



Facility Administration Memorandum

Project Number: 38411
Loan Number: MFF0022 and Loan2444
30 November 2009

Multitranche Financing Facility India: Orissa Integrated Irrigated Agriculture and Water Management Investment Program (Facility Concept and Project – 1)

The facility administration memorandum is an active document, progressively updated and revised as necessary, particularly following any changes in investment costs, scope, or implementation arrangements in light of lessons, findings, and stakeholder inputs during implementation. This document, however, may not reflect the latest project or program changes.

CURRENCY EQUIVALENTS

(as of 1 October 2009)

Currency Unit	–	Indian rupee(s) (Re/Rs)
Rs1.00	=	\$0.0208
\$1.00	=	Rs48.11

ABBREVIATIONS

ADB	–	Asian Development Bank
AP	–	affected person
CAD	–	Command Area Development
CPS	–	Country Partnership Strategy
CSP	–	Country Strategy and Programs
DOWR	–	Department of Water Resources
DPR	–	detailed project reports
EARF	–	environmental assessment and review framework
EIRR	–	Economic internal rate of return
EMP	–	environmental management plan
FC	–	Finance Commission
FFA	–	Framework Financing Agreement
FYP	–	five-year plan
GDP	–	gross domestic product
ICB	–	international competitive bidding
ID	–	irrigation department
IEE	–	initial environmental examination
IPRPMS	–	investment program and roadmap performance monitoring system
ISPM	–	institutional strengthening and project management
IWRM	–	Integrated water resources management
LIBOR	–	London interbank offered rate
MFF	–	multitranches financing facility
MIS	–	management information system
MLI	–	minor lift irrigation
NCB	–	national competitive bidding
NGO	–	nongovernment organization
NIA	–	net irrigated area
NWP	–	National Water Policy
O&M	–	Operation and maintenance
OSG	–	Orissa state government
PFR	–	periodic financing request
PIM	–	participatory irrigation management
PMU	–	project management unit
RD	–	Revenue Department
RF	–	resettlement framework
RP	–	resettlement plan
SAP	–	state agriculture policy
SDP	–	state domestic product
SIO	–	subproject implementation offices
SIP	–	subproject implementation plans
TA	–	technical assistance

WALMI – Water and Land Management Institute
WUA – water user association

NOTES

- (i) The fiscal year of the Government of India ends on 31 March. "FY" before a calendar year denotes the year in which the fiscal year ends, e.g., FY2008 ends on 31 March 2008.
- (ii) In this report, "\$" refers to US dollars.

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SUPPLEMENTARY ATTACHMENTS

1.	Detailed Cost Estimates and Financing Plan	
2.	Safeguards Framework Documents	
2A.	Indigenous People's Development Framework <i>(See also LFF mission AM FFA Schedule 5 Attachment 3, dated 5 Oct 2008)</i>	
2B.	Resettlement Framework <i>(See also LFF mission AM FFA Schedule 5 Attachment 2)</i>	
2C.	Environmental Assessment and Review Framework <i>(See also LFF mission AM FFA Schedule 5 Attachment 1)</i>	
3.	Safeguards Plans for Project-1	
3A.	Indigenous Peoples Specific Actions for Project-1 Subprojects <i>(See also LFF mission AM Annex 4A dated 5 Oct. 2008)</i>	
3B.	Resettlement Plan for Mahanadi-Chitropala Island Irrigation Subproject <i>(See also CTA final report)</i>	
3C.	Resettlement Due Diligence Reports	
3D.	Initial Environmental Examination <i>(See also LFF mission AM Annex 4A dated 5 Oct. 2008)</i>	

PURPOSE OF THE FACILITY ADMINISTRATION MEMORANDUM

This Facility Administration Memorandum (FAM) contains project data and information that allows the Borrower, the Executing Agency (EA), the Project Management Unit (PMU), Subproject Implementation Offices (SIOs), other stakeholders, and the Asian Development Bank (ADB) to monitor project implementation and evaluate project impacts.

This FAM

- Provides concise and accurate details, including maps and diagrams, on major aspects of project implementation;
- Specifies roles and responsibilities of the EA, PMU, SIOs, consultants and ADB for the various actions required for satisfactory project implementation;
- Assist project administration staff of the EA, PMU, SIOs, and ADB to anticipate problems and initiate timely remedial actions or recommendations;
- contains a logical framework, including subsequent revisions that confirm the impact, outcome, outputs, activities and inputs, performance targets/indicators, assumptions, and risks;
- provides a framework and checklist for monitoring progress to allow remedial actions and midstream modifications to meet project objectives;
- promotes systematic monitoring and evaluation of project objectives, and assessment of impacts on project beneficiaries through surveys, studies, and periodic and midterm reviews;
- provides the format and instructions for the EA, PMU, and SIOs to periodically update the project performance report in its current revised format; and
- references ADB's Anticorruption Policy, indicating how ADB may be contacted about allegations of corruption and fraud.

This FAM is provided for the Government to for overall monitoring of external assistance programs, and to facilitate Government intervention in project implementation issues, should the need arise. should be read with:

- (i) The Framework Financing Agreement (FFA) between India and ADB (signed by the Government of India and ADB on 8 August 2008);
- (ii) Report and Recommendation of the President to the Board of Directors on a Proposed Multitranchise Financing Facility to India for the Orissa Integrated Irrigated Agriculture and Water Management Investment Program (August 2008);
- (iii) MFF India: Orissa Integrated Irrigated Agriculture and Water Management Investment Program—Change in Investment Program Implementation (Feb 2009);
- (iv) Letter of Amendment of FFA (on 13 February 2009 confirmed by DOWR on 21 February 2009 and by DEA on 25 February 2009);
- (v) The loan and project agreements for OIIAWMIP—Project 1 (signed by the Government of India and ADB on 25 February 2009);
- (vi) The loan agreement for Orissa Integrated Irrigated Agriculture and Water Management Project between India and OFID (on 12 March 2009);
- (vii) The letter of administration for Orissa Integrated Irrigated Agriculture and Water Management Project between OFID and ADB (on 19 March 2009); and
- (iv) ADB's relevant guidelines.

In case provisions in this FAM differ from those of the above-mentioned documents, the provision in the loan agreement, relevant guidelines, FFA, and the Report and Recommendation of the President will prevail over the FAM in their respective order.

KEY PERSONS INVOLVED IN THE INVESTMENT PROGRAM

A. Asian Development Bank (ADB) Headquarters

Director (Agriculture, Natural Resources and Social Services Division [SANS]) : Mr. Takashi Matsuo
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B. ADB India Resident Mission

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 INRM Website : www.adb.org/inrm

C. Executing Agency – Department of Water Resources, Orissa

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D. EXCHANGE OF COMMUNICATION

All official letters/correspondence/fax messages, etc., must be signed by the Project Director and addressed to Director, SANS (copied to Mission Leader and SANS Project Administration Head and Analyst) for project administration related matters.

PROCESSING HISTORY
MULTITRANCE FINANCING FACILITY (MFF)

Concept Clearance	7 September 2007
Fact-Finding	10 to 28 September 2007
Management Review Meeting	21 November 2007
Appraisal Mission	5 to 21 December 2007
Staff Review Meeting	18 March 2008
Loan Negotiations	7–8 August 2008
FFA Signing	8 August 2008
Board Circulation of MFF	28 August 2008
Board Consideration and Approval of MFF	18 September 2008
Last Periodic Financing Request Submission	31 March 2015
Estimated Investment Program Completion Date	31 March 2017
Period of Utilization	30 September 2017

FIRST PERIODIC FINANCING REQUEST

Submission of first PFR	8 August 2008
Approval of first PFR	26 September 2008
Signing of Loan and Project Agreements on 1 st PFR	6 March 2009
Loan Effectiveness of 1 st PFR	4 June 2009
Loan Closing Date on 1 st PFR	30 September 2013

REFERENCE MATERIALS (mostly downloadable from ADB's website: www.adb.org except B.)

A. Project-Related

- Report and Recommendations of the President (RRP) to the Board of Directors for the MFF for Orissa Integrated Irrigated Agriculture and Water Management Investment Program (OIIAWMIP)
- Framework Financing Agreement for OIIAWMIP
- Periodic Financing Request (PFR) No. 1
- Loan Agreement (Loan No. 2444-IND, Project-1)
- Project Agreement (Loan No. 2444-IND, Project-1)

B. Project Implementation-Related (Component TA final report)

- Project Management Systems Report
- Design Manual/Criteria
- SIO Field Guides for Program Implementation
- Guidelines for Development of Minor Lift Schemes
- Capacity Building and Training Programs
- Management Information Systems
- Standard Scheme O&M Guidelines
- Scheme O&M Manuals (Gohira, Remal, Sunei, and Taladanda)
- Financial Management Manual
- Subproject Feasibility Study Reports (Tranche-1=PPTA; Tranche-2=CTA)

C. Safeguards-Related

- Environmental Review and Assessment Framework
- Indigenous Peoples Development Framework
- Resettlement Framework
- Initial Environmental Examinations (IEEs) for Subprojects under Project-1
- Indigenous Peoples Specific Actions for three medium-sized schemes under Project-1
- Resettlement Plan for Mahanadi-Chitropala Island Irrigation Subproject

D. General

- Anticorruption Policy (July 1998)
- Anticorruption Policy: Description and Answers to Frequently Asked Questions-2000
- 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)
- Mainstreaming Multitranche Financing Facility (July 2008)

E. Consultants

- Guidelines on the Use of Consultants by ADB and its Borrowers (revised February 2007)
- Consulting Services Operations Manual (2008)
- Handbook for Users of Consulting Services
 - Volume I: Procedures and Practices
 - Volume II: Standard Request for Proposals – Loans
 - Volume III: User Guide for Preparing Terms of Reference
 - Volume IV: Guidelines for Executing Agencies' Submissions

F. Procurement

- Procurement Guidelines (February 2007)
- Guide on Bid Evaluation (May 2006)
- User's Guide – Prequalification of Bidders

- Standard Bid Documents – Goods
- Standard Bid Documents – Works
- Standard Bid Documents – Works – Small
- Contract Awards and Disbursement Projections

G. Disbursement

- Loan Disbursement Handbook (January 2007)
- Disbursement Letter

DESIGN AND MONITORING FRAMEWORK FOR THE FACILITY

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
<p>Impact</p> <p>1. Enhanced economic growth and reduced poverty in the selected river (sub-)basins in Orissa with direct benefit to 1.7 million population in the subproject area</p> <p>2. Institutionalization of effective mechanisms to put into operation PIM-based agriculture growth</p>	<ul style="list-style-type: none"> • Incremental farm (by 60% on average) and allied incomes • Livelihoods of the poor improved with better incomes (by 40% from agriculture for landless and marginal farmers) and HDI • Replication of the institutional mechanisms across the state and the country 	<ul style="list-style-type: none"> • State and district statistics on agriculture, incomes, and HDIs • Baseline data and follow on BME reports • Annual report of MOWR and DOWR 	<p>Assumptions</p> <ul style="list-style-type: none"> • Stable political and local security conditions • Damage from natural calamities are rehabilitated and managed <p>Risks</p> <ul style="list-style-type: none"> • International terms of trade of agriculture products turns adverse
<p>Outcome</p> <p>1. Enhanced productivity, water use efficiency, and sustainability of irrigated agriculture in the selected existing schemes in the river basins having 235,000ha designed command area</p>	<ul style="list-style-type: none"> • Increased irrigated area (40%) crop intensity (20%) including high valued crops (10%) • Increased crop production (50%), and values per ha land • Improved efficiency in water use (area [30%] and production [50%] per unit of water) • Increased on-farm and allied activity employment (40 days per ha of land) <p>(Specific targets will be shown in each SIP of each scheme.)</p>	<ul style="list-style-type: none"> • State and district statistics • Project progress and completion reports • Project MIS comprising baseline, targets (benefits, disaggregated into gender, ethnicity, and land operational sizes), and process/management indicators 	<p>Assumptions</p> <ul style="list-style-type: none"> • Political support to sustain and proceed with reforms • Sound fiscal conditions to sustain O&M revenue and expenditure management • Project institutions including WUAs sustains their performance targets <p>Risks</p> <ul style="list-style-type: none"> • Extraordinary climates such as droughts and cyclones
<p>2. Improved institutional performance of irrigation service delivery (with PIM) and water resources management (with IWRM)</p>	<ul style="list-style-type: none"> • DOWR and WUAs sustains irrigation facilities while fully achieving annual targets in irrigation and production • Majority of WUA members satisfied with irrigation delivery and with DOWR service • OSG maintains full maintenance fund allocation policy while fixing necessary tariff levels for cost recovery • WUAs substantially submitting the set water tariff • Appropriate institutional setup and functions are introduced to operate IWRM 	<ul style="list-style-type: none"> • Baseline data and BME reports • Project progress and completion reports • Project MIS comprising baseline, targets, and process indicators • DOWR's MIS for monitoring and planning irrigation scheme O&M • DOWR's annual reports 	<p>Assumptions</p> <ul style="list-style-type: none"> • (Same as above) • Beneficiary willingness to pay for set water tariffs <p>Risks</p> <ul style="list-style-type: none"> • Local or internal conflicts threatening WUA performance
<p>Outputs</p> <p>A. Productive and Sustainable Irrigated Agriculture Management Systems</p> <p>1. Participatory Planning and WUA strengthening</p> <p>(i) Participatory scheme planning with feasibility studies and subproject implementation plan (SIP)</p>	<ul style="list-style-type: none"> • 16 major and medium, and 1,400 MLI subprojects appraised with SIPs with clear output targets and programs. 	<ul style="list-style-type: none"> • Prepared appraisal reports • Project progress reports • Consultants' reports 	<p>Assumptions</p> <ul style="list-style-type: none"> • Participatory process is duly followed by all. • Capacity strengthening and quality control are effective with qualified consultants engaged. • Beneficiaries support collective action.
<p>(ii) WUA-level micro plans</p>	<ul style="list-style-type: none"> • For major and medium schemes WUA level micro-plans prepared and endorsed. 	<ul style="list-style-type: none"> • ADB review missions 	

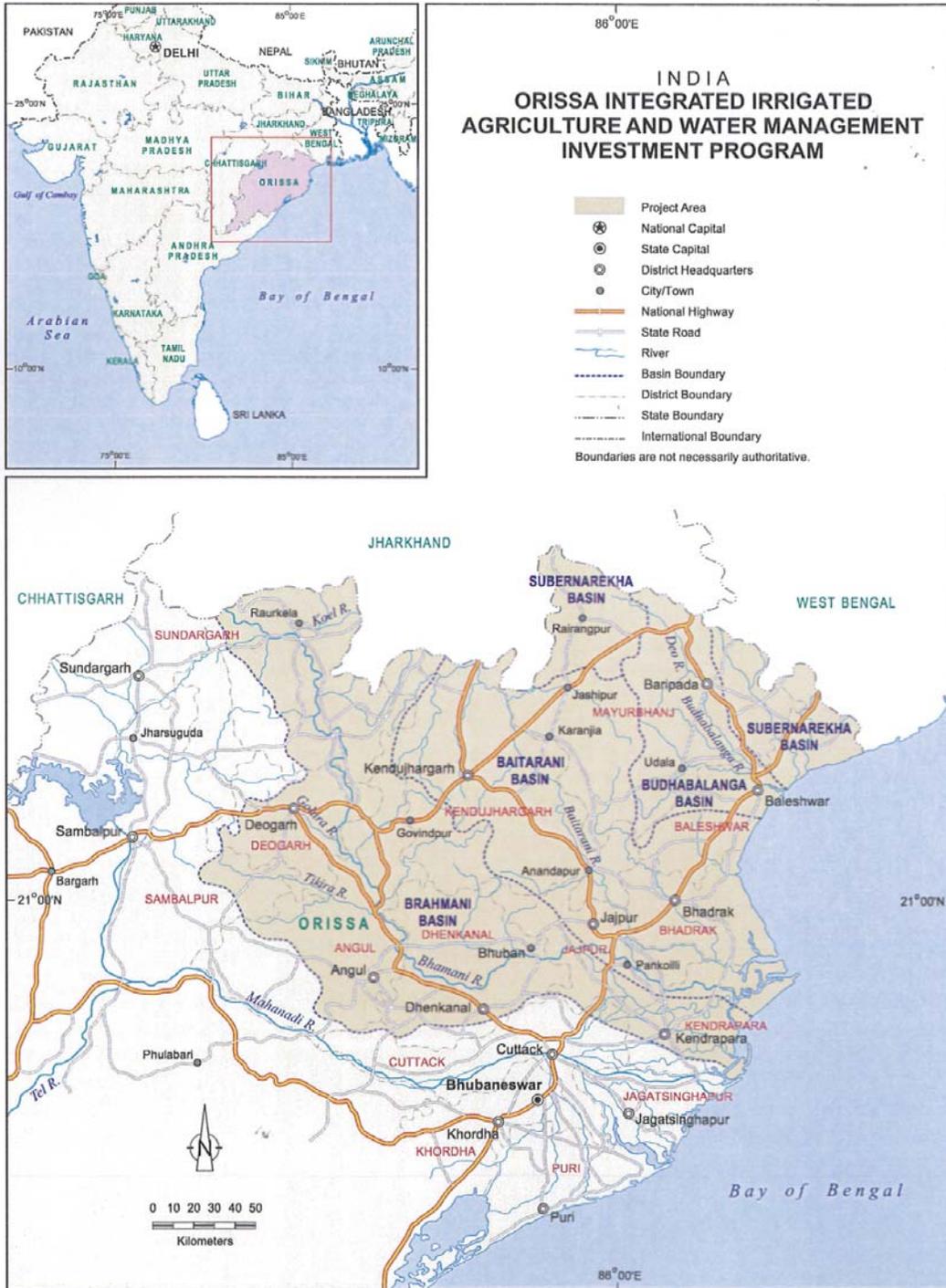
Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
(iii) Strengthened WUAs: Viable WUAs set up to become effective community organization ready to receive investment support and to enhance agriculture production	<ul style="list-style-type: none"> • 450 WUAs for major and medium, and 1,400 WUAs for MLI are strengthened with: <ul style="list-style-type: none"> - Over 75% farmers enrolled, 33% women - Elections held, committees set up and functional - Farmer contribution agreed - Target number of women and vulnerable group enrolled • WMAs endorse design • Implementation agreements are signed 	<ul style="list-style-type: none"> • Project MIS • Project progress and completion reports • Consultants' reports • ADB review missions • WUA constitution and its rules • Signed implementation agreements 	Assumptions <ul style="list-style-type: none"> • (Same as above) • WUAs comply with beneficiary contribution requirements
2. Irrigation and Associated Infrastructure including command area development (CAD): Good quality infrastructure designed and constructed, following appraised plan and WUA micro plans	<ul style="list-style-type: none"> • Infrastructure provided to 235,000 ha of area with WUA monitoring and satisfaction • CAD and conjunctive use extended to 60% and 10% of area following WUA requests • RPs have been implemented prior to civil works 	<ul style="list-style-type: none"> • Project MIS • Project progress and completion reports • Consultants' reports • ADB review missions • Third party inspectors' report 	Assumptions <ul style="list-style-type: none"> • (Same as above) • WUA are willing to extend CAD and conjunctive use with beneficiary contribution
3. Agriculture Development and Livelihood Enhancement: Stipulated services in SIPs and micro plans provided, and targets set therein are achieved	<ul style="list-style-type: none"> • WUAs achieve plan targets in cropping pattern and intensity, inputs, yield levels, etc. • WUAs establish linkages for collective input delivery, extension and product marketing • Livelihood targets as set out in micro plans are achieved • Trained women groups account for 33% of total 	<ul style="list-style-type: none"> • (Same as above) 	Assumptions <ul style="list-style-type: none"> • (Same as above) • WUA members are willing to adopt modern agriculture practices Risks <ul style="list-style-type: none"> • Natural calamities • Volatile price reduction of agriculture products
4. Sustainable O&M Systems Established: Irrigation schemes operated and maintained on a sustainable basis	<ul style="list-style-type: none"> • Scheme-wise O&M rules, annual O&M plans are prepared and implemented • Water management practice is improved to achieve irrigation area targets for each WUA • DOWR/ WUA has sufficient fund to undertake the stipulated O&M activities • Regular annual WUA audit system is operational 	<ul style="list-style-type: none"> • (Same as above) • Irrigation scheme O&M MIS (annual resource need, planned and actual mobilization at scheme and WUA levels) • Scheme performance and WUA performance audit reports 	Assumptions <ul style="list-style-type: none"> • (Same as above) • Damages from natural calamities duly rehabilitated • DOWR staff pay due attention to O&M performance
B. Institutions Strengthened and Project Management Systems Operational 1. Policy, Planning, and Legal Framework (i) State Water Policy revised and implemented, with regular review by Water Resources Board (WRB) (ii) State Water Plan updated with development plans for the four northern river basins	<ul style="list-style-type: none"> • Revised Policy in March 2007 • Implementation status is annually reviewed and further actions taken guided by WRB • State water plan detailed in four basins with stakeholder participation (2012) 	<ul style="list-style-type: none"> • Policy document • Policy review reports • Updated state water plans • Basin development plans • Refined WUA Act and Rules • Project progress reports • ADB review missions • DOWR annual report 	Assumptions <ul style="list-style-type: none"> • Political support to sustain and proceed with reforms • Active stakeholder support and participation • Effective capacity development support through qualified consultants engaged

