approval of ADB.

48. **Modifications in Civil Works Contracts.** In the case of any variation, which would in aggregate increase the original amount of any contract by more than 15 percent of its original price, AIFRERMA shall seek ADB's no objection to the proposed extension, modification, or change order providing detailed justification validated by the Engineer. If ADB determines that the proposal would be inconsistent with the provisions of the financing agreement and/or procurement plan, it shall promptly inform AIFRERMA and state the reasons for its determination. A copy of all amendments to the contract shall be furnished to ADB for its record.

49. **Consulting Services.** The Investment Program provides consultancy packages for (i) institutional strengthening consultants (ISC), (ii) project management consultants (PMC), and (iii) benefit monitoring and evaluation (BME). They include institutionalization of integrated FRERM, program administration, subsequent Project preparation (including safeguards aspects), and monitoring and evaluation. NGOs will be engaged for (i) community-based flood risk management (CBFRM), and (ii) facilitation of land acquisition and resettlement. The PMU will engage consultants and NGOs using ADB's quality- and cost-based selection and consultant qualification selection procedures. In addition, NGOs, independent agencies, and institutions will be hired for survey, research and development (including knowledge management), and monitoring, while resource persons will be engaged for training. All consultants, NGOs, other institutions, and resource persons will be hired following the ADB's *Guidelines on the Use of Consultants* (2010, as amended from time to time.)

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<sup>14</sup> Small community works costing less than \$10,000 may be implemented through direct contracts with the labor contracting groups formed under the concerned DMC, which has participated in the planning and design, and agreed to participate in routine maintaining the facilities.

### C. Procurement Plan

Project Information	Effective and reliable flood and riverbank erosion risk management (FRERM) systems in three existing large-scale flood embankment systems in Assam
Country	India
Borrower	India
Project	Assam Integrated Flood and Riverbank Erosion risk Management Investment Program
Loan No.:	To be determined (t.b.d.)
Date of Effectiveness	t.b.d.
Amount :	\$120 million (MFF)
Of which Committed, US\$	\$56.9 million (Tranche 1)
Executing Agency	Water Resources Department, Government of Assam
Approval Date of Original Procurement Plan	15 May 2010
Approval of Most Recent Procurement Plan	08 September 2010
Publication for Local Advertisement	20 August 2010 (for consulting and NGO services) t.b.d. (for works contracts)
Period Covered by this Plan	48 months

Procurement Methods: Works and Goods	To be used above/below (\$)
NCB works <sup>15</sup>	All works contracts less than \$ 10,000,000 Other than community works contracts (See footnote 11)
ICB goods	All goods greater than \$1,000,000
NCB goods	All goods greater than \$ 100,000 and less than \$1,000,000
Shopping Goods	Less than \$100,000
Exceptional Methods	See footnote 11.

Consulting Services	To be used above below (\$)
Quality Cost Based Selection (QCBS)	Greater than \$200,000 <sup>16</sup>
Consultants Qualifications Selection (CQS)	Only for specific specialist services (less than \$200,000) with prior agreement of Project Director and ADB
Least Cost Selection (LCS)	Less than \$100,000

#### Procurement Packages under Project 1

##### 1. Civil Works

Contract Package No.	Contract Description	Value (million)	Date / Expected date of Advertisement	Mode of Procurement	Prior Review Y/N
<b>1. Dibrugarh Subproject</b>					
D-NCB-T1/E1	Raising and Strengthening of Dibrugarh Town Protection Embankment, 9.5 km	Rs. 130 \$2.9	1 July 2011	NCB	Y
D-NCB-T1/RBP1	Provision of revetments and pro-siltation measures in the reach Oakland to Bogibeel, total 2.4 km	Rs200 \$4.4	15 Oct 2010	NCB	Y
<b>2. Kaziranga Subproject</b>					
K-NCB-T1/E1	Construction of 4.7 km of embankment	Rs 140 \$ 3.1	1 July 2011	NCB	Y

<sup>15</sup> For NCB procurement of works and goods, ADB's standard bidding document without pre-qualification for large works will be used.

<sup>16</sup> Full technical proposal required for services greater than \$1,000,000.

Contract Package No.	Contract Description	Value (million)	Date / Expected date of Advertisement	Mode of Procurement	Prior Review Y/N
K-NCB-T1/DS1	Construction of 5 gated drainage sluices	Rs 140 \$ 3.1	1 Jan 2011	NCB	Y
<b>3. Palasbari Subproject</b>					
P-NCB-T1/E1	Construction of 4.9 km of embankment	Rs 66 \$ 1.5	1 July 2011	NCB	Y
P-NCB-T1/RBP1	Provision of revetments in the Palasbari Dhakala Hill area, total 4.9 km	Rs 103 \$ 2.3	15 Oct 2010	NCB	Y
P-NCB-T1/RBP2	Provision of revetments in the Gumi Zakirpur area, total 4.5 km	Rs 100 \$ 2.2	15 Oct 2010	NCB	Y
<b>Total</b>		Rs. 879 \$ 19.5			

## 2. Goods – Revetment Materials

Contract Package No.	Contract Description	Value (million)	Expected date of Advertisement	Mode of Procurement	Prior Review Y/N
D-G-T1/GC1	Procurement of geotextile container (110 x 80 cm), 720,000 Nos and geotextile sheet	Rs240 \$5.4	20 Sept 2010	ICB	Y
P-G-T1/GC1	Procurement of geotextile container (110 x 80 cm), 770,000 Nos & sheet	Rs260 \$ 5.8	20 Sept 2010	ICB	Y
P-G-T1/GC2	Procurement of geotextile container (110 x 00 cm), 700,000 Nos and geotextile sheet	Rs 230 \$ 5.1	20 Sept 2010	ICB	Y
P-G-T1/GC3	Procurement of boulders for revetments and wave protection 67,000 m <sup>3</sup>	Rs172 \$3.8	15 Dec 2010	NCB	Y
P-G-G1/GC4	Procurement of wire netting sheets for boulder crates 97,000 Nos	Rs70 \$1.6	15 Dec 2010	NCB	Y
<b>Total</b>		Rs.972 \$ 21.7			

## 3. Goods - Equipment and Supplies

Contract Package No.	Contract Description	Value ('000)	Expected date of Advertisement	Mode of Procurement	Prior Review Y/N
EQ-G-T1/GPS 1	Procurement of handheld GPS, 15 nos and distance measurement devices 5 nos	\$ 12.5	15 Oct 2010	Shopping	Y
EQ-G-T1/Computer	Procurement of 15 computers including licensed software, and ACAD, GIS	\$ 40.0	1 Nov 2010	Shopping	Y
EQ-G-T1/M&E 1	Procurement of 4 engine boats	\$ 100.0*	1 Nov 2010	Shopping	Y
EQ-G-T1/M&E 2	Procurement of 4 double frequency echosounders	\$ 100.0*	1 Nov 2010	Shopping	Y
EQ-G-T1/M&E 3.1	Procurement of 5 RTK – GPS	\$ 100.0*	1 Nov 2010	Shopping	Y
EQ-G-T1/M&E 3.2	Procurement of 5 RTK – GPS	\$ 100.0*	1 Nov 2010	Shopping	Y
EQ-G-T1/M&E 4	Procurement of 2 ADCP	\$ 60.0	1 Nov 2010	Shopping	Y
EQ-G-T1/M&E 5	Procurement of 12 floats	\$ 6.0	1 Nov 2010	Shopping	Y
EQ-G-T1/M&E 6	Procurement of 8 ruggedized survey laptops	\$ 24.0	1 Nov 2010	Shopping	Y
EQ-G-T1/M&E 7	Procurement of 5 survey computer stations including printer	\$ 12.5	1 Dec 2010	Shopping	Y

Contract Package No.	Contract Description	Value ('000)	Expected date of Advertisement	Mode of Procurement	Prior Review Y/N
EQ-G-T1/DB 1	Procurement of hydrometric database	\$ 50	1 Dec 2010	Shopping	Y
<b>Total</b>		\$605.0			

\* Less than \$100,000.

#### 4. Consulting Services

Contract Package No.	Contract Description	Value ('000)	Expected date of Advertisement	Mode of Procurement	Prior Review Y/N
S-T1/CS 1	Institutional strengthening consultant	\$ 3,600	20 Aug 2010	QCBS (90:10)	Y
S-T1/CS 2	Project management consultant	\$4,200	20 Aug 2010	QCBS (80:20)	Y
S-T1/CS 3	Monitoring and Evaluation	\$200	15 Sept 2010	QCBS (80:20)	Y
S-T1/NGO 1-2	Resettlement, Implementing NGO (2 packages)	\$200	15 Oct 2010	CQS	Y
S-T1/NGO 3-5	NGO Social mobilization: disaster management committees (3 packages)	\$300	15 Oct 2010	CQS	Y
S-T1/morph	Morphological analysis of Brahmaputra reaches	\$100	1 Jan 2011	Individual	Y
S-T1/g-xsec	Gauging and cross sectional surveys	\$340	1 Jan 2011	QCBS (80:20)	Y
<b>Total</b>		\$8,940			

#### D. Consultant's Terms of Reference (Indicative)

##### **Package A: Institutional Strengthening for Integrated Flood and Riverbank Erosion Risk Management**

**Scope of Work.** The consulting services will be provided by an international consulting firm in association with domestic consulting firms, engaged in accordance with ADB's Guidelines on the Use of Consultants. The consultant team will ensure that the executing agency (EA)–Assam Integrated Flood and Riverbank Erosion Risk Management Agency (AIFRERMA)–receives necessary advice to meet the core project goals of (i) integrated flood and riverbank erosion risk management (FRERM) with community focus, and (ii) institution building and change management including critical data and knowledge base.

The Package A consultants are aimed to advance the technological and institutional including knowledge and capacity bases of integrated FRERM. The team will pursue and deliver technological and other innovations, establishing and developing sound data and knowledge base, devising programs that are yet to be well operationalized within Assam such as nonstructural measures, and supporting the critical capacity development of the concerned state and local government agencies, private agents (including local consultants, NGOs, and contractors) and stakeholders. This is promoted in partnership with local academic institutions to develop a momentum that the process will be sustained through local leadership.

In this context, the consultants are assigned to support the institutional strengthening aspects of AIFRERMIP including (i) closing knowledge gaps about the Brahmaputra River and its floodplains, (ii) supporting development and establishment of an enabling environment, (iii) supporting development and establishment of organizations and building capacity for integrated FRERM, (iv) advising on the implementation of structural measures, while ensuring quality works implemented in a timely and adaptive manner, (v) advising on the development of non-structural measures with special focus on community based activities, and (vii) advising on the development of an asset inventory system providing the basis for programming adaptation and maintenance work. The consultants will also be responsible for the delivery of formal and non-formal training activities included in Part A (Development of FRERM Planning, Institutional and Knowledge Basis) of the AIFRERMIP.



**Overall Resource Requirements.** The overall composition is shown in the following table. The detailed cost estimate is shown in Attachment.

**Table 6A.1: Consulting Services Inputs (Package A)**

<b>Position</b>	<b>Person-months</b>
1. International Advisors	
River Engineering Advisor/ Int. Team Leader	28
Flood Risk Management Advisor	18
Morphologist	10
Institutional Development Advisor	8
Survey and Data Advisor	6
<b>Subtotal</b>	<b>70</b>
2. National Consultants	
Flood Management Specialist/ National Team Leader	52
River Engineer (Morphology)	18
River Engineer (Infrastructure)	23
Institutional Specialist	16
Training Coordinator	12
MIS Specialist	18
GIS Specialist	12
Survey and Data Advisor	18
<b>Subtotal</b>	<b>169</b>
<b>Total</b>	<b>239</b>

**Key Tasks Assigned.** Key tasks assigned to the individual consultants in the package A team are shown in the following table.

**Table 6A.2 Task List of Consultants (Package A)**

<b>Designation</b>	<b>Duration (p-m)</b>	<b>Responsibilities</b>
<b>International Consultants</b>		
River Engineering Advisor/ Team Leader	23	Guide, direct, manage and report on Team inputs and outputs; provide technical support to the PD; assist with operationalizing monitoring systems; support sufficient training and capacity development; guide state FRERM planning, and data and knowledge base development; guide technology development of riverbank protection; guide developing FRERM guidelines; and lead regional and international knowledge networking.
Flood Risk Management Advisor	18	Guide and advise state level FRERM planning; advise flood management data and knowledge development (including flood modeling and other nonstructural tools); guide the programming of nonstructural and CBFRM programs; and support capacity development on flood management aspects.
Morphology Advisor	10	Guide development of data and knowledge base for morphology and sediment transport; lead the studies to develop short term morphology prediction models; guide the analysis of river response to riverbank protection works; lead pre-feasibility level studies for long-term river stabilization; and support capacity development on relevant skills and expertise.

<b>Designation</b>	<b>Duration (p-m)</b>	<b>Responsibilities</b>
Institutional Development Advisor	8	Assist AIFRERMA and WRD in advancing institutional development roadmap action, developing and strengthening management tools, guiding capacity development, and in detailing institutional development plan (in hardware and software) to be implemented during Project 2 period.
Survey and Data Advisor	6	Guide outlining river and land surveying requirements; assist in establishing survey and data management systems, specifying standard software, and standardizing data presentation. Assist the capacity development on survey and data management.
Subtotal	<b>70</b>	
<b>Domestic Consultants</b>		
Flood Management Specialist	52	Assist PMU and state disaster management organizations in implementing nonstructural including CBFMR programs; assist state FRERM planning; support knowledge base development; assist training and capacity development; assist establishing effective FRERM infrastructure maintenance MIS in the subprojects; and play the role of team leader in the latter's absence.
River Engineer (Morphologist)	18	Assist development of data and knowledge base for morphology and sediment transport; lead the studies to develop short term morphology prediction models; lead the analysis of river response to riverbank protection works; assist pre-feasibility level studies for long-term river stabilization; and support capacity development on relevant skills and expertise.
River Engineer (Infrastructure)	23	Assist state FRERM planning on riverbank protection, and development of data and knowledge base; lead studies on technology development of riverbank protection; lead the development of FRERM design and implementation guidelines; and assist regional and international knowledge networking.
Institutional Specialist	16	Assist AIFRERMA and WRD in advancing institutional development roadmap action, assist developing and strengthening management tools, assist capacity development, and in detailing institutional development plan (in hardware and software) to be implemented during Project 2 period.
Training Coordinator	12	Assist AIFRERMA in implementing capacity development plan with provision of training modules and materials; and institutionalize training through identification of trainers in local institutions.
MIS Specialist	18	Assist AIFRERMA in establishing FRERM infrastructure maintenance MIS in the three subprojects; and assist developing and operationalizing project performance monitoring system (PPMS) for the Project 1 and the entire AIFRERMIP.

<b>Designation</b>	<b>Duration (p-m)</b>	<b>Responsibilities</b>
Survey and Data Specialist	18	Assist outlining river and land surveying requirements; assist in establishing survey and data management systems, specifying standard software, and standardizing data presentation. Assist the capacity development on survey and data management.
GIS Specialist	12	Assist outlining river and land surveying requirements; assist in establishing survey and data management systems that will use GIS, and standardizing data presentation. Assist the capacity development on survey and data management.
Subtotal	<b>169</b>	
Total	<b>239</b>	

**Reports and Deliverables.** The consultants will furnish the following reports and deliverables in English in accordance with the agreed program. These will include:

[Inception, progress, mid-term review, and completion reports]

- Inception Report (draft submitted within 2 months of mobilization and finalized within 3 months of mobilization)
- Quarterly Progress Reports (within 30 days of the end of each quarter)
- Mid-term Report (middle of year 3)
- Tranche-1 and Tranche-2 Completion Reports (draft submitted 3 months prior to tranche completion and finalized within 3 months after tranche completion)

[Technical reports and other deliverables]

- State IFRERM strategy and planning framework (end of tranche-1) and investment plan (end of tranche-2)
- Capacity development plan and training modules (updated by end of tranche-1)
- Data and knowledge base reports for hydro-meteorology, morphology, floods, erosion and flood damage data (end of tranche-1 and of tranche-2)
- Reports on short-term riverbank erosion prediction modeling and warning systems (updated annually)
- Reports on morphological behavior of the Brahmaputra River surrounding subproject areas towards long term planning (end of tranche-1)
- Guidelines for riverbank protection, including planning, programming, design, construction management and supervision, quality control, survey and monitoring, adaptation and maintenance (draft by the end of tranche-1)
- Guidelines for CBFRM (draft by the end of tranche-1)
- Reports on nonstructural tools developed under AIFRERMIP including mass awareness tools, flood and riverbank erosion hazard maps for subproject areas, etc. (by end of tranche-1, updated in tranche-2)
- Report on flood simulation modeling using selected hydrologic/hydraulic models and program for strengthening of flood forecasting and improving warning system (end of tranche-1, and tranche-2)
- FRERM infrastructure asset inventory and MIS for performance monitoring and planning of maintenance/adaptation (for AIFRERMIP subprojects)
- Draft concept note for possible AIFRERMIP phase 2 project (end of tranche-1)
- Reports on action research for IFRERM by local academic and other institutions supported under AIFRERMIP (annual)
- Contributions to international conference and seminars on AIFRERMIP findings, lessons, and new technology and knowledge products

## **Package B: Project Management Consultants**

**Scope of Work.** The consulting services will be provided by international consulting firms in association with domestic consulting firms, engaged in accordance with the ADB's Guidelines on the Use of Consultants. The consultant team will ensure that the executing agency—Assam Integrated Flood and Riverbank Erosion Risk Management Agency (AIFRERMA)—receives the necessary support to implement the AIFRERMIP and meet the core goals of integrated flood and riverbank erosion risk management (FRERM) with community focus. The substantial field work requires dedicated and dynamic field teams guided by experienced experts at the headquarter level.

The Package B consultants are assigned to assist the PMU of AIFRERMA and partner organizations including WRD, Assam State Disaster Management Authority (ASDMA) and other line departments to operationalize the implementation arrangements of the AIFRERMIP. The Package B will primarily support the implementation of Part B (comprehensive FRERM programs) and Part C (multidisciplinary project management systems) of AIFRERMIP, including (i) supporting the implementation of structural measures for three subprojects, while ensuring quality works implemented in a timely and adaptive manner, (ii) supporting the implementation of non-structural measures with special focus on community based activities, and (iii) supporting the designs for tranche 2 structural and non-structural works.

On the basis of the field level experience, the consultants will also provide inputs to the Package A consultants in assisting the SGOA to implement Part A (development of FRERM planning, institutional and knowledge bases) activities. They will also follow the advice of Package A consultants in terms of the phased structural implementation of the riverbank protection works and their design and implementation approach. The consultants will also be responsible for the delivery of formal and non-formal training activities for Part B and Part C of the AIFRERMIP. Overall training program consolidation and delivery will also be coordinated by a training coordinator in Package A consulting services.

**Overall Resource Requirements.** The overall composition is shown in the following table.

**Table 6B.1 Consulting Services Inputs (Package B)**

<b>Position</b>	<b>Person-months</b>
1. International Consultants	
FRERM Engineer/ International Team Leader	22
Construction Engineer	18
Resettlement Specialist	4
Environment Specialist	4
<b>Subtotal</b>	<b>48</b>
2. National Consultants	
FRERM Specialist/ National Team Leader	66
Community Flood Risk Mgt Specialist/ National DTL	55
Infrastructure Design and Construction Engineer	24
Social Development Specialist (Gender)	42
Site Engineers (3 positions)	114
Financial Management Specialist	20
Procurement Specialist	20
Resettlement Specialist	38
Environment Specialist	24
<b>Subtotal<sup>17</sup></b>	<b>403</b>
<b>Total</b>	<b>451</b>

<sup>17</sup> In addition, three CBFRRM field supervising experts are included for a total of 108 person-months to provide regular support from PMU and consultant teams to the NGOs engaged.

**Key Tasks Assigned.** Key tasks assigned to the individual consultants in the package B team are shown in the following table.

**Table 6B.2 Task List of Consultants (Package B)**

<b>Designation</b>	<b>Duration (p-m)</b>	<b>Responsibilities</b>
<b>International Consultants</b>		
FRERM Engineer/ Team Leader	22	Guide, direct, manage and report on Team inputs and outputs; provide technical support to the PD; assist with operationalizing monitoring systems; support sufficient training and capacity development in AIFRERMIP implementation; guide design, procurement, and implementation of structural and nonstructural works; and lead the preparation of tranche-2 package.
Construction Engineer	18	Guide and support establishing and operationalizing efficient procurement, construction supervision, and quality control systems for the civil works following the international standards; and provide field level operational support to this end.
Resettlement Specialist	4	Perform an independent “due diligence” review of resettlement processes prior to release of the subsequent tranche(s) of the MFF, and provide guidance on the implementation of the social safeguards plans.
Environment Specialist	4	Perform an independent “due diligence” review of environmental parameters and management systems prior to release of each tranche(s) of MFF, and provide guidance on the implementation of the environmental management and monitoring plans.
Subtotal	<b>48</b>	
<b>Domestic Consultants</b>		
FRERM Specialist/ National Team Leader	66	Guide, direct, manage and report on Team inputs and outputs; provide technical support to the PD; assist with operationalizing monitoring systems; assist training and capacity development in AIFRERMIP implementation; assist design, procurement, and implementation of structural and nonstructural works; assist the preparation of tranche-2 package; and play the role of TL in the latter's absence.
Community Flood Risk Management Specialist/ National Deputy Team Leader	55	Guide the planning and implementation of CBFMR works while supporting capacity development of staff, NGOs, and stakeholders; facilitate the participatory decision making of AIFRERMIP implementation at district and block levels; facilitate the community mobilization for construction supervision and routine maintenance; and assist the preparation of tranche-2 package.
Infrastructure Design and Construction Engineer	24	Advise infrastructure design, procurement preparation, and construction management; train AIFRERMIP staff on design and construction methodology of FRERM infrastructure adopting new technologies; and assist preparation of the DPRs for Project 2.