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
(iii) WUA Act and Rule refined for more sustainable and inclusive PIM	<ul style="list-style-type: none"> WUA Act and Rule revised (2008) with stronger WUA institutional continuity and head-tail representation by Refined act and rule made operational (2010) 		
<p>2. DOWR Institutional Setup, Structure, Skill Mix, and Business Processes Strengthened</p> <p>(i) Institutional development vision and strategy refined</p> <p>(ii) Permanent PIM directorate established</p> <p>(iii) Quality control cell established</p> <p>(iv) DOWR capacity development plan (CDP) refined</p> <p>(v) Water and Land Management Institute (WALMI) reforms with autonomy</p>	<ul style="list-style-type: none"> Vision and strategy document (2009) PIM directorate set up, staff deployed, and made operational with training (2008) QC cell set up, staff deployed, and made operational (2008) CDP refined to meet with PIM and other requirements (2010) WALMI reformed with stronger autonomy and new director recruited from market (2008) 	<ul style="list-style-type: none"> DOWR Institutional vision and strategy document Revised service rules (job descriptions) QC guidelines CDP document and program lists WALMI organizational rule Project progress reports ADB review missions DOWR annual report 	<p>Assumptions</p> <ul style="list-style-type: none"> (Same as above) DOWR leadership dynamic and support the change process Staff level support for necessary reforms
<p>3. Systems to Support Sustainable O&M</p> <p>(i) Fund allocation following Financial Commission (FC)</p> <p>(ii) Water rates revised to meet the allocation needs</p> <p>(iii) Collection improved with WUA involvement</p> <p>(iv) Land records improved providing WUA-specific data for collection/demand</p> <p>(v) Scheme MIS for O&M performance monitoring and planning</p> <p>(vi) DOWR establishes linkage between water rate collection and allocation</p> <p>(vii) Pilot delegation of water tariff collection and retention by WUAs</p>	<ul style="list-style-type: none"> Allocation to follow FC recommendations (2011 and 2016) Water rates revised following the FC report (same as above) Percentage of collection against the target improved Improved data base to generate the required data MIS developed with monitoring data (2010: tranche-1 schemes) Fund allocation mechanisms improved, linked with WUA collection performance (2010) WUA performance for pilot tariff collection effective (2011) 	<ul style="list-style-type: none"> FC reports OSG annual budgets Gazette notification of water rates Finance Department data on water rates collection performance Consultants reports and special study reports Project progress reports ADB review missions DOWR annual report 	<p>Assumptions</p> <ul style="list-style-type: none"> (Same as above)
<p>4. Progress of Actions towards Operationalizing IWRM</p> <p>(i) Appropriate IWRM functions and institutional arrangements defined</p> <p>(ii) Institutions established to operationalize IWRM</p> <p>(iii) Participatory RBO established with decision support systems (DSS)</p>	<ul style="list-style-type: none"> Institutional arrangements clarified for IWRM functions (2009) Establishment of IWRM institutions (2012) RBO set up and made operational with effective DSS (2012) 	<ul style="list-style-type: none"> IWRM action plan State WRB reports Consultants reports and special study reports Project progress reports Pilot RBO reports ADB review missions DOWR annual report 	<p>Assumptions</p> <ul style="list-style-type: none"> (Same as above)

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
5. Project Management System Established and Made Fully Operational - DOWR offices - Line agencies - Local governments - WUAs - NGOs - Private providers	<ul style="list-style-type: none"> PMU, SIOs established, staffed, and trained (2008) Project manuals prepared and fully operated (2008) Consultants and NGOs engaged and provide effective support (2008) Accountability measures for project institutions made operational (2009) 	<ul style="list-style-type: none"> Detailed operational guidelines Consultants reports Special study reports including the third party Project progress reports ADB review missions DOWR annual report 	Assumptions <ul style="list-style-type: none"> Sufficient counterpart funding Engagement of qualified consultants and NGOs
6. Training/Capacity Development: Capacities of project institutions are strengthened through training (for Project management, PIM, IWRM, & agriculture development)	<ul style="list-style-type: none"> Capacity Development Plan (CDP) is prepared and implemented (2009) Project institutions are fully operational through project management support (2009) 	<ul style="list-style-type: none"> CDP CDP implementation report (by consultants) Project progress reports ADB review missions DOWR annual report 	Assumptions <ul style="list-style-type: none"> Effectiveness of training and trainers Retention of the developed capacities Engagement of qualified consultants and NGOs
Activities with Milestones		Inputs	
1. By the Government/ OSG 1.1 Establishment of DOWR PIM Directorate, PMU and SIOs by 2007, recruitment of consultants and NGOs by 2008. 1.2 Preparation of all project-related guidelines and manuals including project implementation plan by mid 2008. 1.3 Finalize FS/SIP for all major medium schemes by 2011, and minor lift schemes by 2015. 1.4 Implementation of actions for policy and institutional development between 2008-16. 2. By Consultants and NGOs 2.1 Capacity development and project management activities until 2016. 2.2 Support for preparing FS/SIPs by 2011, operationalization of project arrangements and institutional actions by 2016. 2.3 Completion of training by 2016. 3. By WUAs/ Beneficiaries 3.1 Information campaign, member enrollment, participation in FS/SIP preparation, and upfront cash contribution by 2014. 3.2 Participation in design, construction monitoring, and simple civil work implementation by 2015. 3.3 Self-sustain O&M of transferred facilities by 2016. 4. By Support Organizations 4.1 FS/SIP preparation and NGO training by 2011. 4.2 Implement resettlement plans by 2011. 4.3 Detailed design and construction by 2014. 4.4 Provision of follow-up support by 2016. 5. By ADB 5.1 Project approval in 2008. 5.2 Inception mission within 2008, mid-term review mission in 2012, and regular review missions		<ul style="list-style-type: none"> Incremental staff, operating, and other implementation expenses Training (through support organizations) Mobilization of counterpart fund International and national consultant support (158 person-months [p-m] of international and 1,818 p-m of national consultants) Arrangements for project institution training Local resource mobilization for minor civil works, and for regular O&M including calamity fund and minor lift replacement fund Implementing regular O&M NGO/CO support to set up and strengthen 450 WUAs (about 810 person-year, 20% women) Training and capacity building of support organizations Monitoring and evaluation Staff resources and staff consultants 	
Project Cost		Total: \$267.7 million	

ADB = Asian Development Bank, CAD = command area development, CO = community organizer, CDP = capacity development plan, DDS = decision support system, DOWR = Department of Water Resources, FC = Finance Commission, FS = feasibility studies; IWRM = integrated water resources management, HDI = human development index, MIS = management information system, MOWR = Ministry of Water Resources, NGO = nongovernment organization, OSG = Orissa state government, O&M = operation and maintenance, PIM = participatory irrigation management, PMU = project management unit, RBO = river basin organization, RP = resettlement plan, SIP = subproject implementation plan, QC = quality control, SIP = subproject implementation plan, SIO = subproject implementation office, WALMI = Water and Land Management Institute, WRB = Water Resources Board, WUA = water user association.

MAP



I. INVESTMENT PROGRAM DESCRIPTION

1. The Orissa Integrated Irrigated Agriculture and Water Management Investment Program (the Investment Program or OIIAWMIP) aims to enhance the productivity and sustainability of the existing irrigation schemes in the four northern river basins and a part of the Mahanadi delta.¹ This will involve renovating irrigation infrastructure, installing participatory irrigation management (PIM) systems with water user associations (WUAs), and empowering WUAs as a cohesive platform for irrigation operation and maintenance (O&M) and agriculture development. The OIIAWMIP will renovate six major and nine medium irrigation schemes (having designed net irrigated area [NIA] of 185,000 ha) and about 1,400 community-based minor lift irrigation schemes (having NIA of 30,000 ha). These schemes are suffering from low performance in irrigated agriculture due to inefficient operation, system deterioration, and limited integration with agriculture support services and marketing systems. The OIIAWMIP will also strengthen the institutional basis for PIM and integrated water resources management (IWRM) with management reforms and capacity strengthening of the relevant institutions.

2. The Asian Development Bank's (ADB) multitranche financing facility (MFF) will finance the OIIAWMIP and its individual tranches, referred as Projects, comprising individual subprojects appraised and approved prior to its launching, their subcomponents, and/or other physical and non-physical components of the Investment Program that are packaged based on procurement and/or time slice. The basic terms and conditions of the MFF, by which ADB would provide financing and the Borrower would avail of such financing, are stipulated in the Framework Financing Agreement (FFA) that was signed on 8 August 2008. The background, rationale, and basic design of OIIAWMIP are shown as its Schedule 1, along with the associated policy and institutional development actions.

A. Impact and Outcome

3. The impact of the OIIAWMIP will be enhanced rural economic growth and reduced poverty in the concerned existing irrigation system areas, and institutionalization of PIM-based agricultural growth. The outcome will be enhanced productivity, water use efficiency, sustainability of irrigated agriculture, and improved performance of irrigation service delivery and water resources management with empowered WUAs progressively taking over O&M roles.

B. Outputs

1. Part A: Productive and Sustainable Irrigated Agriculture Management Systems

4. This component will establish productive and sustainable irrigation systems through WUA strengthening, renovation of irrigation and associated infrastructure, agriculture and livelihood support services, and O&M support. The following subcomponents are provided, aligned in a step-by-step process of implementation. In principle, substantial WUA strengthening and participatory planning will be pursued up front with performance targets set and achieved before infrastructure is provided.

a. Participatory Planning and Water User Association Empowerment

5. **Participatory Scheme Planning.** Following the planning documents prepared under the project preparatory technical assistance (PPTA), the OIIAWMIP will support participatory

¹ It will also include a few other major and medium schemes that are functional but requiring WUA strengthening and minor infrastructure refinement, and minor creek irrigation schemes to be taken up as a pilot.

feasibility studies including subproject implementation plans (SIPs) for the irrigation schemes in consultation with the WUAs. The SIP will stipulate specific programs and output targets for the scheme while meeting any safeguards requirements. All subprojects will be appraised and cleared by the OSG, the Government of India, and ADB prior to their inclusion in the periodic financing request (PFR) of the MFF tranche.²

6. **WUA Micro Planning.** For major and medium-sized schemes, the planning process has two tiers: scheme planning (completed prior to the PFR), and WUA micro planning. The former will provide an overall framework for the scheme, including the main infrastructure, whereas the latter will detail WUA implementation plans for minor infrastructure, command area development (CAD), agriculture, livelihood, and O&M. A multidisciplinary team including NGO staff and local facilitators will be designated to prepare the plan with individual WUAs.

7. **WUA Strengthening and Empowerment.** The OIIAWMIP will strengthen WUAs to manage planning, construction, and O&M as an equal partner of the DOWR. WUAs will undertake effective organizational, operational, resource mobilization, and networking functions as a platform to advance the development of irrigated agriculture. Specific targets will be set and achieved, including membership enrollment of more than 70% of farmers, election and formation of an executive committee and subcommittees, and routine O&M including efficient water management. Upon achieving the targets, the micro plan activities will be started.

b. Irrigation and Associated Infrastructure Development

8. **Irrigation and Associated Infrastructure.** The OIIAWMIP will renovate and extend infrastructure³—including repair of reservoirs, renovation of head and cross regulators, canals, and ancillary facilities; and minor drainage works—along with the community-based minor lift irrigation facilities. For major and medium-sized schemes, main facilities requiring early completion to ensure timely delivery of benefits across the command area are implemented following the SIPs,⁴ whereas other facilities are implemented upon achievement of the WUA development targets. Scheme renovation will upgrade the system with sufficient water control structures and adequately sized outlets to support improved distribution efficiency. Communications equipment and software will be provided to ensure sound operation at the scheme and individual WUA levels. During the process, WUAs will be made aware of seasonal water entitlements with the provision of measuring devices to monitor and coordinate the delivery of the set discharges. Construction quality will be monitored by the WUAs, which will also be involved in the implementation of the minor works within their constituencies.

9. **Command Area Development and Conjunctive Use.** The OIIAWMIP will emphasize the placing of field channel systems and the strengthening of WUA capacities for on-farm water management as essential conditions to attain high water-use efficiency and intensification and diversification of cropping. Specific plans will be laid out in the micro plan. The concerned WUAs will implement the minor CAD facilities. With the use of field channel systems, conjunctive use of groundwater will be promoted for dry season cropping, with groundwater surveys, information campaigns for private investments in groundwater irrigation, and provision of pilot wells targeted to marginal farmer groups in the canal tail end areas.⁵

² Excluding the MLI schemes where subprojects are implemented in a process-type approach.

³ All schemes need to renovate the existing infrastructure, except for one major scheme, Mahanadi Chitropala Island Irrigation (MCII) scheme, which will expand the existing canal system to create an additional 6,000 ha of irrigated area to complete its original scope.

⁴ That is, in parallel to the WUA micro planning and strengthening process.

⁵ CAD will be primarily implemented through existing government programs, whereas provision under OIIAWMIP will also be kept for support where government programs are not readily made available.

c. **Agriculture and Allied Sector Support, and Livelihood Enhancement**

10. **Agriculture and Horticulture Development.** The OIIAWMIP will support agriculture and horticulture development with WUA capacity development as a platform to plan, coordinate, and arrange for the program implementation. Specific programs will be prepared in conformity with the existing district agricultural plans and stipulated in the WUA micro plans. They will cover (i) production systems including farmer field schools for crop intensification and diversification, soil nutrient management, seed multiplication, and integrated pest management; and (ii) formation of links with input suppliers and marketing chains with market intelligence, such as catalogues for existing organizations and programs.⁶ New technologies (e.g., system of rice intensification, participatory variety selection, and farmer producer companies) will be introduced and expanded. Participatory technology development of other innovations (e.g., aerobic rice and rice–fish integrated farming) will also be implemented in partnership with local research agencies. These will be delivered by the resource persons of the line departments, the private sector, or NGOs arranged through the implementation team. WUAs will sustain activities through their trained extensionists who will form regular links with the relevant institutions.⁷

11. **Livelihood Enhancement Support.** The OIIAWMIP will also support the formation of links between the vulnerable groups within the WUA area and the existing programs for poverty reduction, such as forming self-help groups and facilitating delivery of rural credit and training for income generation. While primary efforts will be made to deliver the agriculture and horticulture support services to these vulnerable groups, provisions targeted for skills development of these groups—such as fisheries, fodder planting along the water channels, livestock, organic fertilizer production, group cultivation through leasing of land, and community-based participatory works⁸—are also included in OIIAWMIP.

d. **Sustainable Operation and Maintenance System**

12. **Minor Facilities.** The OIIAWMIP will institutionalize sustainable O&M for the irrigation schemes. At present, the facilities are classified into those managed jointly by the DOWR and WUAs (project committees at main canal level, and distributary committees at secondary canal level), and minor facilities for which O&M is transferred to WUAs. Under OIIAWMIP, WUA capacities to sustain minor facilities will be set up first. This will be attained by forming water management subcommittees and preparing the O&M plans during the micro plan stage, and engaging subcommittees in implementing the works. Upon completion of the civil works, training will be provided to (i) prepare and implement operational plans; and (ii) undertake joint walk-throughs of canals to identify and plan maintenance works. For major and medium-sized schemes, WUAs will implement the maintenance plan with grants provided by the DOWR. If grants are insufficient, WUAs will mobilize funds from their members. As to the minor lift schemes, WUAs will mobilize all resources from members to implement the plan.⁹

13. **Main and Secondary Facilities.** At the higher levels of major and medium-sized schemes, participatory joint management systems will be established between the DOWR and the WUA committees, which will jointly prepare and implement system operational plans on a seasonal basis. Maintenance plans will also be prepared through joint canal walk-throughs and the demands from lower-tier WUAs, and implemented with the allocated funds from the DOWR.

⁶ Resources for existing state and other programs will be sought prior to accessing Investment Program funding.

⁷ Demonstration works will be undertaken with a focus on the land plots of marginal farmers.

⁸ A separate program to develop WUA capacities to enhance the livelihoods of the poor is also being prepared for possible Japan Fund for Poverty Reduction funding.

⁹ Responsibilities for fee collection have also been transferred to minor lift WUAs, who are also responsible for all repairs and future replacement of assets. They will also establish and build up a reserve fund to meet the purpose.