<b>Designation</b>	<b>Duration (p-m)</b>	<b>Responsibilities</b>
Social Development Specialist (Gender)	42	Assist in strengthening the participation of women and vulnerable groups in the DMCs, CBFRM village committees, and other institutions; provide relevant training to AIFRERMIP staff, NGOs, and stakeholders
Site Engineers (3 positions)	114	Advise SIOs and contractors for operationalizing efficient construction management and quality control systems; and regularly check and document work quality and quantity; and report the progress to SIOs, stakeholders, and AIFRERMA.
Financial Management Specialist	20	Assist AIFRERMA in establishing sound financial and management accounting system in line with SGOA's and ADB's management system; assist its computerization; assist their appropriate operations.
Procurement Specialist	20	Assist DOWR in procurement document preparation, bid evaluation, and contract administration for the project in line with appropriate SGOA and ADB guidelines.
Resettlement Specialist	38	Support, monitor, and report the implementation of the resettlement and rehabilitation activities on a day-to-day basis; assist NGO supervision; facilitate the works of district administration; facilitate grievance resolution; arrange external monitoring of RP implementation; prepare and implement further RPs for Project 1 and Project 2; and assist international specialist in performing an independent "due diligence" review.
Environment Specialist	24	Support establishment of the environmental monitoring and management system, and its day-to-day operation; update EIAs based on updated design of Project 2; and support the international specialist to perform an independent "due diligence" review of environmental parameters.
Subtotal	<b>403</b>	
Total	<b>451</b>	

**Reports and Documents.** The consultants will furnish the following reports and documents in English in accordance with the agreed program. These will include:

[Inception, progress, mid-term review, and completion reports]

- Inception Report (draft submitted within 2 months of mobilization and finalized within 3 months of mobilization)
- Quarterly Progress Reports (within 30 days of the end of each quarter)
- Mid-term Report (middle of year 3)
- Tranche-1 and Tranche-2 Completion Reports (draft submitted 3 months prior to tranche completion and finalized within 3 months after tranche completion)

[Technical reports and other deliverables]

- Reports associated with PFR-2/ tranche-2
  - Draft PFR-2 and associated documents including project description, detailed costing, and procurement plan
  - Detailed project reports for tranche-2

- Detailed designs and bidding documents for tranche-2 works
- Update of subproject feasibility study reports
- Updated EIAs, and resettlement plans for tranche-2 works
- Due diligence reports for tranche-2
- CBFRM plans for the selected flood prone villages
- Training modules and materials for AIFRERMIP implementation
- Guidelines for community participation in routine FRERM infrastructure maintenance
- Performance monitoring and evaluation reports for FRERM infrastructure

### **Package C: Benefit Monitoring and Evaluation (BME)**

**Scope of Work.** The consulting services will be provided by national consulting firm(s) engaged in accordance with the ADB's Guidelines on the Use of Consultants. The consultant team will provide support to the PMU with an independent monitoring and feedback mechanism and produce reports on the status of achievement of the primary goals and objectives of the Project, and or recommend ways to modify the design and implementation to meet the same.

For this purpose, the consultants are assigned to (i) undertake baseline surveys to fill in gaps from the existing survey (undertaken during the project preparatory stage) with indicators including the prevailing socio-economic conditions, livelihoods, water and sanitation, level of affectedness from both flood and river erosion, drainage, community infrastructure including water and sanitation facilities and drainage; and (ii) periodically monitor and update the indicators, including the positive and negative impacts of the project interventions (including land acquisition and resettlement) initiated by the agencies engaged in implementation of the project activities. The consultants will also review the activities and performance of the various organizations engaged under the AIFRERMIP, including the project organizations, NGOs, and community organizations. Performance and quality of the various structural and nonstructural work provided under the Project will also be monitored and reported.

The collected data will form an essential part of the Project performance monitoring system (PPIS) for the Project 1 and the Investment Program performance monitoring system (IPIS) for the AIFRERMIP. The BME reports will be submitted in three phases (middle of year 1, end of year 3, and end of year 6 towards completion of the project), and will include details, analysis and recommendations to allow PMU to react decisively to ensure corrective steps are taken at appropriate times to achieve the goals and objectives of the project as envisaged.

**Consultant Team and Resource Requirement.** The BME study requires a multidisciplinary team to meet the different demands of the assignment and should therefore have experience in participatory research, analysis, planning in sustainable development, technical analysis and social assessment. The team should comprise of the following type of consultants with strong academic and practical expertise:

**Table 6C.1 Consultant Resource Requirement**

<b>Sl. No.</b>	<b>Consultant profile</b>	<b>Position in the Team</b>	<b>Person-months</b>
1	Monitoring and Evaluation Specialist	Team Leader	9
2	Flood Risk Management Specialist	Deputy Team Leader	9
3	Statistical Analysis Expert	Specialist	5
4	Institutional Development Expert	Specialist	4
5	Disaster Management Expert	Specialist	6
6	IT Specialist	Specialist	4
7	Economist	Expert	2
8	Support Staff (3 nos)	Analysts	12
9	Survey Coordinator	Expert	6
10	Secretarial Services	Addl.Support Staff	6
<b>Total</b>			<b>63</b>

**DELIVERIES AND SCHEDULE.** The outputs and the time schedule for deliveries will be as follows:

<b>S. No</b>	<b>Deliverables</b>	<b>Time Schedule</b>
1.	Mobilization, presentation of an inception report including work plan, methodology, indicators, detailed work schedule and proposed questionnaire for conducting survey with a sample pilot survey, with collection of gender disaggregated baseline	30 days from the date of signing the contract.
2	Supervision of survey activity and training of survey personnel in the districts.	30 days from date of approval of work plan, methodology, etc.
3.	Random audits and analysis of data collected, including gender disaggregated data	3 Months while data collection is in progress
4.	Workshop presentation of draft report of baseline for comments/suggestions etc. and incorporation of the same in the final report for Phase -1	By end of the 5 <sup>th</sup> Month
5.	Phase-2 survey including gender disaggregated data, analysis and submission of draft Phase-II evaluation report	By November 2012
6.	State level Workshop to present draft report findings for comments/suggestions from stakeholders & Govt.	Within 30 days of submission of draft report.
7.	Submission of Phase-2 Final Report incorporating the comments and suggestions from the workshop	Within 15 days from date of the Workshop.
8	Phase-3 survey including gender disaggregated data, analysis and submission of draft Phase-II evaluation report	By October 2016
9	State level Workshop to present the draft report findings for comments/suggestions from all stakeholders and Government	Within 30 days of submission of draft report.
10	Submission of Phase-2 Final Report incorporating the comments and suggestions from the workshop	Within 15 days from date of the Workshop or before 15-12-2016

#### **E. Procurement Control Summary Sheet (PCSS)**

50. AIFRERMA, upon signing various procurement contracts shall forward a copy of the signed contract to ADB requesting issue of Procurement Control Summary Sheet (PCSS) number to facilitate financial monitoring of expenditure under the contract both by AIFRERMA and ADB. The PCSS number shall be referred to in the SOE sheet for all expenditure claims against the respective contracts, submitted to ADB for reimbursement.

51. ADB reserves the right to disallow utilization of loan proceeds if it is unable to agree with the recommendations of AIFRERMA on either the bidding documents or bid evaluation reports. Any contract variations during the contract execution beyond the limit specified in the corresponding bidding document will require ADB's prior approval.



## VI. SAFEGUARDS

52. The AIFRERMA will ensure that all the requirements prescribed in the following frameworks that have been prepared with respect to the Facility will be complied with during the processing and implementation of the projects under the Facility,<sup>18</sup> which are shown in **Appendix 1**.

- (i) Resettlement framework
- (ii) Indigenous Peoples Development Framework
- (iii) Resettlement plans for Palasbari, Kaziranga, and Dibrugar subprojects for the flood embankment renovation/ extension works under Project 1
- (iv) Environmental Impact Assessments (EIAs) of the three subprojects and Summary EIA including the environmental management plan (EMP) to be applicable for entire MFF as well as Project 1
- (v) Environmental Assessment and Review Procedure to be applicable to community-based flood risk management (CBFRM)

53. Within AIFRERMA, social and environmental safeguards unit will be established comprising land acquisition expert, resettlement expert, and environmental expert to perform the following functions.

- (i) Maintain and update social and environmental safeguards MIS.
- (ii) In accordance with the concerned safeguards frameworks including the EIAs, ensure that safeguards documents as required are prepared
- (iii) Ensure all safeguards requirements are fulfilled.
- (iv) Monitor subprojects to ensure safeguards compliance in accordance with safeguards documents prepared.
- (v) Provide training and capacity building to the project staffs and other agents involved in its implementation.
- (vi) Provide information to SGOA, the Government, and ADB, in accordance with the project performance management system (PPMS) on safeguards.

54. Prior to the preparation of each PFR, the applicability and relevance of each safeguard framework for environmental assessment, involuntary resettlement, and indigenous people will be reviewed and updated by AIFRERMA as appropriate, to ensure relevance and consistency with applicable laws and regulations in India and ADB's safeguard policies.

55. In all cases, for each new PFR preparation, AIFRERMA will review its ongoing projects to check on the status of compliance with the safeguards plans and frameworks, and submit the review reports to ADB, together with other required safeguard documents relevant to the Investment Program included in the tranche being processed. In any case, if major noncompliance is discovered in the course of the review of ongoing projects, a corrective action plan will be prepared for implementation and submitted to ADB for the latter's concurrence.

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<sup>18</sup> The safeguard frameworks cover the Facility specific information and requirements in accordance with the Borrower's and State's laws and regulations, and ADB's Safeguards Policy Statements 2009 (SPS) wherein (i) the general anticipated impacts of the projects likely to be financed under the Facility on the environment, involuntary resettlement, and indigenous peoples; (ii) the safeguard criteria that are to be used in selecting projects; (iii) the requirements and procedure that will be followed for screening and categorization, impact assessments, development of management plans, public consultation and information disclosure, and monitoring and reporting; and (iv) the institutional arrangements (including budget and capacity requirements) and AIFRERMA and ADB's responsibilities and authorities for the preparation, review and clearance of safeguard documents.

## A. Environment Safeguards

56. For each of the three subprojects included in the Investment Program, EIA was carried out, along with the summary EIA (SEIA). The EIAs cover the impacts of both tranches of the MFF in the three subprojects, and will be updated for the second tranche if the project design is changed based on the implementation and monitoring results of the first tranche. Under each Project, systematic monitoring will be carried out in accordance with the environmental management plan (EMP) and environmental monitoring plan as specified in the EIAs. Mitigation measures will be provided in case any unexpected effects caused by the subprojects are observed. The responsibility of implementing the EMP will be AIFRERMA and will be primarily led by senior environmental expert.

57. In addition to the EIAs and SEIA, an environmental assessment and review framework has been prepared for the minor CBFMR measures. An initial environmental examination (IEE) will be carried out in consultation with the communities, with the definition of the community specific EMP as necessary.

## B. Social Safeguards

58. **Resettlement.** Strip acquisition of land is needed in association with the shifting of embankments to cope with riverbank erosion or its widening to increase its heights in response to the rising bed levels. For the purpose of the Investment Program a resettlement framework (RF) for the entire subprojects and a full resettlement plan (RP) for the tranche-1 works of Dibrugarh, Kaziranga, and Palasbari subprojects were prepared and agreed following the Government's and SGOA's laws and regulations, ADB's *Involuntary Resettlement Policy*, which are disclosed.<sup>19</sup> The Project-1 will require acquisition of no land in Dibrugarh (embankment widening on the existing public land having squatters), 20.6ha in Kaziranga (for inner secondary defense line), and 29.9 ha in Palasbari subproject (for shifting), with estimated number of affected households totaling 310, 80, and 274, respectively. Further RPs will have to be prepared and implemented in accordance with the RF in case of any additional impacts on land acquisition and resettlement in association with the infrastructure works under Project 1.

59. All affected persons (APs) are entitled to compensation towards land acquired and loss of assets at their replacement cost. They will also be assisted in improving, or at least restoring, their pre-intervention income and livelihoods standards, and productive capacity. Compensation payments for acquired lands, structures, and other eligible benefits will be fully paid prior to the commencement of civil works contracts that include ground leveling and demolition of structures. The RPs as prepared for the subsequent PFR(s), and those for finalization with detailed designs, will be sent to ADB for approval, prior to which they should be endorsed by the EA and disclosed to the public. An independent monitoring and evaluation agency will also be engaged to assess performance and impacts.

60. **Indigenous Peoples.** In Assam, indigenous peoples account for 12% of the population and their concentration widely vary across the state. Their proportion is found at 6% in Dibrugarh, 23% in Kaziranga, and 10% in Palasbari subproject and are as plain tribes whose social, economic, and cultural characteristics do not differ significantly from other social groups. Indigenous peoples issues are found insignificant at least for Project-1, and any negative impact

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<sup>19</sup> Kaziranga RP has been posted at <http://www.adb.org/Projects/project.asp?id=38412>. The RP for Palasbari and Dibrugarh has been posted upon clearance by RSDD. Palasbari RP will also be updated after retired embankment alignment is finalized following the riverbank stabilization works through revetment.

is addressed in the RPs. An indigenous peoples development framework has been prepared and posted in the website to ensure that appropriate indigenous peoples development plans or specific actions are prepared to enable equal sharing of benefits in future project works of the concerned subprojects.

## VII. Gender and Social Dimensions

61. **Social Development and Poverty Reduction.** The AIFRERMIP will implement the social development and poverty reduction strategy dated 13 February 2009. The strategy envisages the specific directions at the following four levels:

- (i) Ensuring that implementation guidelines, staff awareness raising and capacities to mainstream stakeholder participation in FRERM planning and implementation, in line with Disaster Management Act and 11<sup>th</sup> FYP;
- (ii) Pursuing organization and capacity development of DMCs with due representation of vulnerable groups as a sound platform of participatory decision making and ensuring accountability of program delivery agencies;
- (iii) Pursuing specific actions and programs targeting vulnerable groups in the AIFRERMIP programs with effective linkage to the existing poverty reduction programs (such as self-help groups); and
- (iv) Ensuring compliance with social safeguards measures.

62. **Gender Actions.** The AIFRERMIP will implement the Gender Action Plan (GAP) dated 24 July 2009 as agreed by the SGOA for implementation as feasible, which is summarized in Table 7.1 below. The GAP was prepared to support the policy principles of 11<sup>th</sup> FYP for economic, social, and political empowerment of women.

63. **Labor, Health, and Social Protection.** AIFRERMA will ensure that civil works contracts under each project follow all applicable labor laws of the Government and the State and that these further include provisions to the effect that contractors; (i) carry out HIV/AIDS awareness programs for labor and disseminate information at worksites on risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction; (ii) do not use children as labor, and (iii) follow legally mandated provisions of labor (including equal pay for equal work), health, safety, sanitation, welfare and working conditions. The contracts shall also include clauses for termination in case of any breach of these provisions by contractors.

**Table 7.1: Summary Gender Action Plan <sup>20</sup>**

Activities	Design features, measures and monitoring indicators	Responsible Agency	Time Frame
<b>Component A: Policy, Planning, Institutional and Knowledge Bases</b>			
1. Sex-disaggregated baseline survey and monitoring.	<ul style="list-style-type: none"> <li>Quantitative and qualitative sex-disaggregated data collected through baseline survey in intervention and control sites on a set of agreed indicators, to measure attitude and behavior changes, and the socioeconomic impacts (see details below).</li> </ul>	AIFRERMA, WRD	Year 1, 4, 7 of the Project for evaluation data
<b>Component B: Institutionalization of Comprehensive FRERM Programs</b>			
2. Public awareness campaign and social mobilization.	<ul style="list-style-type: none"> <li>Project information dissemination meetings held in the three sub-project sites [targets: (i) At least 30% participation of women's community members; and (ii) At least 30% of women-focused and/or women-led organizations including SHGs, CBOs, and NGOs (based on Assam Women Act, 2005)].</li> </ul>	AIFRERMA, WRD	Monitoring data
3. Establishment of inclusive community-based Flood Risk Management Committees (FRMCs) at the village level	<ul style="list-style-type: none"> <li>FRMCs established in all three sub-project sites [target: At least 30% women's representation at each level (based on UNDP's Community-Based Disaster Risk Management Program).</li> <li>Female sub-FRMCs established –as needed- where socio-cultural practices require them and when women's active participation can be better sought through female only committees.</li> </ul>	AIFRERMA, WRD, NGO	Year 1-3
4. Socially-inclusive and gender-responsive community-based decision-making and training	<ul style="list-style-type: none"> <li>At least 30% of women's representation in all community-based decision-making processes for community-driven small work implementation.</li> <li>At least 30% of women's representation in training programs on flood and river erosion risk management.</li> </ul>	AIFRERMA, WRD, NGO	Year 1-3
5. Inclusion of community and their organizations' views on structural measures.	<ul style="list-style-type: none"> <li>Joint walk-through with WRD, communities including their organizations held prior to determining the final design of the structural interventions e.g.- river embankment construction/strengthening, platforms etc [targets: (i) At least 30% participation of women's community members; and (ii) at least 30% of women-focused and/or women-led organizations].</li> </ul>	AIFRERMA, WRD	Year 1-3
6. Community-based implementation, O&M of the structures of the Project.	<ul style="list-style-type: none"> <li>Communities adjacent to structural interventions will participate in manual labor and routine O&amp;M in project-supported structures (e.g. embankment system renovation and strengthening, riverbank</li> </ul>	AIFRERMA, WRD	Year 3-7

<sup>20</sup> ADB operations are guided by its Gender and Development Policy (1998) and the GAD Plan of Action 2008-2010 (see OMC2). This Gender Action Plan (GAP) has been developed in line with the Government of India (GOI)'s 11th Five-Year Plan, Assam Women Act, 2005, and its stated commitment to gender mainstreaming in all sectors. It has been discussed and cleared with the Water Resource Department and the Social Welfare Department in Assam, and will be promoted where feasible.

Activities	Design features, measures and monitoring indicators	Responsible Agency	Time Frame
	protection, and associated infrastructure [target: At least 30% women's participation].		
<b>Component C: Program Management and Associated Capacity Building</b>			
7. Representation of SWD of Assam in AIFRERM Agency	<ul style="list-style-type: none"> <li>SWD of Assam is represented in the Governing Body of AIFRERM Agency [Executing Agency], providing program implementation and coordination guidance.</li> </ul>	AIFRERMA, WRD	Year 1
8. Women's representation in the PMU established in AIFRERMA. The PMU will be composed of: internal staff (from WRD, Disaster Management and Revenue Departments) and complemented by external staff.	<ul style="list-style-type: none"> <li>Subject to availability of qualified women, 20% of the external staff to be placed in the PMU would be women.</li> <li>Promote women's representation in AIFRERMA units: (i) FRERM technical unit, (ii) institutional strengthening and disaster risk management unit, (iii) SEU, and (iv) finance and accounting unit.</li> <li>50% of experts to be placed in the SEU be women trained in social development issues (including GAD) preferably applied to social safeguards and participatory development</li> </ul>	AIFRERMA, WRD	Year 1-2
9. Recruit a Social Development and GAD Specialist at the PMU's SEU	<ul style="list-style-type: none"> <li>Subject to availability of appropriate candidate, the social development/GAD Specialist will ensure that the relevant issues and approaches are mainstreamed throughout the project cycle and the all gender design features in the GAP implemented.</li> </ul>	AIFRERMS, WRD	Year 1
10. Women's representation in the SIO established at field level <sup>21</sup>	<ul style="list-style-type: none"> <li>Subject to availability, one officer in the DRM&amp;C team of SIO would be a qualified woman.</li> <li>Target 50% of support service teams from NGO to be women.</li> </ul>	AIFRERMA, WRD	Year 1-2
11. Conduct gender sensitivity training to PMU and SIO staff.	<ul style="list-style-type: none"> <li>Social Development/GAD Specialist to conduct gender sensitivity trainings to at least 75% of the staff working on the Project. Training would be decided based on needs assessment.</li> </ul>	AIFRERMA	Year 1-7
12. Women's representation in DCC established at subproject level	<ul style="list-style-type: none"> <li>SWD of Assam is represented at the DCC. Target 15% of female representatives from DRM&amp;Cs to participate DCC meetings.</li> </ul>	AIFRERMA, WRD, NGO	Year 1-7

<sup>21</sup> An SIO will be established—at the field level in each subproject site. They will comprise: (i) technical team, (ii) disaster risk management and coordination team, composed of: land acquisition officer, resettlement officer, environment officer, NGO coordinator and two persons per subproject site as support service teams recruited from NGO for social mobilization and risk management.

## VIII. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

### A. Project Design and Monitoring Framework

**Table 9.1: Design and Monitoring Framework (Facility)**

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
<p><b>Impact</b> Reduced economic vulnerability and social disruption caused by flood and riverbank erosion risks in Assam state.</p>	<p><i>From 2020:</i></p> <ul style="list-style-type: none"> <li>• Higher economic growth in Assam project areas compared with flood prone areas</li> <li>• Reduced poverty incidence by 5-10%</li> <li>• Sustained agricultural growth in subproject areas arising from (i) reduced crop production losses due to floods and riverbank erosion; (ii) 20% increase in monsoon crop yields; and (iii) increased on-farm employment by 900,000 person-days/yr</li> <li>• Better land value in the benefit areas</li> </ul>	<ul style="list-style-type: none"> <li>• SGOA annual economic development reports</li> <li>• State and department statistics on agriculture, fisheries, incomes, revenue and HDIs</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Stable political and local security conditions</li> <li>• SGOA replicates similar projects in other flood prone areas</li> <li>• Sustainable maintenance of FRERM infrastructure by SGOA</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Natural calamities beyond the design return period</li> <li>• International terms of trade for agriculture products turn adverse</li> </ul>
<p><b>Outcome</b> FRERM systems in Assam provide enhanced resilience to flood and riverbank erosion risks in selected subproject areas along the Brahmaputra River, benefiting about 1 million people.</p>	<p><i>By 2020:</i></p> <ul style="list-style-type: none"> <li>• Sustained reduction of annual flood damage and rehabilitation cost cost from the current average of Rs350 million/yr (1988-2008)</li> <li>• No flood damages due to embankment breach caused by flood or riverbank erosion</li> <li>• Reduced land lost by riverbank erosion within protected areas of the project from current average. loss of 230ha/yr</li> <li>• Urban, agricultural and other flood prone lands in 70km critical reaches of the Brahmaputra protected from floods and riverbank erosion</li> </ul>	<ul style="list-style-type: none"> <li>• Annual reports of CWC, AIFRERMA, WRD, MOWR, ASDMA and their websites</li> <li>• State statistics on agriculture and lands (e.g., Public Works Dept.: roads and public buildings; district office: residential properties; Dept. of Fisheries)</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Stable political and local security conditions</li> <li>• Sustainable maintenance of FRERM infrastructure by SGOA</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Natural calamities beyond the design return period</li> </ul>
<p><b>Outputs</b> 1. Integrated FRERM planning, institutional and knowledge bases developed and effectively implemented in Assam</p>	<p><i>By 2017:</i></p> <ul style="list-style-type: none"> <li>• Assam State Water Policy adopted, and integrated FRERM aspects progressively implemented</li> <li>• Comprehensive State FRERM Plan (prepared and implemented with stakeholder consultation) is adopted and its implementation started</li> <li>• Performance of FRERM agencies improved and aligned with above, and supported by CDP</li> <li>• Sound data and knowledge base developed and strengthened</li> <li>• Knowledge sharing and networking established and contributing to knowledge transfer and sharing at national and international levels</li> </ul>	<ul style="list-style-type: none"> <li>• SGOA economic devt. reports and district statistics</li> <li>• SGOA relevant depts. reports</li> <li>• AIFRERMA and WRD annual reports</li> <li>• AIFRERMA project progress and completion reports</li> <li>• AIFRERMA MIS</li> <li>• WRD MIS for monitoring and planning scheme maintenance</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• State support to sustain and proceed with reforms</li> <li>• FRERM institutions including AIFRERMA and DMOs sustain their performance targets</li> <li>• Beneficiary willingness to participate in DRM activities</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• High turnover of trained staff in FRERM institutions</li> </ul>