Guidelines for O&M performance monitoring, planning, and fund allocation will be established to guide the process, along with a scheme-wise management information system (MIS). Over the years, OIIAWMIP will pursue further O&M transfer of these larger facilities to the WUAs, leaving the role of the DOWR in these schemes to bulk water delivery.

2. Part B: Institutional Strengthening and Project Management

14. Part B comprises (i) institutional strengthening for PIM and IWRM, and (ii) Investment Program management. Necessary hardware and software (civil works for office refurbishment, vehicles and equipment, consultants, and incremental operational costs) are provided. It will support the implementation of the set Policy and Institutional Actions shown in [Appendix 1](#), while providing training following the Capacity Development Plan in [Appendix 2](#) (which has been developed as the Capacity Building and Training Programs in Reference Materials B on p. 5).

a. Institutional Strengthening

15. **Participatory Irrigation Management.** This subcomponent will establish self-sustaining mechanisms for developing and delivering accountable irrigation services with the strengthening of the relevant institutions. This will include (i) putting into operation the new PIM-CAD directorate of the DOWR; (ii) establishing upgraded O&M guidelines and the MIS for scheme O&M performance monitoring and planning; (iii) operationalizing a third-party internal technical auditing using externally hired experts; (iv) developing and delivering training for staff and WUAs;¹⁰ (v) undertaking information, education, and communication campaigns for PIM; (vi) advising on implementing the institutional actions ([Appendix 1](#)); and (vii) setting up staff incentive and performance evaluation systems to internalize PIM. Overall performance and achievements will be measured through WUA satisfaction surveys at the subproject level.

16. **Integrated Water Resources Management.** In accordance with the road map, this subcomponent will support (i) studies to assess appropriate IWRM functions and institutional arrangements for setting up a commission for water tariff fixation and other regulatory functions such as water allocation and entitlement; (ii) preparation of multisector river basin plans with establishment of participatory river basin organizations, initially in the Baitarani River basin as a pilot; (iii) strengthening of the hydrological database and decision support systems; and (iv) staff training on IWRM, basin planning, and associated analytical methodologies.

17. To support a part of this component, a technical assistance (TA) grant will be provided. Preceding the utilization of loan funds, the TA aims to support the OSG to initiate specific steps towards establishing and operationalizing IWRM at state and selected river basin levels¹¹ with stakeholder consultation and awareness, and capacity building of the concerned organizations. The total TA cost is \$313,000. Multi-donor Trust fund for Water Financing Partnership Facility (MTFWFPF) will finance \$250,000 of the TA cost on a grant basis to be administered by ADB. OSG will finance the remaining cost of \$63,000 (in-kind support).¹²

b. Project Management

18. This subcomponent will operate the program management system through a multidisciplinary project management unit (PMU) and subproject implementation offices (SIOs)

¹⁰ The specific training subjects include participatory planning, WUA development, design and construction management, quality control, O&M, PIM, resettlement, environmental management, and support services.

¹¹ Including a pilot river basin organization in the Baitarani River basin.

¹² The activities, cost estimates, implementation arrangements, and financing plan are shown in [Appendix 3](#).

comprising the OSG and outsourced experts, consultants, and NGOs. The OIIAWMIP will be implemented with a participatory decision-making system with WUAs. The WUAs are trained to jointly make decisions with SIOs on the subproject planning, implementation, and O&M, based on which specific works will be implemented by the responsible organizations, and monitored by the WUAs. This will be supported by (i) the project-specific MIS and quality control system that ensures due recording and reporting at SIO on institutional, physical, financial and other progress against the set targets specified in the SIPs; and (ii) regular PMU–SIO review meetings. This subcomponent will also support the consulting services for preparing further schemes for the subsequent tranches, and implementation performance review.

C. Special Features

19. The OIIAWMIP will introduce effective irrigation service delivery to enhance efficiency, productivity, and sustainability in water use by implementing key policy principles, furthering reforms for improved sector governance, and by incorporating the following lessons:

- (i) The OIIAWMIP will implement the key principles of the NWP 2002 and State Water Policy 2007, in particular by making PIM fully operational in the low-performing irrigation schemes, with associated reforms owned by the OSG.
- (ii) Its components are designed consistently with step-by-step implementation procedures to establish PIM-based productive agriculture, incorporating best practices collected through national and international studies.
- (iii) The program has a specific focus on extending field channel networks and promoting conjunctive use of groundwater, as essential elements for improving water-use efficiency, crop intensification, and diversification.
- (iv) It will empower WUAs to progressively take on O&M and implementation roles, with their capacity developed to facilitate links and bargaining power in input delivery, extension, and product marketing to achieve productive agriculture.

20. The OIIAWMIP will use MFF, which provides an opportunity for (i) flexibility in investment decision making based on subproject readiness; (ii) higher implementation quality, reflecting lessons learned and progressive improvement of the institutional basis during the program period at the time of processing subsequent loans; (iii) longer term program engagement allowing sufficient monitoring of critical institutional development process, and (iv) wider program coverage that allows more significant sector impacts under the proposed Program.

D. Project–1

21. On the basis of the FFA for OIIAWMIP, the Government of India submitted the Periodic Financing Request (PFR) for its first tranche of Project–1 on 8 August 2008, which was approved by the President of ADB on 26 September 2008 following the ADB Board approval of OIIAWMIP on 18 September 2008. The Project–1 of OIIAWMIP will support the initial progress in enhanced productivity and sustainability of irrigated agriculture in two major and three medium existing irrigation schemes (appraised prior to the PFR submission), and about 650 existing minor lift irrigation schemes (through a process approach), and improved institutional performance of irrigation service delivery and water resources management. Its description is provided as [Appendix 4](#), whereas the design and monitoring framework is in [Appendix 5](#).

II. INVESTMENT COST AND FINANCING PLAN

A. MFF Financing Terms

22. ADB will provide loans to finance subprojects following the FFA, as and when the subprojects are ready for financing and a related request is made under a PFR. Each loan will comprise a range of subprojects appraised and approved for financing by ADB, and institutional strengthening and project management support including consultancy services. Each loan will constitute a tranche, which may be financed under terms different from the financing terms of previous or subsequent tranches. Financing terms will depend on the project and ADB's financing policies, all prevailing at the time the tranche is documented in a legal agreement. Tranches may be provided in sequence or simultaneously, and some may overlap in time.

23. Proceeds of each tranche will be used to finance expenditures of OIIAWMIP, in accordance with provisions of the FFA and the legal agreements for each tranche. Commitment charges are not payable on the Facility, unless financing was actually committed by ADB as a loan. ADB rules on commitment charges, which are in effect when a tranche is provided, will apply with respect to such tranches.

B. Investment Cost and Financing Plan of the OIIAWMIP

24. The program investment cost is estimated at \$267.7 million (table 1), including taxes and duties of \$11.1 million.

Table 1. Cost Estimates and Financing Plan (Program)

Project Components	ADB	OFID	OSG	PPs	Total
I. Base Cost ^a					
A. Irrigated Agriculture Management Systems					
1. Participatory Planning and WUA Strengthening	5.0	0.0	0.5	0.1	5.6
2. Irrigation Infrastructure	83.3	24.8	26.2	5.0	139.3
3. Agriculture and Livelihood Development	6.8	0.0	0.0	0.0	6.8
4. Sustainable Operation and Maintenance Systems	2.5	0.0	3.2	0.6	6.3
B. Institutional Strengthening and Project Management	21.0	0.0	13.8	0.0	34.8
Subtotal (A)	118.6	24.8	43.7	5.7	192.8
II. Contingencies ^b	38.9	5.2	11.1	1.5	56.7
Subtotal (B)	157.5	30.0	54.8	7.2	249.5
III. Financing Charges during Implementation ^c	0.0	0.0	18.2	0.0	18.2
Total	157.5	30.0	73.0	7.2	267.7
Financing Share (%)	59	11	27	3	100

^a In mid 2007 prices

^b Physical contingencies computed at 10% of civil works, NGO and consultancy costs, and project management, totaling \$12.4 million.

^c Includes interest and commitment charges. Interest during construction has been computed at the 5-year LIBOR rate plus a spread of 0.20% for ADB, and 2.75% for OFID.

25. The maximum financing amount available under the Facility is \$157.5 million. It will be provided in individual loans from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility. The Government of India may choose a currency and interest range regime for each loan. In addition, OPEC Fund for International Development (OFID) will finance \$30.0 million to jointly cover the infrastructure and equipment cost of the Project-1 of the Program. [Detailed cost estimates and financing plan are shown in Appendix 6.](#)

26. ADB will provide loans under the Facility to finance the subprojects and associated support services under the Roadmap and Investment Program following the submission of a PFR, by the Government of India. The Facility is envisaged to extend four loans (or Projects) to implement the Program subject to the said PFR submission and loan agreement signing.

C. Investment Cost and Financing Plan for Project-1

27. The total cost of the Project-1 is \$66.4 million (Table 2), including taxes and duties of \$3.3 million. The loan to finance the Project-1 for \$16.5 million equivalent is to be requested under the first PFR from ADB's ordinary capital resources. The loan will have a term of 25 years, including a grace period of 7 years, 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 agreement. In addition, the OSG and the Government of India is requesting the financing of \$30.0 million from OFID. The OFID loan will be administered by ADB and cover infrastructure and associated equipment cost of Project-1, and have a term of 20 years, including a grace period of 5 years, with fixed interest rate of 2.75% per annum including service charges of 1.0% per annum. Detailed cost estimates and financing plan are shown in [Appendix 6](#).

Table 2. Total Cost and Financing Plan (Project-1)

Project Components	ADB	OFID	OSG	PPs	Total
I. Base Cost^a					
A. Irrigated Agriculture Management Systems					
1. Participatory Planning and WUA Strengthening	0.7	0.0	0.2	0.0	0.9
2. Irrigation Infrastructure	5.4	24.8	9.1	1.6	40.9
3. Agriculture and Livelihood Development	0.6	0.0	0.0	0.0	0.6
4. Sustainable Operation and Maintenance Systems	0.1	0.0	0.1	0.0	0.2
B. Institutional Strengthening and Project Management	7.4	0.0	3.5	0.0	10.9
Subtotal (A)	14.2	24.8	12.9	1.6	53.5
II. Contingencies	2.3	5.2	1.8	0.2	9.5
Subtotal (B)	16.5	30.0	14.7	1.8	63.0
III. Financing Charges during Implementation	0.0	0.0	3.4	0.0	3.4
Total	16.5	30.0	18.1	1.8	66.4
Financing Share (%)	25	45	27	3	100

a In mid 2007 prices.

D. Utilization Period

28. The last date for disbursement under any tranche will be September 2017 while the last financing tranche should be no later than March 2015. The last date for disbursement under the Project-1 will be September 2013.

III. IMPLEMENTATION ARRANGEMENTS

A. Organizational Structure and Functions

29. **Executing Agency.** Orissa's DOWR will serve as the Executing Agency (EA) for the Program and responsible for overall strategic guidance, supervision, and quality assurance of works while ensuring compliance with loan covenants and PFR provisions and due diligence. The organizational structure for OIIAWMIP implementation is shown in [Appendix 7](#).

30. **Project Steering Committee (PSC).** A state-level PSC will provide policy guidance, inter-ministerial coordination, and will take decisions on matters related to OIIAWMIP. The PSC will be chaired by the Agriculture Production Commissioner or the officer not below the rank of secretary and the members will include secretaries, directors, and/or representatives of all relevant departments and agencies of the State.¹³ Under the PSC, a project coordination working group (PCWG) chaired by Secretary DOWR will be established to provide regular coordination with the nodal officers assigned by the concerned departments and agencies.

31. **Project Management Unit (PMU).** The PMU has been established in DOWR under the CAD/PIM Directorate, with the assignment of a full-time Project Director (PD) at the rank of chief engineer who is to report to Principal Secretary through the CAD/PIM Directorate. The PMU will have multi-disciplinary structure comprising staff from DOWR, staff on deputation from Command Area Development Authority (CADA), Orissa Lift Irrigation Corporation (OLIC), and from line departments or recruited from the market. Assistance is also provided by a multidisciplinary team of consultants for institutional strengthening and project management (ISPM) for capacity development, quality control, and project management.

32. The PMU will be responsible for the identification, formulation, implementation, and O&M of all subprojects including conformance with the State, national and ADB social and environmental safeguards policies. Senior staffs are assigned under the PD PMU for the purpose of the Facility, including (i) two executive engineers and four assistant engineers in procurement (budget and administration cell) and in monitoring and evaluation (information management cell); (ii) a staff seconded from Department of Environment and Forest and a staff designated for OIIAWMIP from Resettlement and Rehabilitation Directorate of DOWR, (iii) directors in O&M (from DOWR), CAD (from CADA), and WUA support (engaged externally), (iv) staff of O&M and CAD divisions (from DOWR and CADA), and (v) externally engaged experts in PP institutional development, CAD, water management, agriculture/ agribusiness, and vulnerable groups.¹⁴ The PMU will also have a unit for finance and account comprising a dedicated account officer, account assistants and computer operators to look after the project(s) accounts and processing claims, under the overall control of Financial Advisor cum Chief Account Officer (FA-CAO) of EIC DOWR working as FA-CAO of the OIIAWMIP.¹⁵ With this setup, PMU will function under the overall advice of EIC-PD and Special/Additional Secretary (in charge of DOWR's PIM-CAD Directorate) on overall Project implementation matters.

33. To meet its mandate of managing, guiding, and coordinating for the implementation of the Projects and the Facility, the PMU will: (i) prepare an overall implementation plan and annual project budget; (ii) coordinate with other agencies concerned, (iii) guide the feasibility studies and endorse subproject appraisal reports including the safeguards documents, (iv) monitor and guide the activities of the Subproject Implementation Offices (SIOs) on subproject planning, implementation and O&M, (v) manage and guide safeguards action plans and implementation; (vi) establish and maintain a management information system (MIS), (vii) monitor overall project progress and evaluate project benefits and social and environmental impacts, (viii) arrange for necessary staff training programs; (ix) manage procurement,

¹³ The Project Steering Committee includes representation from the following: Departments of Water Resources, Agriculture, Child and Women's Affairs, Fisheries, Forest and Environment, Horticulture, Industries, Livestock, and Scheduled Caste and Scheduled Tribe. Also represented are the Departments of Planning, Finance, Rural Development, Panchayat Raj, and Revenue, and State Pollution Control Board.

¹⁴ The PIM-CAD staff may also work for the state level activities beyond OIIAWMIP that following the request by PIM-CAD Director and concurrence of PD PMU.

¹⁵ The finance and account unit of Dam Safety Division serves as Drawing and Disbursement Office (DDO) of the OIIAWMIP, with the staffing of a qualified accountant (deputed from DAG office), an auditor, and a junior engineer.

consulting and NGO services, Project expenditures and loan disbursement;¹⁶ (x) maintain financial accounts; and (xi) prepare periodic implementation progress reports. Project organizational structures are shown as Figures A7.1 and A7.2 of Appendix 7, whereas flow charts for submission of expenditure claims for loan disbursement, Project expenditures, and submission of various Project documents are shown in Figures A7.3 to A7.5.

34. **DOWR Dedicated Design Cell and Project Preparatory Working Group.** To support the functions of the PMU, DOWR will maintain a dedicated design cell headed by an executive engineer and comprising four assistant engineers and draftsmen. A project preparatory working group headed by Director Hydrology will also function to prepare and process the feasibility study reports of future Projects and the associated clearance of their detailed project reports.

35. **Subproject Implementation Office (SIO).** For major and medium schemes, under the PMU, six SIOs will be established for the six major subprojects and six SIOs will be established for the nine medium subprojects, building on the existing establishments at the field level.¹⁷ The SIOs will comprise technical, CAD, and water user association (WUA) support cells, constituted by staff from DOWR, CADA, and NGO engaged for WUA strengthening, PIM/CAD, and agriculture. The WUA support cell will also have a number of support service teams mobilized through an NGO comprising three persons with technical orientation in community mobilization, agriculture extension and agribusiness, and CAD and on-farm water management who work closely with the assigned WUA and its DOWR counterpart staff.¹⁸ For each scheme there will be a subproject manager who is a superintending engineer or an executive engineer. A dedicated unit will also be set up for involuntary resettlement as required.

36. In SIOs, the subproject manager will manage its technical cell and monitor and guide CAD and WUA cells. Under the support of PMU and ISPM consultants provided through regular PMU-SIO meetings, the SIOs will (i) coordinate with the field staff of the concerned line departments; (ii) prepare an annual work plan for approval by PMU; (iii) implement the work plan; and (iv) establishing reporting systems to provide information on physical and institutional progress and impacts. The SIOs will closely work with WUAs and establish participatory decision making system through regular meetings at minor, distributary, and subproject levels.¹⁹ Within this framework, the specific tasks of the SIOs will include: (i) provide inputs to subproject planning and design process; (ii) undertake WUA strengthening and micro-planning including CAD; (iii) implement safeguards actions following the relevant plans;²⁰ (iv) execute civil works; (v) coordinate for and/or implement support services for agriculture and livelihoods; (vi) manage subproject O&M in collaboration with WUAs while ensuring the capacities and resources for the latter; (vii) arrange training programs for the staff including NGOs, and WUAs.

37. For minor lift schemes, the PMU will have a lift irrigation cell comprising a deputed senior engineer from OLIC, one team coordinator/economist, one economist, one monitoring and

¹⁶ At present, tender evaluation and L/C issuance for the main canal civil works are authorized to EIC-PD who will manage these activities with the PMU procurement its F&A unit staff, respectively.

¹⁷ For Project 1, the following positions have been provided: (i) SIOs: 3 EEs, 13 AEs, and 28 junior engineers (JEs) for construction works, and 5 AEs for M&E; (ii) CAD: Restoration of 1 division (1 EE, 3 AEs, and 16 JEs) for implementing substantially enhanced CAD; and (iii) R&R: one land acquisition and rehabilitation officer and three revenue inspectors, for implementing R&R of MCII.

¹⁸ Existing non-technical staff of the field establishments will also be converted to facility operators, maintenance workers, and WUA facilitators and placed under the designated WUAs. Community organizers (two organizers per three WUAs) will also be mobilized under the NGO team to facilitate WUA strengthening and PIM/CAD activities.

¹⁹ A district coordination committee headed by district collector will also be operationalized with the participation of all line departments will be set up and meet regularly, in which the representatives of the WUAs will participate.

²⁰ Deputy subproject manager will be assigned as chief officer for environmental management, resettlement, and vulnerable peoples to undertake the required tasks through the designated SIO staff.

evaluation experts and three mobile teams comprising an engineer and an agriculture specialist. PMU will be assigned for central procurement, subproject planning including feasibility studies, and monitoring and evaluation. Under the PMU, up to four SIOs will be established to implement up to 300 ongoing schemes at a time in the project geographical areas, comprising WUA specialist (designated as subproject manager), on-farm water management/ agriculture specialist, work inspector, and a deputed engineer from OLIC. The PMU and SIO staff for minor lift schemes are primarily engaged through a local firm as minor lift irrigation implementation consultants, who will also be associated with local NGOs to mobilize field level community organizers cum coordinator to support institutional building and program delivery of up to 20 WUAs for a two-year implementation period. The functions of SIOs remain the same as major and medium scheme SIOs, except that minor works (mostly done by WUAs) are supervised through local executive engineers of OLIC, with quality control by the SIO work inspectors.