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
<p>2. Comprehensive FRERM non-structural and structural measures developed, implemented and sustainably maintained in selected subproject areas, protecting flood prone areas along 90km critical reach of the Brahmaputra River having 97,500 ha of urban and productive agriculture land</p>	<ul style="list-style-type: none"> <li>• DMOs established and strengthened at district, block and GP and highly vulnerable villages, with women participation (30%)</li> <li>• Nonstructural and other CBFRM measures, including CBFRM investments in place (2017)</li> <li>• Cost-effective FRERM structural measures completed in subproject areas with requisite social and environmental safeguards: <ul style="list-style-type: none"> <li>➢ 43km flood embankments renovated or newly constructed</li> <li>➢ 37km riverbank protection works</li> <li>➢ 10 spurs and 9 sluice gates</li> </ul> </li> <li>• Short- to medium-term measures for sustainable maintenance and adaptation, as set out under the sector roadmap, in place within agreed timeframe</li> </ul>	Same as above	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Timely consultant and NGO engagement, procurement, and land acquisition</li> <li>• Quality of construction and nonstructural works maintained with due quality control</li> <li>• Staff capacities strengthened and retained with training and consultant support</li> <li>• Stakeholder willingness to participate in DMOs</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Extreme floods and earthquakes</li> </ul>
<p>3. Institutional and financial capacities of FRERM institutions in Assam developed and strengthened</p>	<ul style="list-style-type: none"> <li>• Specific measures on participatory mechanisms and social devt., including gender actions, as provided in the sector roadmap, incorporated into FRERM operations within agreed timeframe</li> <li>• Actions to support institutional reforms fully in place by time of Program completion</li> <li>• Integrated FRERM programs introduced and replicated in other affected districts from 2017 onwards</li> </ul>	Same as above	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Timely consultant engagement</li> <li>• Staff capacities strengthened and retained with training and consultant support</li> <li>• Stakeholder willingness to participate in DMOs</li> </ul>
<b>Activities with Milestones</b>		<b>Inputs</b>	
<p><b>Activity 1: Tranche 1</b></p> <p>1.1 Specific policy and institutional actions, as set out in roadmap, completed by December 2010)</p> <p>1.2 ADB approves Tranche-1 by Oct 2010</p> <p>1.3 Contract award of consultants and 1<sup>st</sup> year civil works by Dec 2010</p> <p>1.4 Tranche- 1 implementation completed in 4 years (by 2014)</p> <p>1.5 Proposal for Tranche 2 completed and submitted by AIFRERMA by Dec 2012</p> <p><b>Activity 2: Tranche 2</b></p> <p>2.1 ADB approves Tranche-2 by Apr-2013</p> <p>2.2 Tranche-2 implementation completed by 2017</p>		<p><b>ADB: \$120 million</b></p> <ul style="list-style-type: none"> <li>• Civil works and related materials: \$99.0 million</li> <li>• Resettlement: \$1.2 million</li> <li>• Training: \$2.2 million</li> <li>• Research: \$3.2 million</li> <li>• Consultants, NGOs, and local institutes: \$7.8 million</li> <li>• Project Management and Others: \$6.6 million</li> </ul> <p><b>Government: \$30 million</b></p> <ul style="list-style-type: none"> <li>• Counterpart fund for implementation: \$17.9 million (including project personnel)</li> <li>• Financial charges: \$12.1 million</li> </ul>	

Table 9.2: Design and Monitoring Framework (Project 1)

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
<p><b>Impact</b></p> <p>FRERM systems in Assam provide enhanced resilience to flood and riverbank erosion risks in selected subproject areas along the Brahmaputra River, benefiting about 1 million people.</p>	<p><i>By 2020:</i></p> <ul style="list-style-type: none"> <li>• Sustained reduction of annual flood damage and rehabilitation cost from the current average of Rs350 million/yr (1988-2008)</li> <li>• No flood damages due to embankment breach caused by flood or riverbank erosion</li> <li>• Reduced land lost by riverbank erosion within protected areas from the current average loss of 230 ha/yr in the subprojects area</li> <li>• 97,500 ha of agricultural and nonagricultural lands protected from floods and riverbank erosion</li> </ul>	<ul style="list-style-type: none"> <li>• Annual reports of CWC, AIFRERMA, WRD, MOWR, ASDMA and their websites</li> <li>• State statistics on agriculture and lands (e.g., Public Works Dept.: roads and public buildings; district office: residential properties; Dept. of Fisheries)</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Stable political and local security conditions</li> <li>• Sustainable maintenance of FRERM infrastructure by SGOA</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Natural calamities beyond the design return period</li> </ul>
<p><b>Outcome</b></p> <p>SGOA provides reliable, effective and sustainable FRERM systems in selected subproject areas in Assam along the Brahmaputra River</p>	<p><i>By 2013-2014:</i></p> <ul style="list-style-type: none"> <li>• FRERM systems in 3 subproject areas fully operational and supported by riverbank erosion prediction, advance warning and other state wide programs with: <ul style="list-style-type: none"> <li>– Reduced flood damages due to embankment breach</li> <li>– Reduced land lost by riverbank erosion along the protected reaches</li> <li>– Critical flood warnings must be issued to communities at least 24-hr lead time equally benefiting women</li> <li>– All erosion vulnerable families receive advance warning</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• AIFRERMA progress and completion reports</li> <li>• AIFRERMA MIS</li> <li>• Annual reports of AIFRERMA, WRD, ASDMA/DDMAs and their websites</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Sustainable maintenance of infrastructure</li> <li>• FRERM institutions including DMOs sustain their performance targets</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Natural calamities beyond the design return period</li> </ul>
	<ul style="list-style-type: none"> <li>• Institutional performance of relevant FRERM institutions improved: <ul style="list-style-type: none"> <li>– Appropriate institutional setup and functions for integrated FRERM in place by 2011</li> <li>– AIFRERMA delivering satisfactory FRERM programs</li> <li>– DMCs functioning effectively to the satisfaction of local stakeholders &amp; 30% women representation by 2017</li> <li>– FRERM infrastructure maintained satisfactorily in coordination with DMOs with increased fund allocation by SGOA and central financing by 2017</li> <li>– SGOA starts to replicate similar programs in other areas by 2017</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Baseline data and BME reports by AIFRERMA</li> <li>• AIFRERMA MIS</li> <li>• WRD MIS for monitoring and planning scheme maintenance</li> <li>• Annual reports of AIFRERMA, WRD, Dept. of Rural Devt. and ASDMA annual reports and websites</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• State support to sustain and continue institutional and financial reforms</li> <li>• Project institutions incl. DMCs sustain their performance targets</li> <li>• Beneficiary willingness to participate in DMCs</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Local or internal conflicts threatening DMOs performance</li> </ul>
<p><b>Outputs</b></p> <p><b>A. FRERM planning, institutional and knowledge basis established</b></p> <p>1. FRERM Policy and Plan Framework fully established</p>	<ul style="list-style-type: none"> <li>• Comprehensive FRERM strategy and planning framework established</li> <li>• Work plans of all FRERM institutions are aligned with the FRERM strategy</li> </ul>	<ul style="list-style-type: none"> <li>• SGOA policy document and policy review reports</li> <li>• State FRERM Plan</li> <li>• AIFRERMA, WRD and ASDMA annual reports</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Political support to sustain and continue with reforms</li> <li>• Active stakeholder support and participation in FRERM activities</li> </ul>



Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
2. Respective roles and key results areas of FRERM institutions clarified and their respective capacities for participatory DRM developed	<ul style="list-style-type: none"> <li>• Multidisciplinary AIFRERMA set up with 20% female representation among external staff</li> <li>• CDP for AIFRERMA, WRD, associated organizations and stakeholders in place by 2012, with robust training needs assessment</li> <li>• As part of CDP, 75% staff fully aware of gender issues</li> <li>• Staff use guidelines and manuals on structural and non-structural measures prepared in accordance with international best practices</li> <li>• Other relevant actions for establishing institutional basis for FRERM, as stipulated in AIFRERMIP sector roadmap, are in place within agreed timeframe</li> </ul>	<ul style="list-style-type: none"> <li>• AIFRERMA, WRD and ASDMA annual reports and websites</li> <li>• CDP and Trainee documentation</li> </ul>	<p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• High staff turnover</li> <li>• Willing and dedicated staff to support the institutional development process</li> </ul>
3. Improved data and knowledge base for integrated FRERM	<ul style="list-style-type: none"> <li>• AIFRERMA and DMOs are using expanded data base to inform their planning and decision making processes on hydrology, geomorphology and physical environment of flood plains</li> <li>• Nonstructural FRERM model tools in place by 2011 for river erosion risk mapping through erosion prediction model, etc.</li> <li>• Research and knowledge development plans and programs are incorporated into State FRERM strategy</li> </ul>	<ul style="list-style-type: none"> <li>• AIFRERMA project progress and completion reports</li> <li>• FRIS comprising river, flood, and infrastructure</li> <li>• Special activity reports and outputs</li> <li>• AIFRERMA and WRD annual reports and websites</li> </ul>	<p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Concerns about data sensitivity with limited or delayed development</li> <li>• Dedicated staff availability</li> </ul>
4. Knowledge sharing and regional networking mobilized and effective working relationships established for undertaking regular investigation and planning, and knowledge management activities	<ul style="list-style-type: none"> <li>• AIFRERMA and DMOs adopt international best practice accumulated from knowledge institutions</li> <li>• AIFRERMA knowledge and experience shared, cited and well documented in Indian and international conferences and knowledge hubs</li> </ul>	<ul style="list-style-type: none"> <li>• AIFRERMA and WRD annual reports and websites</li> <li>• Knowledge hubs related to FRERM in Asia Pacific region and networks on water sector apex bodies or river basin organizations</li> <li>• Conference proceedings</li> </ul>	<p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Concerns about information sensitivity with delayed or restricted participation</li> </ul>
<b>B. Comprehensive FRERM program implemented with DMC participation</b>			
1. Empowered communities play a role in FRERM Programs	<ul style="list-style-type: none"> <li>• In full coordination with ASDMA/DDMAs, DMCs are established at district, block, GP and 75 highly vulnerable villages by 2013, with local NGO facilitation; and are made functional by 2016</li> <li>• DMCs have 30% female representation and involved in decision making process</li> <li>• CBFMR plans are comprehensive and inclusive of programs for flood preparedness, emergency response and relief actions and arrangements and priority investments</li> </ul>	<ul style="list-style-type: none"> <li>• AIFRERMA project progress and completion reports based on its MIS</li> <li>• ASDMA disaster risk management publications</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Effective participation at district and community levels</li> <li>• Support at State and local levels</li> <li>• Timely NGO engagement and their capacities</li> </ul>

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
<p>2. Nonstructural measures are provided to DMCs up to GP; and CBFM provided to highly vulnerable villages</p> <p>3. Cost effective FRERM structural measures provided in the 3 subproject areas</p> <p>4. Sustainable FRERM infrastructure monitoring, maintenance and adaptation institutionalized in the 3 subproject areas</p>	<p><i>By 2012:</i></p> <ul style="list-style-type: none"> <li>• Appropriate nonstructural measures in place: (i) flood and riverbank awareness campaigns, (ii) strengthened flood emergency response, relief &amp; damage assessment systems, (iii) advance flood and erosion warning</li> <li>• In 75 highly vulnerable villages, eligible CBFM investments supported, including minor infra, hazard maps, and adaptive cropping awareness campaigns.</li> <li>• At least 30% programs are provided for women and vulnerable groups</li> <li>• FRERM infrastructure, conforming with international standards, provided with stakeholder satisfaction: <ul style="list-style-type: none"> <li>▪ 19km of flood embankments</li> <li>▪ 18km of riverbank protection</li> <li>▪ 5 sluice gates</li> </ul> </li> <li>• Other minor CBFM infrastructure (e.g. flood shelter platforms, minor dykes operational in 75 villages)</li> <li>• MIS in place for project implementation and complete asset inventory for all subprojects by 2013</li> <li>• Improved and transparent management of fund for maintenance in place at AIFRERMA by 2013</li> <li>• FRERM infrastructure sufficiently maintained with mobilization of local labor and resources for routine works</li> <li>• Regular participatory system with DMCs are operational from 2012</li> <li>• Full participation (20% women) of communities adjacent to dykes in earth works with WRD from 2013</li> <li>• Funds from centrally-sponsored schemes supporting adaptation works (2014)</li> </ul>	<ul style="list-style-type: none"> <li>• AIFRERMA project progress and completion reports based on its MIS</li> <li>• ASDMA disaster risk management publications</li> <li>• AIFRERMA website</li> </ul> <ul style="list-style-type: none"> <li>• Construction completion reports collected by AIFRERMA from contractors and consultants</li> <li>• Project progress and completion reports</li> <li>• AIFRERMA and WRD websites</li> </ul> <ul style="list-style-type: none"> <li>• AIFRERMA project progress and completion reports</li> <li>• AIFRERMA and WRD MIS, annual reports and websites</li> <li>• State Finance</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Participatory process is duly followed by all.</li> <li>• Capacity strengthening and quality control are effective with qualified consultants engaged.</li> <li>• Beneficiaries support collective action</li> </ul> <p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Effective participation at community level</li> <li>• Land acquisition undertaken well in advance</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Price of construction materials soar</li> </ul> <p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• (Same as above)</li> <li>• Damages from excessive natural calamities duly rehabilitated</li> <li>• WRD staff pay due attention to maintenance performance</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Trained and experienced staff are transferred to unrelated assignments</li> </ul>
<p><b>C. AIFRERMA Program Management developed</b></p> <p>1. Appropriate project management system established incl. results monitoring with indicators agreed and baseline data determined</p> <p>2. Capacities of FRERM institutions strengthened</p>	<p><i>By 2010:</i></p> <ul style="list-style-type: none"> <li>• Multi-disciplinary PMU, SIOs established, staffed, and trained, with 20% female representation at PMU and SIOs, and 40% for NGOs support service teams</li> <li>• All staff abide by Project and financial management manuals</li> <li>• MIS and accountability measures for project organizations are in place</li> <li>• CDPs are well targeted and with increased gender awareness</li> <li>• FRERM institutions are provided with full project management support (2010)</li> </ul>	<ul style="list-style-type: none"> <li>• Detailed operational guidelines</li> <li>• AIFRERMA progress reports</li> <li>• Special study reports including the third party</li> <li>• AIFRERMA and WRD annual report and websites</li> <li>• CDP implementation report (by consultants)</li> <li>• Periodic surveys, as required</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Sufficient counterpart funding</li> <li>• Engagement of qualified consultants and NGOs</li> <li>• Retention of the human resource and developed capacities</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Trained and experienced staff are transferred to unrelated</li> </ul>

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
3. Efficient program management	<ul style="list-style-type: none"> <li>• Training programs timely arranged well targeted and participated</li> <li>• Implementation follows approved annual workplan</li> <li>• Procurement, consulting and NGO services and loan disbursement managed in timely manner</li> </ul>		assignments
<b>Activities with Milestones</b>			<b>Inputs</b>
<p><b>1. Investment Program Preparation (within 2010)</b></p> <p>(a) Establishment of AIFRERMA, PMU and SIOs and staff assignments</p> <p>(b) Preparation and finalization of DPRs for phase 1 works</p> <p>(c) All statutory clearances obtained</p> <p>(d) Preparation of all project-related guidelines and manuals incl. implementation plan and CDP</p> <p>(e) Preparation and Finalization of RPs for the tranche-1 works</p> <p>(f) Advance selection of consultants and NGOs</p> <p>(g) Advance procurement of civil works and goods</p> <p><b>2. Investment Program Implementation</b></p> <p><b>2.1 Policy, Planning, Institutional and Knowledge Base</b></p> <p>(a) Institutional roadmap actions implemented as per the stipulated schedule by 2017</p> <p>(b) CDP implemented substantially by 2013, including gender sensitive training provided to at least 75% of the staff working on the project by 2017</p> <p>(c) Data and knowledge system established by 2013 and made fully operational by 2017</p> <p>(d) Establish links with regional knowledge networks by 2013</p> <p><b>2.2 Institutionalizing Comprehensive FRERM</b></p> <p>(a) Nonstructural instruments fully developed by 2013</p> <p>(b) Local DMCs for tranche-1 and tranche-2 works established by 2012 and 2015, respectively, and CBFRLM plans prepared and implemented by 2013 and 2016, respectively.</p> <p>(c) Structural works for tranche-1 implemented as follows</p> <ul style="list-style-type: none"> <li>- RPs implemented by mid 2011 for applicable works</li> <li>- All tenders for 1<sup>st</sup> year works completed and awarded between June 2010 to November 2010</li> <li>- All civil works and goods procurement completed by March 2013</li> </ul> <p>(d) Tranche-2 implementation preparation as follows</p> <ul style="list-style-type: none"> <li>- DPRs for tranche-2 works and updated project concept paper cleared by December 2012</li> <li>- RPs prepared by June 2012 and implemented by June 2013</li> <li>- All tenders completed and awarded between January 2013 to Sept 2014</li> </ul> <p>(e) Establishing maintenance mechanisms for 70km, 35km, and 21km of existing embankments in Palasbari, Kaziranga, and Dibrugarh subprojects by 2014</p> <p><b>2.3 Project Management and Associated Capacity Building</b></p> <p>(a) Immediate training provided to PMU and SIO staffs, and NGOs and other providers by 2010 and project management system fully operationalized by 2011</p> <p>(b) Consultants for institutional strengthening and project management mobilized, and provide effective support from 2010–2017</p> <p>(c) Investment Program management information system (MIS) established by September 2010</p> <p>(d) Prepare and process tranche-2 following the requisite procedures by 2013</p> <p>(e) ADB inception mission by beginning 2011, mid-term review in 2013, and regular review missions undertaken at least twice a year throughout 2016</p>			<p><b>Total: \$71.1 million</b> <b>ADB: \$56.9 million</b></p> <ul style="list-style-type: none"> <li>• Civil works and related materials: \$46.9 million</li> <li>• Resettlement: \$0.7 million</li> <li>• Equipment and vehicles: \$1.1 million</li> <li>• Training: \$0.9 million</li> <li>• Research: \$ 0.6 million</li> <li>• Consultants: \$4.5 million</li> <li>• Project management and others: \$2.1 million</li> </ul> <p><b>Government: \$ 13.1 million</b></p> <ul style="list-style-type: none"> <li>• Counterpart fund for implementation: \$8.7 million (including project personnel)</li> <li>• Financial charges: \$5.5 million</li> </ul> <p><b>Grant assistance:</b></p> <ul style="list-style-type: none"> <li>• TA: \$600,000</li> </ul>

ADB = Asian Development Bank, AIFRERMA = Assam Integrated Flood and Riverbank Erosion Risk Management Agency; AIFRERMIP = Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program; CBFRLM = community based flood risk management and livelihoods, CDP = capacity development plan, CO = community organizer, DMC = disaster management committees, DMO = disaster management organization, DPR = detailed project reports, DRM = Disaster Risk Management, GP = gram panchayat (cluster villages); FRERM = flood and river erosion risk management, FRIS = Flood and River Information System, HDI = human development index, IWRM = integrated water resources management, MIS = management information system, MOWR = Ministry of Water Resources, NGO = nongovernment organization, PMU = project management unit, RP = resettlement plan; SGOA = state government of Assam; SIO = subproject implementation office, WRD = Water Resources Department

## B. Monitoring Requirements

64. **Project Performance Management System (PPMS) and Investment Program Performance Management System (IPPMS).** The AIFRERMA will establish a PPMS for each project/loan and an IPPMS for the Facility within 3 months of effectiveness of the respective project/loan and the Facility, respectively. AIFRERMA will select a set of clearly measurable performance monitoring indicators relating to physical implementation, institutional development, socioeconomic and other conditions, and social and environmental safeguards.

65. **Baseline and Impact Monitoring.** AIFRERMA will engage consultants for benefit monitoring and evaluation (BME) to establish baseline data for the selected indicators, and will conduct annual surveys with the assistance of the consultants, and update the SGOA, GOI, and ADB on the progress against each indicator. The key indicators and assumptions outlined at the impact and outcome levels in the investment program's DMF will be the primary data required for analysis. The BME consultants will submit its findings in three phases, i.e. first report upon engagement, second report during the mid-term review stage of the AIFRERMIP, and final report in the last year of the AIFRERMIP, whereas the data will be annually updated in other years by the project management consultants.

66. **Implementation Monitoring–Compliance.** Quarterly progress reports of AIFRERMA will describe the progress of various loan covenants–policy, institutional, financial, economic, environmental, social, and others. This includes the progress and issues on institutional action matrix shown in Table 2.6.

67. **Implementation Monitoring–Outputs, Activities and Inputs.** AIFRERMA will put into operation the monitoring system of AIFRERMIP outputs, activities, and inputs in accordance with the DMF and the implementation plan (Figure 2.1 and Tables 4.9 and 4.10), against which the progress and performance is monitored.

68. **Contract Awards and Disbursement Monitoring.** For the purpose of accelerating the process of contract awards and disbursement, AIFRERMA will exercise rigorous monitoring. As to contract awards, to avoid delays in bid evaluation as a result of contractors' submission of incomplete bids, a checklist of all the supporting documents, forms, and guarantees will be attached with the bids for future tendering. This will be further discussed during pre-bid meetings. Furthermore, monitoring of agreed time-bound activities from preparation of bid evaluation reports (BER) to award of contracts will be carried out using a checklist (Table 8.1 below) for each action with the given timeframe. Standardized BER will be established and put into operation for smooth and timely bid processing.

**Table 9.3: Action Plan for Preparation and Approval of Bid Evaluation Reports**

Activity	No. of Days	Responsible Agency/Department
Evaluation of Bids and preparation of technical bid evaluation report (TBER)	20-30 days	PMU, AIFRERMA
Receipt, review and comment on TBER	7 days	ADB
EA's incorporation of ADB comments in TBER, (if any)	2 days	PMU, AIFRERMA
Receipt, review and approval of revised TBER	5 day	ADB
Transmission of ADB's no-objection for opening of Financial bids of Technically qualified bidders	1 day	ADB
Opening of Financial Bids	7 days	PMU, AIFRERMA

Activity	No. of Days	Responsible Agency/Department
Evaluation of Bids and preparation of Financial bid evaluation report (FBER)	20-30 days	PMU, AIFRERMA
Receipt and review of FBER	7 days	ADB
EA's incorporation of ADB comments in FBER, (if any)	2 days	PMU, AIFRERMA
Receipt, review and approval of revised FBER	5 days	ADB
Transmission of ADB's approval for recommendation of contract award	1 day	ADB
Notification of award to winning bidder(s)	2 days	AIFRERMA
Contract signing	Within 30 days	AIFRERMA and Contractor

**Note :** The BERs for the first two bids following NCB procedures will be reviewed and approved respectively by COSO, OGC. Subsequent bids will be evaluated and approved by Director SANS/SARD, ADB

69. As to disbursement, ADB's implementation of eStar uploading of withdrawal application at INRM will save about 2-3 weeks of processing time. PMU will also copy to ADB project officer the interim payment certificates, to help intensify ADB's monitoring, expedite processing of withdrawal applications for payments to contractors, and consequently improve the project implementation progress.

70. **Safeguards Monitoring.** Monitoring and reporting for social safeguards are described in the resettlement framework and indigenous peoples development framework for the planning of future works, whereas the concerned resettlement plans provide the arrangement for implementation monitoring including third party external auditing. As to environmental safeguards, the EIAs and SIEA provides the monitoring arrangements for main infrastructure works for the Project 1 and the Project 2 (the latter being indicative to be updated at the time of Project 2 processing), whereas the environmental review and assessment framework for CBFMR works provides the monitoring at the time of planning and implementation.

71. **Gender and Social Dimensions Monitoring.** The poverty reduction and social strategy and the GAP will be implemented and monitored by AIFRERMA, and will be reported as part of AIFRERMA's progress reports as described in the next section.