38. **Water and Land Management Institute (WALMI).** In support of the implementation of the Facility, the OSG through the WALMI will provide necessary backup and training support, along with other organizations engaged for training purposes. Following the actions in Sector Roadmap ([Appendix 1](#)) for stronger stakeholder representation and autonomy, WALMI will establish highest and up-to-date information, knowledge, and technology base, in the appropriate technologies for irrigation O&M most suitable for Orissa and India, best practices and lessons for PIM and IWRM, and monitoring and evaluation on these subjects. On the basis of this, WALMI will upgrade its training modules and provide training with a focus on the concerned project staff including private providers and NGOs, and trainers of WUA training.²¹

B. Implementation Procedures and Arrangements

39. **Subproject Selection Criteria and Preparation.** All subprojects to be included under the Program will meet the selection criteria shown in [Appendix 8](#), including: (i) water availability; (ii) technical, social, institutional and economic feasibility; (iii) insignificant social and environmental impacts; (iv) compliance with safeguards requirements; (v) endorsement by WUAs including the set beneficiary contribution requirements; and (vi) proposal clearance by the Government as applicable. For Project-1, the five major and medium subprojects proposed were already studied under the PPTA, and appraised by OSG, the Government, and ADB, along with two sample minor lift irrigation schemes. For subsequent Projects, PMU will prepare further subprojects for inclusion into the concerned PFR.

40. **Subproject Implementation Procedures.** Implementation procedures for individual subprojects are shown in [Appendix 9](#) and detailed in the [Project Management Systems Report](#). In principle, substantial WUA strengthening will be pursued upfront with the specific performance targets set, after achievement of which infrastructure will be provided.

41. **Participatory Project Management and Governance Arrangements.** In implementing individual subprojects, the OIIAWMIP will operationalize participatory project management systems with the involvement of WUAs in key decision making stages at subproject and micro level planning, implementation, and O&M, based on which specific works will be implemented by the responsible organizations, and monitored by the WUAs. This will be supported by (i) the project-specific MIS and quality control system that ensures due recording and reporting at SIO on institutional, physical, financial and other progress against the set targets specified in the

²¹ Subject to the implementation of the reforms for higher autonomy and staff quality, OIIAWMIP will consider twinning opportunities for WALMI with an international research organization as well as providing a corpus fund in its subsequent loan, by establishing an arrangement acceptable to ADB.

SIPs; and (ii) regular PMU–SIO review meetings. These are accompanied with other measures to support transparent and accountable project management shown as a part of [Appendix 9](#).

42. **Beneficiary Contribution Arrangements.** The OIIAWMIP will involve beneficiary contribution for investing in minor irrigation facilities. Specifically, WUA beneficiaries of major and medium-scale schemes will be requested to deposit 5% of the cost of minor canals as an O&M reserve fund for the concerned WUAs. Beneficiaries are also requested to contribute 10% of the cost of CAD, and 20% of the cost of minor lift irrigation schemes and of conjunctive use of groundwater for major and medium schemes. These will be reflected in the concerned micro plan (for major and medium schemes) and SIPs for minor lift irrigation schemes.

43. **Sustainable O&M of Existing Irrigation Schemes.** The OIIAWMIP will place significant emphasis to sustain O&M of existing irrigation schemes. The specific measures are divided into (i) state-wide measures and (ii) OIIAWMP subproject-specific measures.

- (i) At the state level, DOWR (through its O&M Division in PIM/CAD Directorate) will
 - (a) set up scheme-wise MIS for O&M monitoring and planning, (b) establish a mechanism of monitoring the WUA-wise performance of water tariff collection (through relevant institutional actions in [Appendix 1](#)), (c) put into operation participatory decision making for fund allocation and utilization of O&M in each scheme; and (d) introduce needs- and performance-based fund allocation system (for grant-in-aid followed by maintenance fund) by establishing direct linkage between the water tariff submitted and funds allocated.
- (ii) At the subproject level, PMU and SIOs will put into operation the specific arrangements as stipulated in paras. 12–13 above, as an OIIAWMIP component for O&M sustainability.

IV. IMPLEMENTATION SCHEDULE

44. The OIIAWMIP will be implemented over eight years with four Projects having overlapping terms. Indicative implementation schedule of the Program and a list of subprojects are shown in [Appendix 10](#). The Project–1 will cover the period of four years, and provide finance to partly implement the appraised two major and three medium schemes, and a total of about 650 community-based minor lift irrigation schemes. It will fully finance irrigation infrastructure for these schemes (except for MCII subproject), while financing the relevant cost of implementation (NGO and consulting services, support services for agriculture and allied sector, and project management) for the first two years. These subprojects were selected on the basis of readiness of implementation. Other (major and medium-scale) subprojects for inclusion in the subsequent Projects will be studied under the Project–1.

V. FACILITY UTILIZATION OF SUBSEQUENT PROJECTS

45. PFRs for financing subprojects under the subsequent Projects will be prepared following the set subproject selection criteria ([Appendix 8](#)) with the detailed feasibility studies including the safeguards assessments. At that time PMU will also assess the implementation progress and performance of the ongoing Project(s). This will cover the policy and institutional actions, progress in achieving the capacity development and other targets, lessons learned, and compliance in managing safeguards requirements. On the basis of these, specific measures to enhance the Program effectiveness will be identified for incorporation into the subsequent Project as necessary. ADB will engage with the OSG and the Government while the work is being carried out to provide advice. After ADB appraisal, the Government will submit a PFR of

the concerned Project, together with the appraisal reports of new subprojects and the Program performance assessment report. Until notice is otherwise given by the Government of India, the Secretary, Additional Secretary, Joint Secretary, Director, or Deputy Secretary in the Department of Economic Affairs of the Ministry of Finance of the Government of India are designated as authorized representative of India for the purpose of executing PFRs.

46. Each loan to be provided under the Facility will be subject to the following procedures and undertakings:

- (i) The Government will have notified ADB of forthcoming PFR at least 15 days in advance of the submission of the PFR.
- (ii) The Government will have submitted a PFR in the format agreed with ADB.
- (iii) ADB may decline to approve any PFR or authorize the negotiation of any legal document for a loan, provided that ADB communicates to the Government any decision to decline within 30 days from the receipt of the PFR.
- (viii) If ADB fail to advise the Government of its decision to decline, the legal documents will be negotiated and executed no later than 30 days from ADB's receipt of the PFR.

47. The PFR will be submitted following the format of the first PFR that includes the following details:

- (i) Loan amount
- (ii) Description of subproject/component to be financed
- (iii) Appraisal reports of all constituent subprojects including environmental assessment report and appropriate resettlement plan, if any;
- (iv) Cost estimates and financing plan;
- (v) Implementation arrangements specific to the subprojects or components
- (vi) Confirmation of the continuing validity of and adherence to the FFA provisions;
- (vii) Confirmation of compliance with the provisions under previous Loan Agreement and Project Agreement, as appropriate; and
- (viii) Other information as may be required under the Facility Administration Memorandum.

VI. ECONOMIC IMPACTS, SAFEGUARDS, AND SOCIAL DEVELOPMENT

A. Economic and Financial Impacts

48. The OIIAWMIP will renovate and extend 185,000 ha of major and medium-sized irrigation systems and 30,000 ha of minor lift irrigation systems, benefiting about 1.7 million people. The main quantifiable benefits will be the increased agriculture production brought about by reliable water supply and expansion of irrigated areas in the *kharif*, *rabi*, and summer seasons through renovated irrigation infrastructure and improved operations of the reservoirs and water distribution networks including field channels. Major quantifiable benefits are shown in the design and monitoring framework and monitored for individual schemes. Nonquantifiable benefits include the operation of sound irrigation service delivery with PIM, improved sector governance, and follow-on impacts on nonfarm sectors due to increased agriculture production.

49. For Project-1, economic and financial impacts were analyzed for two major, three medium-sized, and two sample minor lift systems.²² Cropping intensities will increase from 165% to 173% for Taladanda scheme and from 128% to 183% for MCII scheme, by 20%–35%

²² Details are shown in PPTA final report.

for three medium-sized schemes from the present level (125%–150%), and up to 220%–230% for minor lift schemes through full operation of the pumps. The economic internal rate of return (EIRR) is 19% for MCII, 20%–23% for major and medium-sized renovation schemes, and 30% and 38% for the two minor lift schemes. The investment will also have positive poverty reduction impacts on income, employment, and food security, particularly for marginal farmers. The poverty ratio is highly variable: 22% for Taladanda, 37% for MCII, 35%–69% for the three medium schemes, and 6% and 40% for the two minor lift schemes. Anticipated increases in incomes for marginal farmers are about 45% and 95% for Taladanda and MCII schemes, 60%–80% for the medium-sized schemes, and 70% and 105% for the two minor lift schemes.

50. For further schemes, similar assessments will be done at the time of PFR preparation (for major and medium schemes) and during implementation (for minor lift schemes).

B. Social and Gender Development Strategy

51. The OIIAWMIP will have beneficial social impacts. It will place emphasis on beneficiary participation with due attention to the diversity of their interests and vulnerability (e.g., tail end farmers). The strategy has two levels, including: (i) WUA capacity enhancement to ensure sound governance including representation, participatory decision making, and equal water distribution; and (ii) specific actions and programs targeting vulnerable groups including women with establishing linkage to the existing poverty reduction programs such as self help groups. In gender, its gender action plan includes: (i) creation of a staff position in DOWR PIM/CAD Directorate to look after social and vulnerable groups; (ii) development of training programs to enhance gender participation to staff; (iii) at least 20% women engaged as field implementation team, with increased female technical staff in DOWR; (iv) promotion of at least 33% women representatives elected to WUAs; (v) establishment of links with Department of Women and Child Development at central and field levels; (vi) formation of women groups and delivery of programs to support their empowerment within the WUA; and (vii) gender disaggregated baseline survey and monitoring. A summary poverty reduction and social strategy including gender action plan is in [Appendix 11](#), which will be put into operation under the Project–1

C. Social and Environmental Safeguards

52. **Indigenous Peoples.** Orissa has a relatively high indigenous population (22%) compared with other states. Under the OIIAWMIP, the Indigenous Peoples Development Framework (IPDF, [Supplementary Attachment 2A](#)) will be the basis for developing indigenous peoples development plans for schemes having project impacts on affected indigenous people.

53. Regarding the Project–1, three medium schemes were found to have high indigenous populations (at 23%, 26%, and 63%). Following the IPDF, indigenous peoples specific actions (IPSA) were prepared to benefit from the positive impacts and to avoid adverse impacts.²³ The specific actions include (i) promoting due representation of indigenous peoples in the concerned WUAs; (ii) undertaking separate information campaigns and needs assessment, and ensuring that their interests are met in the WUA development and program delivery process; (iii) forming indigenous people's groups within the WUAs and empowering them by establishing links to the existing OSG programs and supporting specific activities under the OIIAWMIP; and (iv) developing WUA capacities to address the needs of indigenous farmers.

54. **Resettlement.** The Investment Program will only involve the renovation of the existing irrigation infrastructure, except for MCII scheme where the irrigation system will be expanded

²³ Indigenous peoples specific actions are in [Supplementary Attachment 3A](#).

with minor canals. For the purpose of OIIAWMIP, a resettlement framework (RF) has been prepared ([Supplementary Attachment 2B](#)) following the Government's and OSG's laws and regulations, and ADB's *Involuntary Resettlement Policy* (1995). Under the RF, all affected persons (APs) will be entitled to compensation for land acquired and lost assets at their replacement cost. Resettlement plans (RPs) will be prepared by the concerned SIO with the support of the ISPM consultants, and implemented with a supporting NGO. The RPs and due diligence reports will be prepared for inclusion in the individual PFRs. Final RPs revised after detailed designs will also be sent to ADB for approval. An independent monitoring agency will be engaged to assess performance and impacts. The total cost estimates for resettlement is about \$4.7 million.

55. For Project-1, an RP has been prepared for the MCII, which will be implemented after endorsement by the OSG and ADB. Due diligence reports for the main and distributary canals of other major and medium schemes have been undertaken. Any resettlement impacts for these schemes including minor canals will be addressed following the RF.²⁴

56. **Environment.** During the PPTA, an environmental assessment and review framework (EARF, [Supplementary Attachment 2C](#)) has been prepared to provide a framework for assessing and managing environmental impacts of individual subprojects, following the existing environmental laws and regulations of the Government, OSG, and ADB's *Environment Policy* (2002). Under the OIIAWMIP, environmental capacity development will be supported by having an environmental cell in the PIM-CAD directorate of the DOWR, to be strengthened by the ISPM consultants. For individual subprojects, IEEs or environmental impact assessments, if required, will be prepared following the EARF and included in the subproject appraisal report, with due public consultation and information disclosure.

57. For Project-1, initial environmental examinations (IEEs) were prepared for the seven subprojects proposed for the first PFR, which were classified as environmental category B.²⁵ Overall, the OIIAWMIP will have positive impacts on the environment, including improved water availability and water-use efficiency, increased agricultural production, and an institutional system of PIM to distribute water efficiently. Potential negative impacts include (i) increased competition in water use within the subprojects and with other water uses,²⁶ (ii) deterioration of water quality due to agriculture intensification, and (iii) impacts during construction of infrastructure. These are mitigated by (i) sufficient consultation to develop operational plans agreeable to all the WUAs, (ii) use of effective coordination mechanisms among the water users at times of drought, (iii) introducing integrated pest management and effective soil nutrient management, and (iv) ensuring safe and environmentally sound construction practices. Environmental monitoring and management plans will be included in the civil work contracts.

VII. FINANCIAL MANAGEMENT AND ANTICORRUPTION MEASURES

58. **Financial Management.** The OIIAWMIP's financial management procedures are detailed in Financial Management Manual (FMM) prepared under the CTA (Reference material B). For the purpose of OIIAWMIP, Finance Advisor-cum-Chief Account Officer (FA-CAO) of the office of Engineer in Chief in DOWR will serve as FA-CAO of OIIAWMIP, with the PMU's budget

²⁴ The RP and due diligence reports for subprojects under project 1 are in [Supplementary Attachments 3B and 3C](#). The scope for the MCII scheme under project 1 includes only the pre-construction works, including WUA formation, micro planning, and finalization and implementation of the resettlement plan. Civil works will be done in project 2.

²⁵ Shown as [Supplementary Attachment 3D](#).

²⁶ For major and medium-sized schemes, water balance was assessed to reconfirm the overall water availability with the updated hydrological data.

and administration cell dealing with financial management with the assignment of dedicated account officer and assistants including account assistants and computer operators. Day-to-day expenditure management will be handled by the disbursement unit attached to Executive Engineer Dam Safety with the assignment of a qualified accountant (deputed from DAG office), an auditor, and junior engineer(s). Within this institutional setup, the following arrangements will be put into operation.

- (i) **Budget.** Budget will be prepared by the SIOs and the PMU keeping in view of the programs for the next year and shortfall if any of the current year. PMU will (a) consolidate the budget and prepare an abstract, (b) obtain the concurrence of the EIC-PD and the Additional/Special Secretary DOWR, and (c) furnish the approved budget to the EIC, DOWR for preparing the final budget. Any revision, reappropriation, modification will follow the same path.
- (ii) **Letter of Credit (L/C).** The same financial unit will work for consolidating and maintaining the L/C register. The L/C requisitions received from the SIOs will be consolidated and placed to the PD, PMU through FA-CAO. PD, PMU will get the concurrence of the EIC, P&D and return the file to FA-CAO for furnishing the same to DOWR. After receiving the L/C, FA-CAO will distribute to the respective SIOs through EIC, P&D.
- (iii) **Verification of Expenditure and Auditing.** The dedicated financial unit will coordinate with the Auditor General's office for verification of actual expenditures and issuance of Audit Certificate. PMU budget and administration cell will have overall responsibility of submitting disbursement statements and receiving audit certificates.

59. **Anticorruption Measures.** The Government and OSG were advised of ADB's *Anticorruption Policy* (1998, as amended to date).²⁷ Consistent with its commitment to good governance, accountability and transparency, ADB reserves the right to review and examine, directly or through its agents, any alleged corrupt, fraudulent, collusive, or coercive practices relating to the Program. 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 for the Program. In particular, all contracts financed by ADB in connection with the Project shall include provisions specifying the right of ADB to audit and examine the records and accounts of the EA and all contractors, suppliers, consultants, and other service providers as they relate to the Investment Program.

60. The institutional arrangements and reporting mechanisms referred to in this document are put in place to enable monitoring and accounting of the use of ADB resources, and in accordance with ADB's *Anticorruption Policy*. Anyone coming across evidence of corruption associated with the Program must contact ADB's Office of the General Auditor, which will investigate such allegations, at the following address:

Anticorruption Unit	
Office of the Auditor General	
Asian Development Bank	Telephone: (632) 632 5004
6 ADB Avenue, Mandaluyong City	Facsimile: (632) 632 2152
0401 Metro Manila, Philippines	Email: anticorruption@adb.org

²⁷ Available at <http://www.adb.org/Documents/Policies/Anticorruption/>.

VIII. CONSULTING SERVICES

61. The OIIAWMIP will include consultancy packages including: (i) ISPM consultancy to fill the capacity gaps in delivering the intended project outputs while institutionalizing the PIM process and supporting steps for IWRM (174 person-months [p-m] of international and 606 p-m of national consultants); and (ii) implementation support consultancy for community-based minor lift irrigation schemes (about 1,080 p-m of national consultants). In addition, NGO services are required for (i) supporting WUA strengthening, WUA-level participatory micro planning, and program delivery for agriculture and livelihoods training; and (ii) facilitation and monitoring of resettlement plan implementation. Water and Land Management Institute (WALMI), the training and research institute under the DOWR for PIM and IWRM that is also registered under the Society's Act, will implement the action research and specified training activities based on the contracts between the PMU and WALMI.

62. The Project-1 will have the following packages: (i) ISPM consultancy for the entire Program Period (for which Project-1 will finance the first 2 years); (ii) implementation support consultancy for minor lift schemes (288 p-m of national consultants) for the first 24 months of the Program implementation period; (iii) four packages of NGO services for WUA strengthening, participatory planning and program delivery for Taladanda (years 1-5), MCII (years 2-4), Sunei and Remal (years 1-3), and Gohira (years 1-3) (for which the Project-1 will finance the first 2 years); and (iv) NGO services for facilitation and monitoring of RP implementation for MCII. In addition, MOU with WALMI will be put into operation to support the action research and the selected training programs for the first two years of Program implementation. These packages are shown as a part of the procurement plan for the Project-1 in [Appendix 12](#).

63. PMU will select and engage the consultants and NGOs using ADB's quality and cost based selection (QCBS) procedures. All agents will be hired in accordance with ADB's *Guidelines on the Use of Consultants* (2007, as amended from time to time).²⁸

IX. PROCUREMENT

64. Procurement to be financed from the Program will be carried out in accordance with ADB's *Procurement Guidelines* (2007, as amended from time to time).²⁹ 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). In procuring goods and related services, ICB procedures will be used if the estimated cost is at least \$1 million and NCB procedures if the cost is between \$100,000 and \$1 million. Shopping procedure may be followed if the estimated contract amount is less than \$100,000 for procuring low-value off-the-shelf goods, or simple civil works of low value.

65. In addition to the above, small community works associated with the minor canal and CAD works costing less than \$10,000 in value may be directly contracted with the concerned WUA that include the relevant facilities in its command area and are in charge of their O&M. Procurement through the concerned WUA through community participation modality (WUA to execute works through transferred fund from the SIO) will also be explored, starting with a pilot arrangement, subject to the acceptable terms and conditions of the OSG and ADB.

66. As to Project-1, the procurement plan is shown in [Appendix 12](#). Key items include (i) irrigation infrastructure and associated infrastructure for one major, three medium, and about

²⁸ <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>

²⁹ <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

650 minor lift irrigation schemes to be implemented in years 1–4, (ii) associated infrastructure and equipment including CAD and conjunctive use of groundwater, and civil works and equipment for institutional strengthening of DOWR in years 1–2, (iii) support services for agriculture and livelihood services (training, equipment, and supply) in years 1–2, and (iv) project management in years 1–2. For the civil works following the NCB procedures, ADB's standard bidding documents with post qualification under the two-envelope system will be adopted. [All tender packages and contract awards for the civil works for main and distributary canals will be submitted to ADB for concurrence. The first three packages for the minor canals, central procurement of minor lift equipment, and first package for any other minor procurement will be reviewed and concurred by ADB, after which the post-facto approval will apply.](#)

VIII. ADVANCE CONTRACTING AND RETROACTIVE FINANCING

67. Advance contracting for consultant and NGO engagement and procurement of goods and civil works, and retroactive financing will be applied for the Program. These arrangements have been approved for Project–1, and will be considered for subsequent Projects during the processing of individual PFRs. Total eligible expenditure under retroactive financing will not exceed an amount equivalent to 20% of the individual Project, and must have been incurred not more than 12 months before the signing of the relevant legal agreements. The Government was informed that the approval of advance action and retroactive financing does not commit ADB to finance the Project being developed under the Program.

IX. DISBURSEMENT PROCEDURE

68. The loan proceeds of each Project will be disbursed in accordance with ADB's *Loan Disbursement Handbook January 2007* (the Handbook),³⁰ as amended from time to time. It is expected that, for the most part, loan proceeds will be withdrawn following the reimbursement and direct payment procedures. The PMU may use the statement of expenditure (SOE) procedure under the reimbursement procedure for individual payments not exceeding \$100,000, in accordance with the Handbook. The PMU will maintain separate bank accounts for each Project. No imprest account will be required in Project–1.³¹ The relationships between component and expenditure items, eligible items for external financing and their share of financing are shown in the table in [Appendix 13](#).

69. For all withdrawals of each loan's proceeds of the Project, ADB must receive a withdrawal application in the prescribed format. The Handbook contains [withdrawal application forms](#) that can be used for the Project (samples provided as [Appendix 13](#)). Each withdrawal application is to be signed by representatives duly designated and/or authorized to withdraw from each loan account. For this purpose, the name of the authorized representative(s) must be provided through the Authorized Representatives of the Recipients to ADB including the authenticated specimen signatures of the representative(s) before the first withdrawal application is submitted to ADB for each Project. Separate withdrawal applications must be submitted for ADB loan and for OFID loan for the concerned eligible expenditure items.

³⁰ http://www.adb.org/documents/handbooks/loan_disbursement/loan-disbursement-final.pdf

³¹ Each Project in the subsequent period may have its own imprest account in the Reserve Bank of India, if required. The OSG, through DOWR, may establish a second-generation imprest account (SGIA), if necessary, in a current account with a commercial bank. The imprest accounts will be established, managed, and liquidated in accordance with the Handbook (see Chapter 10 and Appendix 10 of the Handbook) and detailed arrangements agreed upon by the Government and ADB. DOWR will be responsible for administering and managing the imprest account and the SGIA shall be equivalent to six months of estimated expenditures or 10% of the relevant loan amount, whichever is lower. Individual payments under the SOE will also be at \$100,000.

Withdrawal application forms and other loan financial information can be downloaded from ADB's Loan and Grant Financial Information System (LFIS/GFIS).³² Access to the LFIS/GFIS can be requested by submitting the requisite form (also in Appendix 13).³³ The last date on which any disbursement under any loans under the Program may be made will be September 2017. The last date for the Project–1 is September 2013. The last Project is expected to be executed no later than April 2015.

X. PERFORMANCE MONITORING AND EVALUATION

70. DOWR will establish an investment program and roadmap performance monitoring system (IPRPMS) within three months of the effectiveness of the first loan. The IPRPMS will first select a set of result based performance monitoring indicators relating to physical implementation, institutional development, and socio-economic and other conditions, including those set out in the design and monitoring framework (pp. 7–10 of this document) for the Program as well as for the Project–1 (Appendix 5). DOWR will establish baseline data for each of the selected indicators within six months of the date the Project–1 takes effect. After that, DOWR will conduct annual surveys with the assistance of the consultants, and update OSG and ADB on the progress against each indicator.

71. The Project's performance will be reviewed monthly at the field level through regular SIO-WUA meetings where the progress of field activities delivered through field implementation teams and other providers will be assessed, and work plans for the subsequent period decided. PMU will also organize PMU-SIO review meetings, which will be reflected in the quarterly progress reports. At the country level, the progress is reviewed by a tripartite project review meetings chaired by the Government and attended by DOWR and ADB. ADB will undertake Project review twice a year, covering the performance of DOWR and other institutions, loan covenants, and physical and non-physical progress of implementation. Prior to the submission of individual PFRs, a detailed review of the Program performance will also be undertaken, possibly in combination with the Project review. A comprehensive mid-term review (MTR) for the Program will be done in year 4 (possibly coinciding with the review of the draft PFR for the third Project) to evaluate the progress of roadmap actions, performance of the Program institutions, and of all process and output indicators, and future implementation plans.

XI. REPORTING REQUIREMENTS

72. The DOWR will provide the Government and ADB with quarterly progress reports within 30 days of the end of each quarter. The report will cover the relevant indicators as specified in IPRPMS, and recommendations for enhancing the effectiveness of the Project and Program implementation. The monitoring report will also be used for shaping the subprojects to be developed for succeeding PFRs and loan tranches. A pro forma of the project report is given in Appendix 14. Prior to submitting individual PFRs, a report will also be prepared to review program progress and performance. A further detailed study will be conducted prior to the MTR. Within three months of physical completion of any Project under the Program, OSG will submit to ADB a project completion report. Within three months of the completion of the Program, OSG will submit to ADB a program completion report.

³² <http://lfis.adb.org>

³³ Form available at http://www.adb.org/Documents/Handbooks/Loan_Disbursement/Request-LFIS-Web-Access.doc.

XII. ACCOUNTING AND AUDITING REQUIREMENTS

73. The DOWR, through the PMU, will establish and maintain separate records for works, goods, and services financed out of loan proceeds. It will also maintain separate Project accounts according to generally acceptable accounting principles for all expenditures incurred under the Facility and the Projects, whether out of loan proceeds of ADB or OFID loan, or other sources. All funds received from the OSG, ADB, OFID, and beneficiaries will be recorded by DOWR in a transparent manner.

74. Detailed consolidated annual project accounts as maintained by the DOWR through the PMU, will be audited by independent auditors whose qualifications, experience, and terms of reference are acceptable to ADB, and will be submitted to ADB within 9 months of the end of the fiscal year. The annual audit report will include the audit of the imprest account (if established), the second generation imprest account (SIGA, if established), and the SOE procedure, and will include a separate audit opinion on the use of loan proceeds, the operation of the SGIA, and compliance with SOE procedures and loan covenants. The DOWR 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.

XIII. MAJOR LOAN COVENANTS

75. The standard loan covenants, as well as the other assurances, which have been agreed among the Government, OSG, and ADB to be complied with are in [Appendix 16](#).

POLICY AND INSTITUTIONAL ACTIONS

Key Issues and Actions	Actions by	Time Frame	Performance Indicators
A. Overall Policy and Plan Framework			
1. State Water Policy			
a. Finalize the policy (revising the policy adopted in 1994)	OSG	Mar 2007	Policy adopted in March 2007
b. SWRB activated to initiate and guide the actions specified in the policy to put the policy principles into operation	OSG	Mar 2008	Actions specified in the policy initiated
2. State Water Plan			
Expand the state plan with the river basin plans, building on the state plan approved in 2004	DOWR	Dec 2012	Basin plans for the four river basins prepared in consultation with stakeholders
B. Participatory Irrigation Management			
1. Organizations			
1-1. Department of Water Resources			
a. Establish multidisciplinary PIM–CAD directorate headed by additional secretary-level staff on a permanent basis	OSG	Dec 2007	Directorate established (with O&M, PIM, CAD, and training divisions) and staff assigned
b. Realign the DOWR setup into directorates of irrigation and of IWRM	OSG DOWR	Dec 2007	DOWR offices realigned (IWRM to include water planning, tariff, hydrology, and groundwater)
c. Initiate organizational change management process to formulate institutional vision and strategy	DOWR	Started in Mar 2008	Vision and strategy adopted by mid 2009;
d. Issue staff instructions on the client orientation to WUAs, and reflect it in the staff performance evaluation system	DOWR	Dec 2008	Staff attitudes on working relations improved to take WUAs as partners
e. Start implementing a capacity-development plan for PIM including design skills for structures and O&M arrangements	DOWR	Dec 2008	Capacity-development plan adopted, training started and capacity improved
f-1. Rationalize nontechnical field staff with natural attrition policy. f-2. Train existing nontechnical staff as canal operators and WUA support staff, and deploy them to work closely with WUAs	DOWR	Ongoing Starting Apr 2009	Field staff to reduce by 50% by 2017 Canal operations improved with deployment of DOWR workers in WUAs
g. Establish improved MIS for scheme-wise O&M performance monitoring and planning	DOWR	Dec 2009 (framework)	Data collection and entry systems in place and reports produced and distributed to managers
h-1. Establish quality control cell to engage third-party consultants and initiate third-party testing and internal technical auditing	OSG DOWR	Mar 2008 (OSG clearance)	Quality control cell established, and made operational; construction quality improved
h-2. Improve field quality monitoring by engaging WUAs as participants in monitoring	DOWR	Starting Apr 2009	Construction quality ensured with WUA engagement in quality monitoring
h-3. Implement annual full financial audit of all offices through internal audit wing of DOWR inspecting all transaction records in relation to the OIIAWMIP	DOWR	Starting Apr 2009	Efficiency of internal financial management enhanced with reduced audit observations
1-2. Water and Land Management Institute			
a. To remodel WALMI on the following accounts, as a center of excellence on PIM, IWRM, and irrigation technology: - Reorganization of board of governors to include institutions	OSG DOWR	Dec. 2007	A full-functioning and revitalized board in place

Key Issues and Actions	Actions by	Time Frame	Performance Indicators
outside OSG and WUA representatives			
- Appointment of qualified director, with greater autonomy		Apr. 2008	that has established a clear operating mandate Leadership provided by well-qualified director. Qualified and dedicated faculty in place.
b. Upgrade and update training programs, with focuses on staff training, and WUA trainer training	WALMI	Dec 2010	Well-defined programs defined and made operational
2. Pani Panchayat Act 2002 and Pani Panchayat Rules 2003			
a. To refine the Pani Panchayat (PP) Act 2002 and Rules 2003 on following: - Extending tenure of elected members to 6 years, with overlap of two terms in 3-year intervals - Equal representation of farmers in canal head, middle, and tail reaches in the executive committee and office bearers - Promote greater women's participation and increase their representation in the executive and other committees	OSG	Feb 2008 (Cabinet approved) Dec 2008 (PP Act); June 2009 (PP Rules)	Improved functioning of WUAs doing O&M on an ongoing basis WUA committee and office bearers represent the equal mix of head, middle, and tail reaches Percentage of women in WUA committees increased (towards 33%)
b. To implement the following in OIIAWMIP: - Participation of WUA and higher-level committees in the decision making of maintenance planning - Promote participation of vulnerable groups as formal and informal groups to work with WUAs - Promote gender action: 20% women in NGO support teams, 33% women representation in WUA committees; agriculture and livelihoods program delivery to women groups, and gender disaggregated baseline survey and monitoring.	DOWR	Apr 2009 (to start)	Planning and implementation recognizes WUA inputs WUAs establish capacities to deal with the interest of vulnerable people Gender action plan promoted to increase women membership in WUA committees and livelihood enhancement of women groups in OIIAWMIP subprojects
3. Progress in Participatory Irrigation Management and Irrigation Management Transfer			
a. Establish information, communication, and education strategy and plan, and start its implementation	DOWR	June 2008	Strategy prepared and implementation started, resulting in enhanced awareness
b. Advance WUA formation in public irrigation schemes	DOWR	Ongoing	Process of WUA formation completed except for schemes with poor infrastructure
c. WUAs to introduce rules and actions to enhance water use efficiency (plan of actions to reduce loss and waste, special levy for high water-use crops, rule enforcement, etc.)	DOWR	Starting Jan 2010 (in OIIAWMIP)	WUA's water distribution improved with increased irrigated area, cropping of high value low water-use crops, etc.
d. Extend the irrigation management transfer to distributary canal levels with good WUA performance		Dec 2013	
4. Sustainable Operation and Maintenance			
4-1. Operation and Maintenance Fund Allocation and Revenue Targets			
a. To allocate O&M fund following the Finance Commission	Finance Department	FY2006 (12th FC completed)	Annual allocation reflecting the level recommended by the Finance Commission
b. To revise water tariff levels to meet the O&M fund allocation:	OSG	Mar 2009	Water tariff levels set to fully recover the O&M

Key Issues and Actions	Actions by	Time Frame	Performance Indicators
to increase industrial water tariff following FY2006 increase			fund allocation
c. Undertake institutional assessment and establish a regulatory authority or commission for water tariff fixing	OSG/ DOWR	Dec 2010	Regulatory organization set up, and water rates defined with a set of standards and guidelines
4-2. Reducing Operation and Maintenance Revenue Gaps			
a. Strengthen MIS for scheme performance monitoring	(See B.1-1.d above)		(See B.1a.d above)
b. Joint verification of irrigated areas by DOWR and the Revenue Department to reduce the present wide gaps, using the MIS	DOWR/ Revenue Department	Starting 2009 (OSG order)	Reduced gap (40% at present) in irrigated area assessed by DOWR and certified by the Revenue Department
c. Prepare and put into operation guidelines for scheme-wise O&M fund allocation with performance-based criteria	DOWR	Dec 2010	Improved water rate collection through performance-based fund allocation
d. Improve revenue database to specify WUA water rate submission performance - Water tariff collectors to submit the abstract of WUA-wise water rate demand and collection to WUAs and DOWR - Change in irrigation rules as necessary to effect the above with the instruction to the tariff collectors	Revenue Department / DOWR	Dec 2010	Revenue Department to provide data to introduce the system of allocating irrigation water and O&M funds with direct link to the water rate collected
e. Introduce performance bonus or penalty in DOWR's grant system to WUAs	OSG/ DOWR	Dec 2010	Performance-based provision of grant operational, and water rate collection improved
4-3. Reducing Scheme-wise Shortfalls in Allocated Funds			
a. Reduce the DOWR overheads through natural attrition	(See B.1-1.c above)		Overhead costs reduced to the Finance Commission norm (Rs120/ha)
b. Joint decision making on scheme-wise O&M plan with WUAs, with providing fund to top up grant to WUAs and local resource mobilization by WUAs	DOWR	Starting Jan 2009	Decision making on O&M that substantially reflects WUA views
C. Integrated Water Resources Management			
a. Assess appropriate IWRM functions and institutions (e.g., an authority or commission) including water tariff fixation, allocation, entitlements, and other regulatory functions	DOWR/ SWRB	Dec 2010	Improved planning, regulation, and coordination mechanisms for water resources management operational
b. Undertake studies for appropriate legislation of the above organization and functions	DOWR	Jun 2009 (pilot to start)	Institution roles with respect to policy, regulation, and service delivery defined
c. Undertake studies to pursue appropriate environmental regulation, and prepare an action plan	DOWR	Jun 2009 (to start)	Improved planning, coordination, and conflict resolution, and management within basins
d. Strengthen database and decision support systems	DOWR	Jun 2009 (to start)	Improved database and DSS contributing to objective river basin water management

CAD = command area development, DOWR = Department of Water Resources, DSS = decision support system, FC = Finance Commission, IWRM = integrated water resources management, MIS = management information system, NGO = nongovernment organization, OIIAWMIP = Orissa Integrated Irrigated Agriculture and Water Management Investment Program, OSG = Orissa state government, O&M = operation and maintenance, PIM = participatory irrigation management, PP = pani panchayat (water user association), SWRB = State Water Resources Board; WALMI = Water and Land Management Institute, WUA = water user association.

Source: Asian Development Bank.

CAPACITY STRENGTHENING PROGRAM

A. Preamble

1. The Project will provide formal training that aims at enhancing the capacity of all stakeholders to effectively undertake the OIIAWMP and to ensure the sustainability of the infrastructure being put in place. The capacity strengthening arrangements proposed here are based on assessments undertaken during this Institutional Review, on discussions with DoWR, and on an understanding of the requirements of the Pani Panchayats.

2. Many of the programs proposed in this capacity plan should be considered as general modules. It is intended that the consulting services team working with DoWR management will continually refine and improve the training activities through the implementation period of the Project ensuring that the training is well focused and to ensure the program's continued relevance and effectiveness in meeting the needs of the various stakeholders.

3. The OIIAWMP Capacity Strengthening Program is basically organized around: (i) initiatives aimed at strengthening DoWR, WALMI and other partner agencies to improve their understanding of the Project and to enhance their skills to carry out those elements for which they have responsibility, (ii) capacity development focused on the Pani Panchayats, and (iii) orientation for the NGOs and their Support Services Teams who will assist in implementing the Project.