### C. Reporting Requirements

72. **Project Progress Reports.** AIFRERMA will prepare progress reports and submit these to ADB on a quarterly basis within 45 days from the end of each quarter (termed as semiannual report and annual report for the reporting quarters ending June and December, respectively). Each report will provide (i) a narrative description of progress made during the period, (ii) changes in the implementation schedule, (iii) problems or difficulties encountered, and (iv) work to be carried out in the next period. The progress reports will also include a summary of contract awards and disbursements, project expenditure for the period and total expenditure of the project to date, contract award and financing plan for the next quarter, financial account of SGIA, and status of implementation of loan covenants. The suggested format of Project Progress Report is attached as **Appendix 3**.

73. **Assessment of Physical Progress during Implementation.** Each implementation activity carries certain weight and should be accounted for while computing the physical progress. **Appendix 4** shows guidelines for computing physical progress of the Project 1 to be

used both by AIFRERMA and ADB for assessment during project implementation. A graph of anticipated overall physical and financial progress during the life of the project to help identifying the status of achievement of the targets and or underperformance is also shown. This data will also be used for project performance rating (PPR).

74. **Annual Projections for Contract Award and Disbursement.** AIFRERMA will prepare annually the forecast for contract awards and disbursements under the projects on a quarterly basis for one year ahead in the format shown in **Appendix 5**. This will be submitted to ADB by 31 December of each year.

75. **Audited Financial Report.** AIFRERMA will have its accounts and financial statements such as balance sheet, statement of income and expenses, and related statements audited annually including SGIA, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience and terms of reference acceptable to ADB; and (ii) furnish to ADB, as soon as available but in any event not later than 6 months after the end of each fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto will include a separate audit opinion on the use of the loan proceeds, SGIA funds and compliance with SOE procedures and financial covenants.

76. **Project Completion Reports.** AIFRERMA will submit to ADB a project completion report (PCR) within 6 months of physical completion of the project, and a Facility completion report within 6 months of physical completion of the Investment Program. These reports will cover a detailed evaluation of projects and the Facility, covering the design, costs, contractors, and consultant's performance, compliance of social and environment safeguards, economic impact, economic rate of return and other details for each project and the Facility as may be requested by ADB.<sup>22</sup>

#### **D. Review and Evaluation Arrangements**

77. AIFRERMA will undertake periodic project performance review under each individual loan, and also for the Facility to evaluate the scope, implementation arrangements, progress and achievements of objectives of the related project and the overall Facility. Performance shall be evaluated based on indicators and targets stipulated in the Design and Monitoring Framework for the Facility and the projects.

77. Based on a review of quarterly progress reports provided ADB, India, and State representatives through AIFRERMA will meet as required to discuss the progress of the projects and the Facility on any changes to implementation arrangements, or remedial measures required to be undertaken to achieve the overall objectives of specific subprojects and components and of the overall Facility. In addition to regular reviews, including a midterm review for the Project, a detailed midterm review of the Facility will be undertaken within no later than four years of the effective date of Project 1. The midterm review will include a detailed evaluation of the scope of the Facility, implementation arrangements, any outstanding issues, environment, resettlement and other safeguard issues, achievement of scheduled targets, contract management progress, and other issues, as appropriate.

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<sup>22</sup> Project completion report format available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>

## **E. Stakeholder Communication Strategy**

78. For any development projects to be successful, community participation is crucial. In this, the involvement of all stakeholders is equally important. Stakeholder includes groups or individuals who are either benefited or affected by a project or those groups or individuals who can affect the project. Identifying and consulting all stakeholders, especially the poor and the vulnerable are important to ensure that a project meets the need of all sections of the people. Further, consultations open up the line of communication between the various stakeholders and the project implementing authorities, thereby aiding the process of resolving conflicts at early stages of the project. Participation of the local community in decision making will help in prioritizing works and identifying effective measures in mitigating adverse impacts.

79. Consultations were held during the PPTA stage with affected households, elected representatives and other stakeholders. Further, consultations were held during the socio-economic surveys undertaken in sub-project sites and census surveys undertaken to assess the magnitude involuntary resettlement in each sub-project.

80. During the implementation stage, the AIFRERMIP will pursue effective involvement of local disaster management committees (DMCs) which will be trained to jointly make decisions with the subproject implementation offices on the subproject planning, implementation, and maintenance. Special attention will be given to elicit views and feedback of women and the poor so that the design has features that maximize the benefits for women and the poor. Existing community organizations, NGOs and other women's collectives would be approached to obtain collective feedback.

78. All important documents, agreements, reports etc., related to the AIFRERMIP will also be disclosed in the websites of AIFRERMA and ADB to adhere to transparency, and communication with stakeholders and other interested persons/bodies.

## **IX. ANTICORRUPTION**

79. The Government, the State and AIFRERMA are advised of ADB's Anticorruption Policy (1998, as amended to date). Consistent with its commitment to good governance, accountability and transparency, implementation of the Projects under the Facility shall adhere to ADB's Anticorruption Policy. ADB reserves the right to review and examine, directly or through its agents, any alleged corrupt, fraudulent, collusive, or coercive practices relating to the Projects under the Facility. In this regard, investigation of Government officials, if any, would be requested by ADB to be undertaken by the Government. To support these efforts, relevant provisions of ADB's Anticorruption Policy are included in the Loan Regulations and the bidding documents. In particular, all contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of AIFRERMA and all contractors, suppliers, consultants, and other service providers as they relate to the Projects under the Facility.

80. The following measures will be undertaken by AIFRERMA to ensure integrity and transparency:

- (i) The AIFRERMA will operationalize consultative decision making systems with its counterpart DMCs at block and panchayat levels regarding all planning and implementation matters, FRERM infrastructure maintenance, through regular

SIO-DMC meetings on progress review, annual and periodic work plans and schedules.

- (ii) The AIFRERMA will post the physical and financial details and project progress in the department website, along with the tenders and contracts awarded. For individual subproject, the SIOs will post the abstract of all contracts executed, including the quantity of works and their associated costs.
- (iii) The AIFRERMA will ensure that the grievance reporting and redressal mechanisms are in place to assist stakeholders in resolving their complaints in a timely manner. To this end, the PMU and SIOs will organize awareness campaigns for DMCs and other stakeholders.
- (iv) Through the mobilization of independent chartered accounting firm, the AIFRERMA will undertake annual financial audit for WRD, RDMD, and other departments, and all SIOs and associated offices, which will include investigation of all financial records and transactions.

81. Anyone coming across evidence of fraud and corruption associated with the Investment Program may contact the Anticorruption Unit at the following address and contact nos:

Integrity Division (OAGI)  
Office of the Auditor General,  
Asian Development Bank,  
6 ADB Avenue, Mandaluyong City,  
0401 Metro Manila, Phillipines  
Postal Address : P.O.Box 789, 0980 Manila, Phillipines  
Telephone : +(63-2) 632 5008; +(63-2) 632 2152  
Email : [anticorruption@adb.org](mailto:anticorruption@adb.org); [integrity@adb.org](mailto:integrity@adb.org)

## **X. ACCOUNTABILITY MECHANISM**

82. People who are, or may in the future be, adversely affected by the project may address complaints to ADB, or request the review of ADB's compliance under the Accountability Mechanism.<sup>23</sup>

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<sup>23</sup> For further information see: <http://compliance.adb.org/>.



## XI. RECORD OF FAM CHANGES

83. All revisions/updates during the course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the FAM<sup>24</sup>.

**Table 11-1. Sample Table for Recording FAM Changes**

FAM Version	Created Date	Revision Date	Reasons of Change	Main Contents of Change

<sup>24</sup> AIFRERMA and ADB shall ensure that changes to the FAM during Investment Program implementation must be consistent with the FFA and applicable loan agreements.

## **APPENDIX 1: ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM**

The document can be accessed from the following web link of ADB.

<http://www.adb.org/projects/project.asp?id=38412>

- (i) Resettlement framework
- (ii) Indigenous Peoples Development Framework
- (iii) Resettlement plans for Palasbari, Kaziranga, and Dibrugar subprojects for the flood embankment renovation/ extension works under Project 1
- (iv) Environmental Impact Assessments (EIAs) of the three subprojects and Summary EIA including the environmental management plan (EMP) to be applicable for entire MFF as well as Project 1
- (v) Environmental Assessment and Review Procedure to be applicable to community-based flood risk management (CBFRM)

## **APPENDIX 2: REFERENCE MATERIALS**

### **A. Project Related Documents**

#### A1. Basic Project Design

- Framework Financing Agreement of Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program (AIFRERMIP)
- Periodic Financing Request (PFR) No. 1
- Loan Agreement
- Project Agreement
- Report and Recommendation of the President (RRP) to the Board of Directors
- Facility Administration Memorandum (Project 1)

#### A2. Implementation Arrangements

- Implementation Materials Prepared under Project Preparatory Technical Assistance (Phase 2)
  - Draft Memorandum of Associations, Rules and Regulations, and Bye-Laws for Assam Integrated Flood and Riverbank Erosion Risk Management Agency (AIFRERMA)
  - Draft Human Resources Management Manual for AIFRERMA
  - Draft Financial Management Manual for AIFRERMA
  - Draft Integrated FRERM Planning Framework and Knowledge Development Report
  - Draft Guidelines for Community-Based Flood Risk Management
  - Draft Management Information System for Infrastructure Performance Monitoring and Maintenance Planning

#### A3. Safeguards

- Environmental Impact Assessment (EIA) Reports (Dibrugarh, Kaziranga, and Palasbari) and Summary EIA Report
- Environmental Review and Assessment Framework for CBFMR Works
- Resettlement Framework
- Indigenous Peoples Development Framework
- Resettlement Plans for Project 1 Civil Works (Dibrugarh, Kaziranga, and Palasbari)

### **B. General ADB Documents for Project Administration**

#### B1. General

- Anticorruption and Integrity (revised December 2007)
- Anticorruption Policy: Description and Answers to Frequently Asked Questions (revised 2008)
- Guidelines for Economic Analysis of Projects (revised February 1997)
- Guidelines for the Financial Governance and Management of Investment Projects Financed by ADB (revised October 2005)
- Guidelines for Preparing the Design and Monitoring Framework (July 2007)
- E-Handbook on Project Implementation (March 2008)
- Second Governance and Anticorruption Action Plan (July 2006)
- Operations Manual (Policies and Procedures) (updated October 2003 – latest updates of individual BPs and OPs apply)
- Ordinary Operations Loan Regulations (Applicable to LIBOR-Based Loans Made from ADB's Ordinary Capital Resources) (dated 1 July 2001)
- Ordinary Operations Loan Regulations (Applicable to Loans Made by the Bank from its Ordinary Capital Resources) (dated 1 July 1986)

#### B2. Consultants

- Guidelines on the Use of Consultants by the ADB and Its Borrowers (revised April 2010))
- Harmonized RFP for Loans - (updated 28 August 2009)
- Consulting Services Operations Manual – 2008

#### B3. Procurement

- Procurement Guidelines (revised April 2010)
- Guide to EA Procurement Capacity Assessment
- Guide to Completing Procurement Plans
- Handbook on Problems in Procurement for Projects Financed by the Asian Development Bank (Revised November 1987, reprinted October 1995)

- Standard Bidding Documents – Procurement of Goods (including related services)
- Standard Bidding Documents – Procurement of Works
- Standard Bidding Documents – Procurement of Works (Small Contracts)
- Standard Procurement Document – Prequalification of Bidders
- Standard Procurement Document – Prequalification of Bidders, User's Guide (Revised October 2009)
- Guide on Bid Evaluation (October 2009)

**B4. Disbursement**

- Loan Disbursement Handbook (January 2007)

**B5. Environmental and Social Safeguards**

- Safeguard Policy Statement (2009)

**B6. Social Dimensions and Gender Development**

- Handbook on Social Analysis: A Working Document (2007)
- Poverty Handbook Analysis and Processes to Support ADB Operations: A Working Document (2006)
- Core Labor Standards Handbook (2006)
- Strengthening Participation for Development Result: A Staff Guide to Consultation and Participation (2006)
- Interacting with Workers' Organization: A Primer for ADB Staff (2009)
- Sector Gender Checklists: Agriculture (2001), Education (2000), Health (2000), Resettlement (2003), Urban Development and Housing (2001), Water Supply and Sanitation (2007)
- Quick Reference Guide on Gender and Project Performance Management System (2009)
- Project Gender Action Plans: Lessons for Achieving Gender Equality and Poverty Reduction Result (A Briefing Note, 2009)
- Gender, Law, and Policy Toolkit (2006)
- Good Practices Guide for Incorporating Legal Empowerment into Operations (2009)

**B7. Others**

- Executing Agency's Project Progress Report (PAI 5.01)

## **APPENDIX 3: SUGGESTED FORMAT FOR PROJECT PROGRESS REPORT**

### **A. Introduction and Basic Data**

Provide the following:

- ADB loan number, project title, borrower, executing agency(ies), implementing agency(ies);
- total estimated project cost and financing plan;
- status of project financing including availability of counterpart funds and cofinancing;
- dates of approval, signing, and effectiveness of ADB loan;
- original and revised (if applicable) ADB loan closing date and elapsed loan period based on original and revised (if applicable) loan closing dates; and
- date of last ADB review mission.