B. Strengthening DoWR, WALMI, and Partner Agencies

1. Institutional strengthening through consulting services

4. Significant institutional strengthening is expected as a result of the TA services provided by a team of international and domestic consultants. By advising and assisting DoWR, WALMI, and to a more limited extent the partner agencies in implementing the Project, this team will support the concerned staff at the State and field levels, as required to effectively manage the various components of the Project and to ensure that the outputs are sustainable rehabilitation, extension, and modernization of irrigation infrastructure by ensuring extensive stakeholder participation in all phases of the Project and by improved PP supported systems operation and maintenance.

2. International Training

5. International training is proposed to strengthen the technical capability of DoWR and WALMI. To assist WALMI in moving forward, it is suggested that the Project support a twinning arrangement with an appropriate reputable international institute. The purpose would be to expose WALMI staff to another institution with a similar mandate, to share experiences and obtain external advice on issues that may arise, and to provide the opportunity to introduce guest lectures into Orissa. An institute that could be considered for this purpose is the Asian Institute of Technology (AIT) in Thailand. The actual exchange of faculty could involve three persons from each institution visiting the other institution on an annual basis for five years.

6. The international training for DoWR relates primarily to better understanding of water resources planning as well as analytical and participatory methodologies to contribute to this. This training would contribute to building a more effective IWRM Directorate. The training would

be restricted to those persons having a clear and direct relationship with OIIAWMP and includes:

- About 20 persons over a five year period participate in training at DELFT Hydraulics. The selected training would deal with basin planning with a technical component that addresses analytical methodologies including mathematical modeling systems and hydrological analysis. The training should also address methods to involve stakeholders such that the basin planning process is participatory.
- MIKE 11 is a system for the 1-dimensional, dynamic modeling of rivers, channels and irrigation systems, including rainfall-runoff, advection-dispersion, morphological, and water quality. Flow over weirs, through culverts and user-defined structures, and over the flood plain can be simulated. DoWR requires stronger capability with the MIKE 11 hydraulic model. For that purpose, it is proposed to send four individuals to the Danish Hydraulics Institute for training.
- Support the visit of a delegation of up to 8 senior people to the Murray Darling Basin in Australia to provide a better understanding of River Basin Organizations.

3. Capacity Building for DoWR and Project Specific Partner Institutions¹

7. A series of workshops will be conducted that provides participants with an understanding of Project specific implementation arrangements. The training will be based on the Project documents prepared during Project preparation and will:

- Ensure that the PMU and the PIM / CAD Directorate understands and is able to guide the implementation of the Project
- Ensure that the DoWR staff at the SIO level understands the Project, particularly the participatory aspects that are associated with the various stages of subproject development including planning, design, construction, and O&M and that they understand their relationship with the other SIO cells – CAD and PIM.
- Provide the participants of the District Level Coordination Committee with an overview of the Project and its implementation plan.
- Provides the PMU and DoWR staff at the SIO with an understanding of the Project specific MIS system.

8. Training materials will need to be prepared and training programs delivered to DoWR staff at the SIO level that provides them with:

- Basic knowledge on participatory irrigation management.
- An improved understanding of systems operation and maintenance.

9. Corporate change related training will be included to assist DoWR with the institutional changes it will be undergoing as part of the reorganization into the four directorates. In addition to supporting the reorganization of DoWR this training, oriented towards DoWR staff at all levels would also include an understanding of management support systems such as the corporate level MIS system to monitor on a longer-term basis, among other things the operation and maintenance activities and financing of irrigation systems.²

¹ Partner institutions include the Departments of Agriculture, Fisheries, Child and Women's Affairs, Scheduled Caste and Scheduled Tribe.

² The corporate MIS system is to be developed and established during Project implementation.

10. The Project will provide formal training to the DoWR IWRM Directorate and related institutions that aims at enhancing the capacity of stakeholders to work more effectively towards integrated water resources management in accordance with the mandate of the State Water Policy. These training programs will be organized by the TA Consultants. Table A2.1 describes this training in slightly more detail. However, as noted earlier, the specific training activities are largely indicative and may be modified during implementation.

Table A2.1. Training Summary for DoWR and Partner Agencies

Training Module	Indicative Content	Participants	Resource Persons
Orientation Training			
Project Orientation Workshops	Review the detailed implementation plan to provide an overview of Project requirements	Project-related Staff of DoWR, Agriculture, Fisheries, Women's Affairs, and Pachayat Raj.	TA Team, DoWR staff involved with Project preparation
Management Information System Workshop	Review data requirements and responsibilities associated with operating and maintaining a Project MIS system	PMU, SIO managers and SIO MIS Experts	TA Team
Participatory Irrigation Management			
PIM and PP Act Training	Review the PP Act. Review and understand the Micro-planning process.	PMU, SIO	WALMI
Communications	Strengthen the ability of DoWR staff to constructively interact with PPs	DoWR field staff	TA Team
PIM Study Tours	12 study tours comprising up to 10 persons each be organized to states such as Maharastra, Tamil Nadu, Andhra Pradesh, Madhya Pradesh, Gujarat, and Assam to expose participants to states with more advanced PIM practices.	Ministry staff. DoWR field staff including head quarters and field staff from the CAD / PIM Directorate.	PMU to organize
Operation and Maintenance Training			
Operation Plans	Operating procedures and operation plans including flow measurement and conjunctive use	DoWR SIO field staff	TA Team
Maintenance Plans	Asset management strategy and maintenance plans.	DoWR SIO field Staff	TA Team

Training Module	Indicative Content	Participants	Resource Persons
DoWR Technical and Corporate Change Training			
Analysis	Analysis & monitoring – computer use	DoWR SIO field staff	TA Team
Monitoring and Evaluation	Application and use of a performance monitoring and evaluation system	DoWR SIO field staff	TA Team
Remote Sensing and GIS Training	Develop the capability to use these tools by sending 25 persons (5 persons per year for five years) from DoWR to participate in an existing 12 week program that is conducted by the National Remote Sensing Agency in Hyderabad.	DoWR Staff	PMU to organize
Construction Management Training	Strengthen the construction management capability of mid and lower level staff. Send a total of 75 persons (15 persons per year for 5 years) to the NCCBM, in Ballabgarh, Utter Pradesh	Mid and lower level staff of DoWR	PMU to organize
Corporate Capacity Development Plan	Provide selected participants with the skills they need to prepare a Capacity Development Plan for DoWR.	DoWR Human Resource Development Department	TA Team
Corporate MIS Training	Provide participants with the knowledge they need to support and utilize the corporate MIS system.	DoWR staff	TA Team supporting the MIS consultant.
Corporate Change Training	Assist DoWR managers and engineers in adapting to the new corporate structure framework.	DoWR HQ Staff	Special Consulting or NGO Team
IWRM Related Training			
IWRM Workshops	Discuss IWRM related issues	Water Resources Board	Invited leading Indian analysts
In-country Study Tours	Review IWRM activities in selected more advanced states.	Water Resources Board and River Basin Organization(s)	PMU to organize

Training Module	Indicative Content	Participants	Resource Persons
Participatory Training	Provide exposure to methods that are used internationally to conduct participatory basin planning.	Technical Secretariat, River Basin Organization(s)	TA Team
River Basin Management	Establishing communication and coordinating networks, information systems.	River Basin Organization(s)	TA Team

C. Building Capacity within the Pani Pnchayats

11. The success of the Project hinges on the extent to which the Pani Panchayats become fully functioning farmer organizations. The capacity development program intends to:

- Provide the PP managers with an understanding of their roles and responsibilities with respect to their organization and DoWR and to provide them with tools to carry out their responsibilities.
- Provide the general membership of the PP with an awareness of the organization, how it is to function, and what their roles are.
- Provide more technical training to the general membership in areas that result in enhanced farming systems including diversified cropping, improved crop production, better water management and post-harvest technologies.

12. The training oriented towards the general membership of the PP needs to be constantly evaluated as to the extent to which the training is having an impact on the participants. Trainers will need to constantly adapt their material and its delivery to ensure that the messages are understood and relevant. An important principle that will be adopted in delivering training to the PP membership is that class room training will be minimized. The participants demonstrate they understand when they are able to perform the tasks that are being taught. This is particularly relevant to on-farm water management training and any construction, operation, and maintenance training. Similarly, agriculture related training should revolve around demonstrations.

13. The delivery of training will be timed to coincide with specific development phases of the Pani Panchayat that include: the PP establishment phase, the subproject construction phase, and the PP strengthening and intensive water management support phase. It is also important to note that since the PP Executive Committee will change periodically, the training that is targeted towards them will also need to be repeated. Tables A2.2 through A2.4 summarize these training programs.

Table A2.2. Capacity Strengthening during PP Establishment Phase

Capacity Strengthening Activity	Responsibility	Participants
Awareness Generation Camps	Support Services Team	All potential Pani Panchayat members
Newsletter: initial issue to provide orientation to the Project	TA Team	

Capacity Strengthening Activity	Responsibility	Participants
Water Management Drama	TA Team working with drama groups contracted by the PMU	
PP Act Training	Support Services Team	Chak and Executive Committees of the Pani Panchayat
Training in Micro-plan preparation		
PP Management Orientation Course		
Orientation to Irrigation System Principles	SIO manager and supporting engineering staff	
MIS Orientation	MIS Expert	PP Executive Committee

Table A2.3. Capacity Building during the Subproject Construction Phase

Capacity Strengthening Activity	Responsibility	Participants
Construction Observation Training	SIO; TA Team to assist	PP O&M subcommittee
PP Financial Management	Support Services Team	Chak and Executive Committees of the Pani Panchayat
Environmental Training		
Gender Training		
PP Management Roles and Responsibilities		
Agriculture Training		Selected members of the PP General Body
Irrigation Management Training		
Fisheries Training		
Agriculture Marketing		
Constructing and rehabilitating minors and sub-minors	Support Services Team	PP O&M Committee
Exchange Visits to better functioning PPs	SIO to arrange	PP Executive Committee

Table A2.4. Capacity Building during the PP Strengthening and Intensive Water Management Support Phase

Capacity Strengthening Activity	Responsibility	Participants
O&M Training	Support Services Team	PP O&M Committee
Joint Walk through	Support Services Team and DoWR field staff	
Monitoring water delivery to PPs	SIO	
On-farm Water Management	Support Services Team	PP Members

D. Support Service Team Training

14. The Support Service Teams play a crucial role in the implementation of the Project and will have an enormous impact on how well the PPs develop. To assist the Support Services Team in understanding their role, the members of this team will be provided with a series of training that (i) orients them to the implementation arrangements that will be adopted for the Project, (ii) promotes their understanding of the PP Act and rules, (iii) provides them with an understanding of the specific irrigation system within which they are working and the planned improvements, and (iv) develops their understanding of the O&M requirements of the system. This training will be organized by the TA Team on an on-going basis since Support Services Teams will be added as subprojects are added. Also, Team members will change over time and new Team Members will need to be trained. The suggested responsibility matrix is shown in Table A2.5.

Table A2.5. Support Services Team Training

Capacity Strengthening Activity	Responsibility
Orientation to Implementation Arrangements	TA Team
PP Act, Rules, and Management	WALMI
Irrigation System Familiarization	SIO Engineering Staff
O&M Requirements	

TECHNICAL ASSISTANCE FOR INSTITUTIONAL DEVELOPMENT OF INTEGRATED WATER RESOURCES MANAGEMENT IN ORISSA

A. Background

1. In line with the proposed Orissa Integrated Irrigated Agriculture and Water Management Investment Program (OIIAWMIP) under ADB's multitranche financing facility (MFF), the Orissa state government (OSG) intends to progressively advance the enabling policy and institutional framework in introducing and operationalizing integrated water resources management (IWRM). A revised State Water Policy was promulgated in March 2007, setting out the step-by-step actions to this end, including (i) establishment and strengthening of the necessary institutions, economic and other instruments, and their legal and regulatory frameworks, and (ii) initiation of participatory basin investment plans with river basin organizations (RBOs). The technical assistance, to be financed by the Water Financing Partnership Facility, is provided to support the initial process of the Policy actions, with the consultative processes managed by the State Water Resources Board, a state apex body.

B. Purpose and Output

2. The purpose of the TA is to support OSG to initiate specific steps towards establishing and operationalizing IWRM at state and the selected river basin levels with stakeholder consultations and awareness, and capacity building of the concerned sector organizations. The specific outputs will include (i) recommendations on appropriate institutional framework for IWRM; (ii) detailed work plan to establish the recommended organizations, functions, and legal and regulatory basis; (iii) enhanced awareness of sector organizations and stakeholders on IWRM; and (iv) establishment and initial operation of a pilot river basin organization (RBO) in the Baitarani River basin and the process of preparing a participatory basin investment plan.

C. Methodology and Key Activities

3. The TA will (i) take a participatory consultative approach to deliver its intended outputs with formation of a state level advisory group (comprising local experts and stakeholder representatives) and organization of workshops, (ii) assess and introduce national and international lessons and best practices in promoting IWRM on the basis of river basins, and (iii) assess the specific characteristics and constraints in India in putting into operation the IWRM with specific recommendations to move forward. The TA will comprise two main components. The first is to facilitate the state-level formulation of the broad institutional framework of IWRM (including appropriate functions, institutional setup and arrangements, and associated legal and regulatory basis) and of a work plan towards establishing and putting into operation the recommended framework. The second component will facilitate the operationalization of IWRM in the Baitarani River basin with the establishment of a participatory RBO following the existing OSG regulation with necessary refinements, and supporting the initial functions including inventorying of water-related data and information, participatory multi-sectoral coordination on water resources management and investment planning.

D. Cost and Financing

4. The total cost of the TA is estimated at \$313,000 equivalent. The TA will be financed on a grant basis by the Water Financing Partnership Facility, which will be administered by ADB. The OSG will finance the remaining costs of \$63,000.

Table A3.1. Cost Estimates and Financing Plan

(\$,000)	
Item	Total Cost
A. Water Financing Partnership Facility Financing ^a	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants	120
ii. Domestic Consultants	65
b. International and Local Travel	29
c. Reports and Communications	2
2. Studies	3
3. Workshops, Seminars, and Training	4
4. Administrative and Support Services	2
5. Contingencies	25
Subtotal (A)	250
B. Government Financing	
1. Office Facilities and Administrative Support	15
2. Counterpart Staff including Transport	24
3. Studies, Surveys, Data Analysis, and Reports	24
Subtotal (B)	63
Total (A+B)	313

^a Administered by Asian Development Bank.

E. Implementation Arrangement

5. The executing agency for the TA will be DOWR and Engineer in Chief (Planning and Design) will serve as Project Manager of the TA, with the overall supervision by Principal Secretary DOWR and guidance by the SWRB. The TA will be implemented for 9 months from January to September 2009. The TA will finance the services of 4 person-months of international consultants and 10 person-months of national consultants, who will be engaged individually in accordance with ADB's Guidelines on the Use of Consultants. At the outset, an advisory group (AG) will be formed comprising eminent local experts including those from local academia and consultants, NGOs active in the sector, and other stakeholder organizations. The AG will meet three times at inception, mid-term, and draft final stages, whereas two stakeholder workshops will be organized after inception and at the draft final stage. The consultant will submit an inception report within two weeks after beginning the assignment to OSG and ADB. An interim report will be submitted at the end of the 4th month, and a draft final report including the detailed work plan for the further steps for institutionalizing IWRM will be submitted at the end of the 7th month. A final report will be submitted at the end of the 8th month after incorporating comments from OSG, the Government of India, and ADB.

F. Outline Terms of Reference of TA Consultants

1. International IWRM Specialist (4 person-months)

- (i) Synthesize the status and gaps of operationalizing IWRM in the light of the emerging water sector issues in Orissa, based on available reports.

- (ii) Analyze national and international best practices and lessons, and ways to address particular issues and constraints in India, advising on the work of the national IWRM specialist in this regard.
- (iii) Assess and recommend appropriate IWRM functions (including fixing water tariff, managing water allocation and entitlements/rights, other regulatory functions, etc., as well as process management towards IWRM operationalization), and institutional setup and arrangements at the state level.
- (iv) Assess and recommend appropriate structure and functions of the pilot RBO to be set up in the Baitarani River basin, and facilitate their establishment with national water resources planning specialist.
- (v) Develop a comprehensive roadmap towards operationalizing IWRM at state and basin levels in Orissa, with detailed work plans including the TORs for the follow-on studies and technical assistance to this end.
- (vi) Assist the consultative process in proceeding with the above studies, with the facilitation of advisory group meetings and state level workshops.

2. National IWRM Specialist (5 person-months)

- (i) Assess the latest development of IWRM in India in particular in the states having advanced institutional setup (e.g., Maharashtra), including the process, lessons, and key issues for Orissa.
- (ii) Synthesize the status of various IWRM functions, institutional responsibilities and legal bases, and performance, and assess the weaknesses and possible measures for improvement, as an input to international consultant.
- (iii) Assess the present status and performance of water and related data base and decision support systems for IWRM.
- (iv) Support any other tasks assigned by the international team leader in undertaking his/her assigned tasks.

3. National River Basin Planning Specialist (5 person-months)

- (i) Assess the latest development of RBOs in India including the institutional setup, performance, and lessons, in the light of available reports for Indian and international best practices and observation visits as necessary.
- (ii) Assess the existing RBO establishment regulation in Orissa, and recommend short-to medium-term measures to strengthen its functions and performance.
- (iii) Assist in defining appropriate activities and facilities considered for the Brahmani RBO including their work plan and TORs, such as establishing effective stakeholder networks, strengthening data and information base, initiating participatory basin development planning studies, etc.
- (iv) Facilitate the establishment of the Brahmani RBO with mobilization of awareness and interests of the concerned stakeholder organizations invited to the RBO, and their initial activities towards their effective operationalization.

DESCRIPTION OF PROJECT-1

A. Impact and Outcome

1. The impact of the first tranche (Project-1) for the Orissa Integrated Irrigated Agriculture and Water Management Investment Program (OIIAWMIP) will be the initial progress in enhancing the rural economic growth and reduced poverty in the OIIAWMIP areas, viz., the Brahmani, Baitarani, Burhabalanga, and Subernarekha River basins, and a part of the Mahanadi River delta areas. The outcome will be the initial progress in enhanced productivity and sustainability of irrigated agriculture in the 2 major and 3 medium existing irrigation schemes, and about 650 existing minor lift irrigation schemes, and improved institutional performance of irrigation service delivery and water resources management. The following specific schemes are included in the Project.