### **B. Utilization of Funds (ADB Loan, Cofinancing, and Counterpart Funds)**

Provide the following:

- cumulative contract awards financed by the ADB loan, cofinancing, and counterpart funds (commitment of funds to date), and comparison with time-bound projections (targets);
- cumulative disbursements from the ADB loan, cofinancing, and counterpart funds (expenditure to date), and comparison with time-bound projections (targets); and
- re-estimated costs to completion, need for reallocation within ADB loan categories, and whether an overall project cost overrun is likely.

### **C. Project Purpose**

Provide the following:

- status of project scope/implementation arrangements compared with those in the report and recommendation of the President (RRP), and whether major changes have occurred or will need to be made;
- an assessment of the likelihood that the immediate development objectives (project purpose) will be met in part or in full, and whether remedial measures are required based on the current project scope and implementation arrangements;
- an assessment of changes to the key assumptions and risks that affect attainment of the development objectives; and
- other project developments, including monitoring and reporting on environmental and social requirements that might adversely affect the project's viability or accomplishment of immediate objectives.

### **D. Implementation Progress**

Provide the following:

- assessment of project implementation arrangements such as establishment, staffing, and funding of the PMO or PIU;
- information relating to other aspects of the EA's internal operations that may impact on the implementation arrangements or project progress;
- progress or achievements in implementation since the last progress report;
- assessment of the progress of each project component, such as,
  - recruitment of consultants and their performance;

- procurement of goods and works (from preparation of detailed designs and bidding documents to contract awards); and
- the performance of suppliers, manufacturers, and contractors for goods and works contracts;
- assessment of progress in implementing the overall project to date in comparison with the original implementation schedule—quantifiable and monitorable target, (include simple charts such as bar or milestone to illustrate progress, a chart showing actual versus planned expenditure, S-curve graph showing the relationship between physical and financial performance, and actual progress in comparison with the original schedules and budgets, the reference framework or guidelines in calculating the project progress including examples are shown in page 4); and
- an assessment of the validity of key assumptions and risks in achieving the quantifiable implementation targets.

#### **E. Compliance with Covenants**

Provide the following:

- the borrower's compliance with policy loan covenants such as sector reform initiatives and EA reforms, and the reasons for any noncompliance or delay in compliance;
- the borrower's and EA's compliance with financial loan covenants including the EA's financial management, and the provision of audited project accounts or audited agency financial statements; and
- the borrower's and EA's compliance with project-specific loan covenants associated with implementation, environment, and social dimensions.

#### **F. Major Project Issues and Problems**

Summarize the major problems and issues affecting or likely to affect implementation progress, compliance with covenants, and achievement of immediate development objectives.

Recommend actions to overcome these problems and issues (e.g., changes in scope, changes in implementation arrangements, and reallocation of loan proceeds).

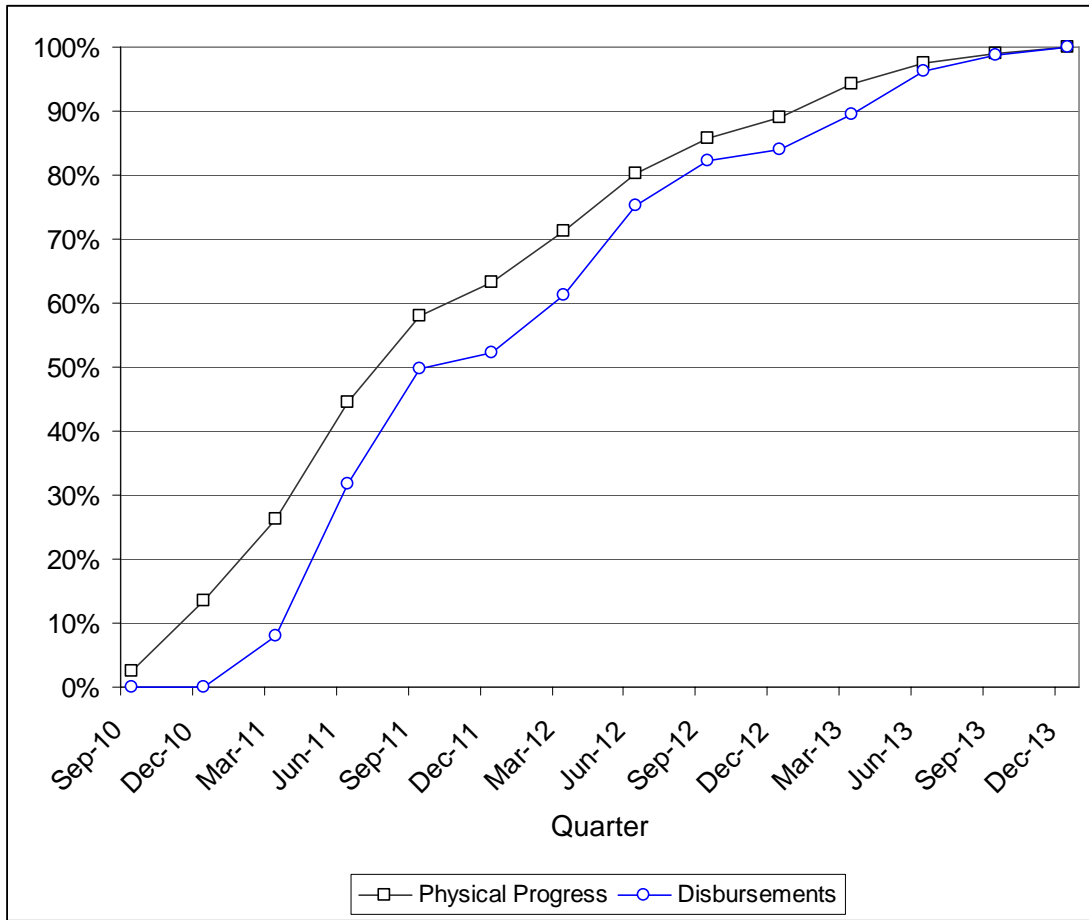
**APPENDIX 4: COMPUTATION OF PHYSICAL PROGRESS (PROJECT 1)**

<b>Activities</b>	<b>Year 1 2010/11</b>	<b>Year 2 2011/12</b>	<b>Year 3 2012/13</b>	<b>Year 4 2013/14</b>	<b>(a) Assigned Weight</b>	<b>(b) Actual Progress</b>	<b>(a)×(b) Weighted Progress</b>
Establishment and Staffing of PMU	xxxxx				4%		
Consultants Recruitment (3 packages)	xxxxx				4%		
NGO Recruitment (CBFRM and RPs)	xxxxx				2%		
Detailed Design and Tender Documents	xx				2%		
Tendering and contract award of Civil Works	xxxx				4%		
Tendering and contract award of Goods	xxxx				4%		
Land Acquisition and Resettlement	xxxxxxxxxxxxx				5%		
Other procurements	xxxx	xxxx			2%		
Institutional Development	xx				4%		
Knowledge Base Development and Tech studies	xx				4%		
CBFRM Activities	xx				4%		
Project Management	xx				6%		
Establishment of PPMS and IPPMS	xxxxxx				3%		
Physical Completion of Works & Overall Disbursements	xx				50%		
Operation and Maintenance Procurements	xx				2%		
<b>Total Weight</b>					<b>100%</b>		

**Implementation progress**

(a) Assigned weight for each activity; (b) Actual progress of each activity  
 (a)×(b) weighted progress for each activity ; Project progress = sum of all weighted progress for each activity

### ANTICIPATED OVERALL PHYSICAL AND FINANCIAL PROGRESS (PROJECT 1)





# Worksheet for Quarterly & Yearly Contract Awards/Commitments & Disbursement Projections (\$ Million)

Asian Development Bank

(Important: Before completing this form, please read carefully the instructions printed at the back of this form. Refer to PAI Nos. 5.02. Issued in December 2001.)

PROJECT: AIFRERMIP LOAN/GRANT NO. \_\_\_\_\_ SEGMENT NO. \_\_\_\_\_ FUNDS (OCR, SF, ADF-IX, ATF<sup>2/</sup>) \_\_\_\_\_ COUNTRY (Acronym) \_\_\_\_\_ PROJECTIONS MADE IN: \_\_\_\_\_ (Month, \_\_\_\_\_)

Ref. Line No.	Category <sup>1/</sup>	CONTRACT/COMMITMENT ITEM <sup>1/</sup>	Contracts Awarded on Previous Year(s)	QUARTER 1				QUARTER 2				QUARTER 3				QUARTER 4				TOTAL PR FOR THE Y (YP)=(Q1+Q2+Q3+Q4)	
				Jan, Feb, Mar 20_____				Apr, May, Jun 20_____				Jul, Aug, Sep 20_____				Oct, Nov, Dec 20_____					
				Month, Year Contract Awarded	QP	Month Awarded/ Committed or To be Awarded/ Committed	QP	Disbursement Amount Related to the Contract/ Commitment (2)	QP	Month Awarded/ Committed or To be Awarded/ Committed	QP	Disbursement Amount Related to the Contract/ Commitment (4)	QP	Month Awarded/ Committed or To be Awarded/ Committed	QP	Disbursement Amount Related to the Contract/ Commitment (6)	QP	Month Awarded/ Committed or To be Awarded/ Committed	QP		Disbursement Amount Related to the Contract/ Commitment (8)
					QA	Contract Value/ Commitment (1)	QA		QA	Contract Value/ Commitment (3)	QA		QA	Contract Value/ Commitment (5)	QA		QA	Contract Value/ Commitment (7)	QA		
TOTAL (Carried Forward) FROM PREVIOUS PAGE ___ OF ___ PAGES																					
1																					
2																					
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TOTAL OF THIS PAGE ___ OF ___ PAGES (To be carried on next page)																					
<b>GRAND TOTAL (LAST PAGE)</b>																					

<sup>1/</sup> In accordance with the allocation of loan proceeds as defined in the loan documents, or any other detailed breakdown if found useful.

<sup>2/</sup> ATF = Asian Tsunami Fund; Projections should be for the ADB-ATF financed component only.

QA = Quarterly Actual (already awarded/committed/disbursed, when projections are prepared).

QP = Quarterly Projected (to be awarded/committed/disbursed, when projections are prepared).

NOTES AND REMARKS:

\_\_\_\_\_  
 \_\_\_\_\_  
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