Table A4.1. Project-1 Scheme Profile

Scheme Name	Basin	Objective and Main Scope
Taladanda (major)	Mahanadi delta stage-I area	<u>Objective:</u> Renovation and modernization (having net irrigation area [NIA] of 32,700ha). <u>Main scope:</u> Formation and strengthening of 73 WUAs (years 1-2); infrastructure improvement (83.4km of main, 115.1km of distributary, and 386km minor canal systems), and WUA command area development (CAD) and agriculture support (years 1-2)
Mahanadi Chitropala (major)	Mahanadi delta stage-I	<u>Objective:</u> Extension of the completed scheme to achieve its full potential (from 7,300ha to 13,300ha). <u>Main scope:</u> Formation of 41 WUAs (year 2); finalization and implementation of resettlement plan.
Remal (medium)	Baitarani River	<u>Objective:</u> Renovation and modernization (NIA of 4,300ha). <u>Main scope:</u> Formation of 9 WUAs (years 1-2), infrastructure improvement (minor repair of reservoir, 18.5km of distributary and 49.9km minor canal systems), and WUA CAD and agriculture support (years 1-2).
Gohira (medium)	Brahmani River	<u>Objective:</u> Renovation and modernization (NIA of 8,300ha). <u>Main scope:</u> Strengthening of 19 WUAs (years 1-2), infrastructure improvement (minor repair of reservoir, 31.3km of distributary and 58.5km minor canal systems), and WUA CAD and agriculture support (years 1-2)
Sunei (medium)	Budhrabalanga River	<u>Objective:</u> Renovation and modernization (NIA of 10,000ha). <u>Main Scope:</u> Formation and strengthening of 20 WUAs (years 1-2), infrastructure (minor repair of reservoir, 46.0km of distributary and 125km minor canal systems), and WUA CAD and agriculture support (years 1-2).
Minor lift irrigation schemes	All 4 river basins north of Mahanadi River basin	<u>Objective:</u> Renovation of about 650 existing very minor lift irrigation schemes (average NIA of 22ha) <u>Main scope:</u> WUA strengthening, infrastructure renovation, agriculture, facility O&M training and handover.

B. Outputs

2. The outputs of the Project–1 are initial implementation progress achieved towards (i) productive and sustainable irrigated agriculture management systems in on major, three medium, and 650 minor lift irrigation schemes, and (ii) strengthened capacities of the institutions in delivering and sustaining irrigation services with WUAs.

Part A: Productive and Sustainable Irrigated Agriculture Management Systems¹

3. This component will establish productive and sustainable irrigation systems through WUA strengthening, renovation of irrigation and associated infrastructure, agriculture and livelihood support services, and O&M support. The following subcomponents are provided. Substantial WUA institutional strengthening and participatory planning will be pursued upfront with performance targets.

i. Participatory Planning and WUA Strengthening

4. **Participatory Planning.** Following the sample feasibility study documents prepared during the project preparatory technical assistance, the Project–1 will undertake participatory feasibility studies and preparation of implementation plans (SIPs) for the remaining major and medium irrigation schemes and for about 1,150 minor lift irrigation schemes. These are to be included in the subsequent Projects, except for 650 minor lift schemes to be implemented under the Project–1.

5. **WUA-level Micro-Planning.** For the five major and medium schemes, the planning process has two tiers: scheme-level framework planning (completed prior to PRF submission), and WUA-level implementation plans (WUAIPs). Following the former that provides an overall framework, WUA micro-planning will be initiated with the concerned WUA, the WUA support team (including NGO and locally identified facilitators), and DOWR field engineers. The Project–1 will finance the implementation of this subcomponent for the first 2 years of the Program. The planning process will be completed for the 3 medium and 1 major (MCII) schemes, whereas 67% of the WUA planning process will be completed for Taladanda scheme. (The rest will be financed under the Project–2.)

6. **WUA Strengthening and Empowerment.** The Project–1 will strengthen WUAs through WUA support teams to manage planning, construction, and post-construction activities as equal partner to DOWR. Specific targets would be pursued including membership enrollment; election and formation of executive committees and subcommittees, and implementing routine O&M on their own (building on the grant in aid provided by the DOWR) and other collective actions. For major and medium schemes, higher tier committees (project and distributary committees) will also be established during this process. The Project–1 will provide 2 years of support services, covering all WUAs for the 3 medium and MCII schemes and 67% of the WUAs for Taladanda scheme. The process will also be completed for 650 minor lift schemes.

¹ As to the major and medium schemes, the Project will envisage completing canal system renovation (provided in years 1-4), along with the associated WUA strengthening and initial round of agriculture training activities (provided in years 1-2). The follow-on activities will be taken up in the next PRF. The Project will also provide support for rehabilitation of minor lift irrigation schemes and associated WUA strengthening and support services (provided in years 1-4).

ii. Irrigation Infrastructure including Command Area Development

7. **Irrigation and Associated Infrastructure.** The Project-1 will provide renovation and extension of necessary infrastructure, including reservoir facilities (minor repair), head and cross regulators, canal systems, canal crossing bridges, inspection roads, cross drainages, and minor drainage works to address immediate local drainage problems, along with minor lift irrigation infrastructure. As to major and medium schemes (except for the MCII), all the main, distributary, and minor canal facilities are implemented under the present Project-1. WUAs will be involved in the implementation of the minor canal works within their own constituencies. Regarding the minor lift schemes, the rehabilitation of the existing infrastructure will be completed for about 650 schemes covering about 14,300ha. These are implemented in the first four years of the Program under the Project-1 financing.

8. **CAD and Conjunctive Use.** The OIIAWMIP will provide support for installing field channel systems as essential conditions to attain high water user efficiency, and crop intensification and diversification. Specific plans will be laid out in the WUAIP.² The OIIAWMIP will also promote conjunctive use of groundwater for rabi cropping, by providing groundwater survey, monitoring and information campaigns for private investments, and provision of pilot wells targeted to marginal farmer groups in the tail end areas. Under the Project-1, implementation of the works in major and medium schemes will be supported up to year 2.

iii. Agriculture and Allied Sector Support, and Livelihood Enhancement

9. **WUA Agriculture and Horticulture Development.** The OIIAWMIP will provide support to this end to supplement the existing Government and the State programs in the sector. The agriculture and horticulture subcomponent will cover (i) production systems including farmer field schools for crop intensification and diversification, soil nutrient management, seed multiplication, and integrated pest management, and (ii) organizational linkage of WUAs with input suppliers and marketing chains. New technologies and approaches, e.g., system of rice intensification, participatory variety selection, and farmer producer companies will also be introduced, along with development of other innovative technologies in partnership with local research agencies. The Project-1 will support the programs provided during the years 1-2 for major and medium schemes.

iv. Sustainable O&M System

10. The Project-1 will provide initial O&M training and monitoring for all the major, medium, and minor lift irrigation schemes taken up under the PFR. This will include joint monitoring, planning, and implementation process of main, distributary, and minor canal systems. Improved operational rules and performance will also be pursued with the instruction to DOWR non-technical field staff to report to WUAs for their regular duties. Regarding the minor facilities including minor lift schemes, the focus will be on generating necessary resources to meet the maintenance requirements.

² The CAD investment will be primarily implemented through extending centrally-assisted programs with state own counterpart contribution, whereas provision under the Project will also be provided to implement CAD for subprojects where central program support are not readily available.

Part B: Institutional Strengthening and Project Management

11. This component comprises (i) institutional strengthening for participatory irrigation management (PIM) and integrated water resources management (IWRM); and (ii) project management for OIIAWMIP. Project-1 will provide necessary hardware and software to support these ends covering the period of the first 2 years of the Program period.

i. Institutional Strengthening

12. **PIM.** This component will support (i) DOWR institutional strengthening (including office refurbishment and extension, equipment and supplies, and institutional studies to further the reform agenda of DOWR and Water and Land Management Institute), (ii) consultancy (for the implementation support of the institutional development Roadmap and advisory support of project implementation including training), and (iii) provision of training for institutionalizing PIM.

13. **IWRM.** In accordance with the roadmap, this subcomponent will support for (i) institutional studies to assess appropriate IWRM functions and mechanisms and actions to implement the recommendations; (ii) river basin studies with the establishment and initial operation of a pilot river basin organization; (iii) strengthening of hydrological data base in the concerned river basins; and (iv) staff training.

ii. Project Management

14. This subcomponent will operate OIIAWMIP project management systems through multi-disciplinary project management unit (PMU) and subproject implementation offices (SIOs). This will support the operational cost of the project management hardware and software including incremental staff, hired staff, and implementation services consultancy for the effective implementation of minor lift irrigation schemes.

DESIGN AND MONITORING FRAMEWORK (PROJECT 1)

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
<p>Impact</p> <p>1. Enhanced economic growth and reduced poverty in the selected river (sub-)basins in Orissa with direct benefit to 450,000 people in the tranche-1 subproject area</p> <p>2. Initial institutionalization of effective mechanisms to put into operation PIM-based agriculture growth</p>	<ul style="list-style-type: none"> • Incremental farm (by 60% on average) and allied incomes • Livelihoods of the poor improved with better incomes (by 40% from agriculture for landless and marginal farmers) and HDI • Replication of the institutional mechanisms across the state and the country 	<ul style="list-style-type: none"> • State and district statistics on agriculture, incomes, and HDIs • Baseline data and follow on BME reports • Annual report of MOWR and DOWR 	<p>Assumptions</p> <ul style="list-style-type: none"> • Stable political and local security conditions • Damage from natural calamities are rehabilitated and managed <p>Risks</p> <ul style="list-style-type: none"> • International terms of trade of agriculture products turns adverse
<p>Outcome</p> <p>1. Enhanced productivity, water use efficiency, and sustainability of irrigated agriculture in the selected existing schemes in the river basins having 69,600ha designed command area</p>	<ul style="list-style-type: none"> • Increased irrigated area (40%) crop intensity (20%) including high valued crops (10%) • Increased crop production (50%), and values per ha land • Improved efficiency in water use (area [30%] and production [50%] per unit of water) • Increased on-farm and allied activity employment (40 days per ha of land) <p>(Specific targets will be shown in each SIP of each scheme.)</p>	<ul style="list-style-type: none"> • State and district statistics • Project progress and completion reports • Project MIS comprising baseline, targets (benefits, disaggregated into gender, ethnicity, and land operational sizes), and process/management indicators 	<p>Assumptions</p> <ul style="list-style-type: none"> • Political support to sustain and proceed with reforms • Sound fiscal conditions to sustain O&M revenue and expenditure management • Project institutions including WUAs sustains their performance targets <p>Risks</p> <ul style="list-style-type: none"> • Extraordinary climates such as droughts and cyclones
<p>2. Improved institutional performance of irrigation service delivery (with PIM) and water resources management (with IWRM)</p>	<ul style="list-style-type: none"> • DOWR and WUAs sustain irrigation facilities while achieving annual targets in irrigation and production • Majority of WUA members satisfied with irrigation delivery and with DOWR service • OSG maintains full maintenance fund allocation policy while fixing necessary tariff levels for cost recovery • WUAs substantially submitting the set water tariff • Appropriate institutional setup and functions are introduced to operate IWRM 	<ul style="list-style-type: none"> • Baseline data and BME reports • Project progress and completion reports • Project MIS comprising baseline, targets, and process indicators • DOWR's MIS for monitoring and planning irrigation scheme O&M • DOWR's annual reports 	<p>Assumptions</p> <ul style="list-style-type: none"> • (Same as above) • Beneficiary willingness to pay for set water tariffs <p>Risks</p> <ul style="list-style-type: none"> • Local or internal conflicts threatening WUA performance
<p>Outputs</p> <p>A. Productive and Sustainable Irrigated Agriculture Management Systems</p> <p>1. Participatory Planning and WUA strengthening</p> <p>(i) Participatory scheme planning with feasibility studies and subproject implementation plan (SIP)</p>	<ul style="list-style-type: none"> • For all the major & medium sub projects upto 3rd tranche, and 650 MLI (for 1st tranche) subprojects appraised with SIPs with clear output targets and programs. 	<ul style="list-style-type: none"> • Prepared appraisal reports • Project progress reports • Consultants' reports 	<p>Assumptions</p> <ul style="list-style-type: none"> • Participatory process is duly followed by all. • Capacity strengthening and quality control are effective with qualified consultants engaged. • Beneficiaries support

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
(ii) WUA-level micro plans	<ul style="list-style-type: none"> For major and medium schemes WUA level micro-plans prepared and endorsed. 	<ul style="list-style-type: none"> ADB review missions 	collective action.
(iii) Strengthened WUAs: Viable WUAs set up to become effective community organization ready to receive investment support and to enhance agriculture production	<ul style="list-style-type: none"> 160 WUAs for major and medium, and 650 WUAs for MLI are strengthened with: <ul style="list-style-type: none"> Over 75% farmers enrolled, preferably with participation of 33% women Elections held, committees set up and functional Farmer contribution agreed Target number of women and vulnerable group enrolled WUAs endorse design Implementation agreements are signed 	<ul style="list-style-type: none"> Project MIS Project progress and completion reports Consultants' reports ADB review missions WUA constitution and its rules Signed implementation agreements 	Assumptions <ul style="list-style-type: none"> (Same as above) WUAs comply with beneficiary contribution requirements
2. Irrigation and Associated Infrastructure including command area development (CAD): Good quality infrastructure designed and constructed, following appraised plan and WUA micro plans	<ul style="list-style-type: none"> Infrastructure provided to 68,000 ha of area with WUA monitoring and satisfaction CAD and conjunctive use extended to 40% and 7% of area following WUA requests 	<ul style="list-style-type: none"> Project MIS Project progress and completion reports Consultants' reports ADB review missions Third party inspectors' report 	Assumptions <ul style="list-style-type: none"> (Same as above) WUA are willing to extend CAD and conjunctive use with beneficiary contribution
3. Agriculture Development and Livelihood Enhancement: Stipulated services in SIPs and micro plans provided, and targets set therein are achieved	<ul style="list-style-type: none"> WUAs achieve plan targets in cropping pattern and intensity, inputs, yield levels, etc. WUAs establish linkages for collective input delivery, extension and product marketing Livelihood targets as set out in micro plans are achieved Trained women groups account for preferably 33% of total 	<ul style="list-style-type: none"> (Same as above) 	Assumptions <ul style="list-style-type: none"> (Same as above) WUA members are willing to adopt modern agriculture practices Risks <ul style="list-style-type: none"> Natural calamities Volatile price reduction of agriculture products
4. Sustainable O&M Systems Established: Irrigation schemes operated and maintained on a sustainable basis	<ul style="list-style-type: none"> Scheme-wise O&M rules, annual O&M plans are prepared and implemented Water management practice is improved to achieve irrigation area targets for each WUA DOWR/ WUA has sufficient fund to undertake the stipulated O&M activities Regular annual WUA audit system is operational 	<ul style="list-style-type: none"> (Same as above) Irrigation scheme O&M MIS (annual resource need, planned and actual mobilization at scheme and WUA levels) Scheme performance and WUA performance audit reports 	Assumptions <ul style="list-style-type: none"> (Same as above) Damages from natural calamities duly rehabilitated DOWR staff pay due attention to O&M performance
B. Institutions Strengthened and Project Management Systems Operational 1. Policy, Planning, and Legal Framework (i) State Water Policy revised and implemented, with regular review by Water Resources Board (WRB)	<ul style="list-style-type: none"> Revised Policy in March 2007 Implementation status is annually reviewed and further actions taken guided by WRB 	<ul style="list-style-type: none"> Policy document Policy review reports Updated state water plans Basin development plans Refined WUA Act and 	Assumptions <ul style="list-style-type: none"> Political support to sustain and proceed with reforms Active stakeholder support and participation Effective capacity

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
(ii) State Water Plan updated with development plans for the four northern river basins	<ul style="list-style-type: none"> State water plan detailed in four basins with stakeholder participation (2012) 	Rules <ul style="list-style-type: none"> Project progress reports ADB review missions DOWR annual report 	development support through qualified consultants engaged
(iii) WUA Act and Rule refined for more sustainable and inclusive PIM	<ul style="list-style-type: none"> WUA Act and Rule revised with stronger WUA institutional continuity and head-tail representation by increased participation of women Refined act and rule made operational (2010) 		
2. DOWR Institutional Setup, Structure, Skill Mix, and Business Processes Strengthened <ul style="list-style-type: none"> (i) Institutional development vision and strategy refined (ii) Permanent PIM directorate established (iii) Quality control cell established (iv) DOWR capacity development plan (CDP) refined (v) Water and Land Management Institute (WALMI) reforms with autonomy 	<ul style="list-style-type: none"> Vision and strategy document (2009) PIM directorate set up, staff deployed, and made operational with training (2008) QC cell set up, staff deployed, and made operational (2008) CDP refined to meet with PIM and other requirements (2010) WALMI reformed with stronger autonomy and new director recruited from market (2008) 	<ul style="list-style-type: none"> DOWR Institutional vision and strategy document Revised service rules (job descriptions) QC guidelines CDP document and program lists WALMI organizational rule Project progress reports ADB review missions DOWR annual report 	Assumptions <ul style="list-style-type: none"> (Same as above) DOWR leadership dynamic and support the change process Staff level support for necessary reforms
3. Systems to Support Sustainable O&M <ul style="list-style-type: none"> (i) Fund allocation following Financial Commission (FC) (ii) Water rates revised to meet the allocation needs (iii) Collection improved with WUA involvement (iv) Land records improved providing WUA-specific data for collection/demand (v) Scheme MIS for O&M performance monitoring and planning (vi) DOWR establishes linkage between water rate collection and allocation (vii) Pilot delegation of water tariff collection and retention by WUAs 	<ul style="list-style-type: none"> Allocation to follow FC recommendations (2011) Water rates revised following the FC report (2012) Percentage of collection against the target improved Improved data base to generate the required data MIS developed with monitoring data (2010) Fund allocation mechanisms improved, linked with WUA collection performance (2010) WUA performance for pilot tariff collection effective (2011) 	<ul style="list-style-type: none"> FC reports OSG annual budgets Gazette notification of water rates Finance Department data on water rates collection performance Consultants reports and special study reports Project progress reports ADB review missions DOWR annual report 	Assumptions <ul style="list-style-type: none"> (Same as above)
4. Progress of Actions towards Operationalizing IWRM <ul style="list-style-type: none"> (i) Appropriate IWRM functions and institutional arrangements defined (ii) Institutions established to operationalize IWRM (iii) Participatory RBO established with decision support systems (DSS) 	<ul style="list-style-type: none"> Institutional arrangements clarified for IWRM functions (2009) Establishment of IWRM institutions (2012) RBO set up and made operational with effective DSS (2012) 	<ul style="list-style-type: none"> IWRM action plan State WRB reports Consultants reports and special study reports Project progress reports Pilot RBO reports ADB review missions DOWR annual report 	Assumptions <ul style="list-style-type: none"> (Same as above)

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
5. Project Management System Established and Made Fully Operational - DOWR offices - Line agencies - Local governments - WUAs - NGOs - Private providers	<ul style="list-style-type: none"> PMU, SIOs established, staffed, and trained (2008) Project manuals prepared and fully operated (2008) Consultants and NGOs engaged and provide effective support (2008) Accountability measures for project institutions made operational (2009) 	<ul style="list-style-type: none"> Detailed operational guidelines Consultants reports Special study reports including the third party Project progress reports ADB review missions DOWR annual report 	Assumptions <ul style="list-style-type: none"> Sufficient counterpart funding Engagement of qualified consultants and NGOs
6. Training/Capacity Development: Capacities of project institutions are strengthened through training (for Project management, PIM, IWRM, & agriculture development)	<ul style="list-style-type: none"> Capacity Development Plan (CDP) is prepared and started to be implemented (2009) Project institutions are fully operational through project management support (2009) 	<ul style="list-style-type: none"> CDP CDP implementation report (by consultants) Project progress reports ADB review missions DOWR annual report 	Assumptions <ul style="list-style-type: none"> Effectiveness of training and trainers Retention of the developed capacities Engagement of qualified consultants and NGOs
Activities with Milestones		Inputs	
1. By the Government/ OSG 1.1 Establishment of DOWR PIM Directorate, PMU and SIOs by 2007, recruitment of consultants and NGOs by 2008. 1.2 Preparation of all project-related guidelines and manuals including project implementation plan by mid 2008. 1.3 Finalize FS/SIP for all major medium schemes upto 3 rd tranche by 2011, and 650 minor lift schemes by 2011. 1.4 Implementation of actions for policy and institutional development between 2008-13 2. By Consultants and NGOs 2.1 Capacity development and project management activities until 2013. 2.2 Support for preparing FS/SIPs by 2011, operationalization of project arrangements and institutional actions by 2013. 2.3 Completion of training for tranche-1 schemes by 2013. 3. By WUAs/ Beneficiaries 3.1 Information campaign, member enrollment, participation in FS/SIP preparation, and upfront cash contribution by 2013. 3.2 Participation in design, construction monitoring, and simple civil work implementation by 2013. 3.3 Self-sustain O&M of transferred facilities by 2013. 4. By Support Organizations 4.1 FS/SIP preparation and NGO training by 2011. 4.2 Implement resettlement plans by 2011. 4.3 Detailed design and construction completed by 2013. 4.4 Provision of follow-up support until 2013. 5. By ADB 5.1 Project approval in 2008. 5.2 Inception mission within 2008, tranche-1 mid-term review mission in mid 2010, and regular review missions		<ul style="list-style-type: none"> Incremental staff, operating, and other implementation expenses Training (through support organizations) Mobilization of counterpart fund International and national consultant support (158 person-months [p-m] of international and 1,818 p-m of national consultants) Arrangements for project institution training Local resource mobilization for minor civil works, and for regular O&M including calamity fund and minor lift replacement fund Implementing regular O&M NGO/CO support to set up and strengthen 450 WUAs (about 810 person-year, preferably 20% women) Training and capacity building of support organizations Monitoring and evaluation Staff resources and staff consultants 	
Project Cost		Total: 66.4 million	

ADB = Asian Development Bank, CAD = command area development, CO = community organizer, CDP = capacity development plan, DDS = decision support system, DOWR = Department of Water Resources, FC = Finance Commission, FS = feasibility studies; IWRM = integrated water resources management, HDI = human development index, MIS = management information system, MOWR = Ministry of Water Resources, NGO = nongovernment organization, OSG = Orissa state government, O&M = operation and maintenance, PIM = participatory irrigation management, PMU = project management unit, RBO = river basin organization, RP = resettlement plan, SIP = subproject implementation plan, QC = quality control, SIP = subproject implementation plan, SIO = subproject implementation office, WALMI = Water and Land Management Institute, WRB = Water Resources Board, WUA = water user association.

COST ESTIMATES AND FINANCING PLAN

Table A6.1: Cost Estimates and Financing Plan (Total Investment Program by Components and Tranches: US\$ million) ^a

Item	Tranche 1 (FY2010–13)					Tranche 2	Tranche 3	Tranche 4	Total
	ADB	OFID	State	WUAs	Subtotal	FY2012–14	FY2014–16	FY2016–17	
A. Irrigated Agriculture Management Systems									
1. Planning and WUA Development									
a. WUA Mobilization through NGOs	0.7	0.0	0.0	0.0	0.7	1.7	1.9	0.7	5.0
b. WUA Elections, Buildings, etc.	0.0	0.0	0.2	0.0	0.2	0.2	0.1	0.1	0.6
2. Irrigation and Associated Infrastructure									
a. Land Acquisition and Resettlement	0.0	0.0	3.6	0.0	3.6	1.1	0.0	0.0	4.7
b. Infrastructure (Major and Medium schemes)	4.8	19.9	4.2	0.0	28.9	40.7	28.0	2.6	100.2
c. Minor Lift Irrigation	0.0	4.9	0.7	1.4	7.0	0.0	5.3	2.7	15.0
d. Command Area and Conjunctive Use	0.6	0.0	0.6	0.2	1.4	5.2	7.4	5.4	19.4
3. Agriculture and Livelihoods Support	0.6	0.0	0.0	0.0	0.6	2.1	2.7	1.4	6.8
4. Sustainable O&M	0.1	0.0	0.1	0.0	0.2	1.0	2.2	2.9	6.3
Subtotal	6.8	24.8	9.4	1.6	42.6	52.0	47.6	15.8	158.0
B. Institutional Development									
1. Institutional Strengthening									
a. Department of Water Resources	2.2	0.0	0.3	0.0	2.5	2.4	0.6	0.4	5.9
b. Training	0.6	0.0	0.0	0.0	0.6	0.7	0.7	0.4	2.4
c. Consulting Services	3.1	0.0	0.4	0.0	3.5	2.9	1.2	0.6	8.2
2. Project Management									
a. Project Management	0.9	0.0	2.8	0.0	3.7	4.9	4.3	3.0	15.9
b. Minor Lift Implementation Services	0.6	0.0	0.0	0.0	0.6	0.7	0.8	0.3	2.4
Subtotal	7.4	0.0	3.5	0.0	10.9	11.6	7.6	4.7	34.8
Total (Base Cost)	14.2	24.8	12.9	1.6	53.5	63.6	55.2	20.5	192.8
Price and Physical Contingencies ^b	2.3	5.2	1.8	0.2	9.5	18.4	20.4	8.4	56.7
Total Project Cost	16.5	30.0	14.7	1.8	63.0	82.0	75.6	28.9	249.5
Financing Charges ^c	0.0	0.0	3.4	0.0	3.4	7.4	6.9	0.5	18.2
Total Cost Including Financing Charges	16.5	30.0	18.1	1.8	66.4	89.4	82.5	29.4	267.7
Indicative ADB Financing Amount	16.5					62.7	57.8	20.5	157.5

^a In mid-2007 prices. Taxes and duties will be financed by the State.

^b Physical contingencies computed at 10% for civil works, NGO and consultancy costs, and project management, totaling 12.7 million. Price contingencies are computed at 0.8% per annum for foreign exchange costs and 4.0%–5.0% per annum for local currency costs.

^c Includes interest and commitment charges. Interest during construction has been computed at the 5-year forward London interbank-offered rate plus a spread of 0.2%.

Table A6.2: Expenditure Cost by Financiers (Total Investment Program) (\$ million) ^a

Item	ADB	OFID	State	WUAs	Total	Cost Sharing (% , average for all tranches)			
						ADB	OFID	State	WUAs
A. Civil Works									
M&M Schemes (Main and Distributary Canals)	53.5	12.9	7.6	0.0	74.0	72	17	10	0
M&M Schemes (Minor Canals)	15.0	7.0	2.3	0.0	24.3	62	29	9	0
Command Area Development	7.0	0.0	9.5	1.8	18.3	38	0	52	10
Minor Lift Schemes	4.5	3.9	1.2	2.4	12.0	38	33	10	20
O&M Support	2.5	0.0	3.1	0.6	6.2	40	0	50	10
Others	1.2	0.0	0.1	0.0	1.3	92	0	8	0
Subtotal	83.7	23.8	23.8	4.8	136.1				
B. Land Acquisition and Resettlement	0.0	0.0	4.7	0.0	4.7	0	0	100	0
C. Vehicles and Equipment									
Vehicles	0.1	0.0	0.0	0.0	0.1	100	0	0	0
Equipment and Materials	2.8	0.0	0.3	0.2	3.3	85	0	9	6
Minor Lift Equipment	1.1	1.0	0.3	0.6	3.0	37	33	10	20
Subtotal	4.0	1.0	0.6	0.8	6.4				
D. Specialist Services									
NGO Social Mobilization	5.0	0.0	0.0	0.0	5.0	100	0	0	0
Consulting Services	7.2	0.0	1.0	0.0	8.2	88	0	12	0
Minor Lift Implementation	2.4	0.0	0.0	0.0	2.4	100	0	0	0
Resettlement Plan Implementation	0.3	0.0	0.0	0.0	0.3	100	0	0	0
Studies	1.4	0.0	0.2	0.0	1.6	88	0	13	0
Subtotal	16.3	0.0	1.2	0.0	17.5				
E. Survey and Investigation	1.4	0.0	0.6	0.0	2.0	70	0	30	0
F. Training									
Irrigation Management	2.4	0.0	0.0	0.0	2.4	100	0	0	0
Agriculture and Livelihood	6.8	0.0	0.0	0.0	6.8	100	0	0	0
Subtotal	9.2	0.0	0.0	0.0	9.2				
G. Operational Costs	4.0	0.0	12.8	0.1	16.9	24	0	76	1
Total (Base Cost)	118.6	24.8	43.7	5.7	192.8				
Physical Contingencies	9.0	1.9	1.4	0.0	12.3	73	15	11	0
Price Contingencies	29.9	3.3	9.7	1.5	44.4	67	7	22	3
Total Project Cost	157.5	30.0	54.8	7.2	249.5				
Financing Charges	0.0	0.0	18.2	0.0	18.2	0	0	100	0
Total Cost Including Financing Charges	157.5	30.0	73.0	7.2	267.7	59	11	27	3

^a In mid-2007 prices. All taxes and duties will be financed by the State.

Table A6.3: Component Cost by Financiers (Project 1) (\$ million) ^a

Item	ADB	OFID	State	WUAs	Total	Project Cost Share
A. Irrigated Agriculture Management Systems						
A1. Planning and WUA Development						
i. WUA Mobilization through NGOs	0.7	0.0	0.0	0.0	0.7	1.3%
ii. WUA Elections, buildings, etc.	0.0	0.0	0.2	0.0	0.2	0.4%
A2. Irrigation and Associated Infrastructure						
i. Land Acquisition and Resettlement	0.0	0.0	3.6	0.0	3.6	6.7%
ii. Infrastructure (major & Medium schemes)	4.8	19.9	4.2	0.0	28.9	54.0%
iii. Minor Lift Irrigation	0.0	4.9	0.7	1.4	7.0	13.1%
iv. Command Area & Conjunctive Use	0.6	0.0	0.6	0.2	1.4	2.6%
A3. Agriculture and Livelihoods Support	0.6	0.0	0.0	0.0	0.6	1.1%
A4. Sustainable O&M	0.1	0.0	0.1	0.0	0.2	0.4%
Subtotal	6.8	24.8	9.4	1.6	42.6	79.6%
B. Institutional Development						
B1. Institutional Strengthening						
i. Department of Water Resources	2.2	0.0	0.3	0.0	2.5	4.7%
ii. Traininig	0.6	0.0	0.0	0.0	0.6	1.1%
iii. Consulting Services	3.1	0.0	0.4	0.0	3.5	6.5%
B2. Project Management						
i. Project Management	0.9	0.0	2.8	0.0	3.7	6.9%
ii. Minor Lift Implementation Services	0.6	0.0	0.0	0.0	0.6	1.1%
Subtotal	7.4	0.0	3.5	0.0	10.9	20.4%
Total (Base Cost)	14.2	24.8	12.9	1.6	53.5	100.0%
Physical Contingencies	1.1	1.9	0.7	0.0	3.7	
Price Contingencies	1.2	3.3	1.1	0.2	5.8	
Total Project Cost	16.5	30.0	14.7	1.8	63.0	
Financing Charges	0.0	0.0	3.4	0.0	3.4	
Total Cost Including Financing Charges	16.5	30.0	18.1	1.8	66.4	
Financing Share	25%	45%	27%	3%	100%	

^a In mid-2007 prices. All taxes and duties will be financed by the state.

Table A6.4: Expenditure Cost by Financiers (Project 1) (\$ million) ^a

Item	ADB	OFID	State	WUAs	Total	Cost Sharing (%)			
						ADB	OFID	State	WUAs
A. Civil Works									
M&M Schemes (Main and Distriburary Canals)	4.3	12.9	3.3	0.0	20.5	21	63	16	0
M&M Schemes (Minor Canals)	0.0	7.0	0.8	0.0	7.8	0	90	10	0
Command Area Development	0.6	0.0	0.6	0.2	1.4	44	0	46	10
Minor Lift Schemes	0.0	3.9	0.6	1.1	5.6	0	70	10	20
O&M Support	0.1	0.0	0.1	0.0	0.2	40	0	50	10
Others	0.6	0.0	0.1	0.0	0.7	90	0	10	0
Subtotal	5.6	23.8	5.5	1.3	36.2				
B. Land Acquisition and Resettlement	0.0	0.0	3.6	0.0	3.6	0	0	100	0
C. Vehicles and Equipment									
Vehicles	0.1	0.0	0.0	0.0	0.1	90	0	10	0
Equipment and Materials	1.1	0.0	0.1	0.0	1.2	89	0	10	1
Minor Lift Equipment	0.0	1.0	0.1	0.3	1.4	0	70	10	20
Subtotal	1.2	1.0	0.2	0.3	2.7				
D. Specialist Services									
NGO Social Mobilization	0.7	0.0	0.0	0.0	0.7	100	0	0	0
Consulting Services	3.1	0.0	0.4	0.0	3.5	88	0	12	0
Minor Lift Implementation	0.6	0.0	0.0	0.0	0.6	100	0	0	0
Resettlement Plan Implementation	0.1	0.0	0.0	0.0	0.1	100	0	0	0
Studies	0.3	0.0	0.0	0.0	0.3	90	0	10	0
Subtotal	4.8	0.0	0.4	0.0	5.2				
E. Survey and Investigation	0.5	0.0	0.2	0.0	0.7	75	0	25	0
F. Training									
Irrigation Management	0.6	0.0	0.0	0.0	0.6	100	0	0	0
Agriculture and Livelihood	0.6	0.0	0.0	0.0	0.6	100	0	0	0
Subtotal	1.2	0.0	0.0	0.0	1.2				
G. Incremental Operational Costs	0.9	0.0	3.0	0.0	3.9	24	0	76	0
Total (Base Cost)	14.2	24.8	12.9	1.6	53.5				
Physical Contingencies	1.1	1.9	0.7	0.0	3.7	30	51	19	0
Price Contingencies	1.2	3.3	1.1	0.2	5.8	21	57	19	3
Total Project Cost	16.5	30.0	14.7	1.8	63.0				
Financing Charges	0.0	0.0	3.4	0.0	3.4	0	0	100	0
Total Cost Including Financing Charges	16.5	30.0	18.1	1.8	66.4	25	45	27	3

^a In mid-2007 prices. All taxes and duties will be financed by the State.

Figure A7.2: Organizational Structure of Project Management Office and Subproject Implementation Offices

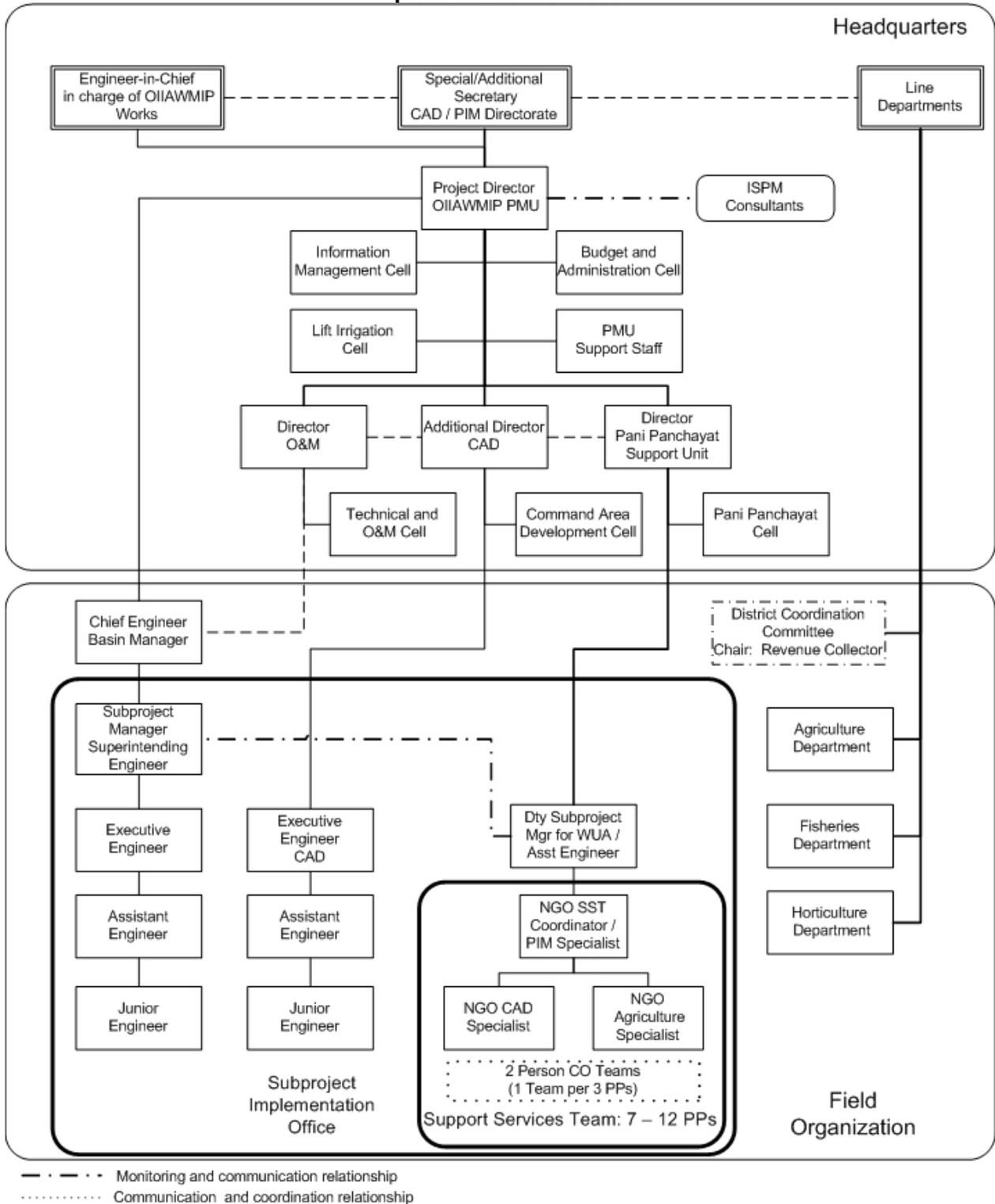
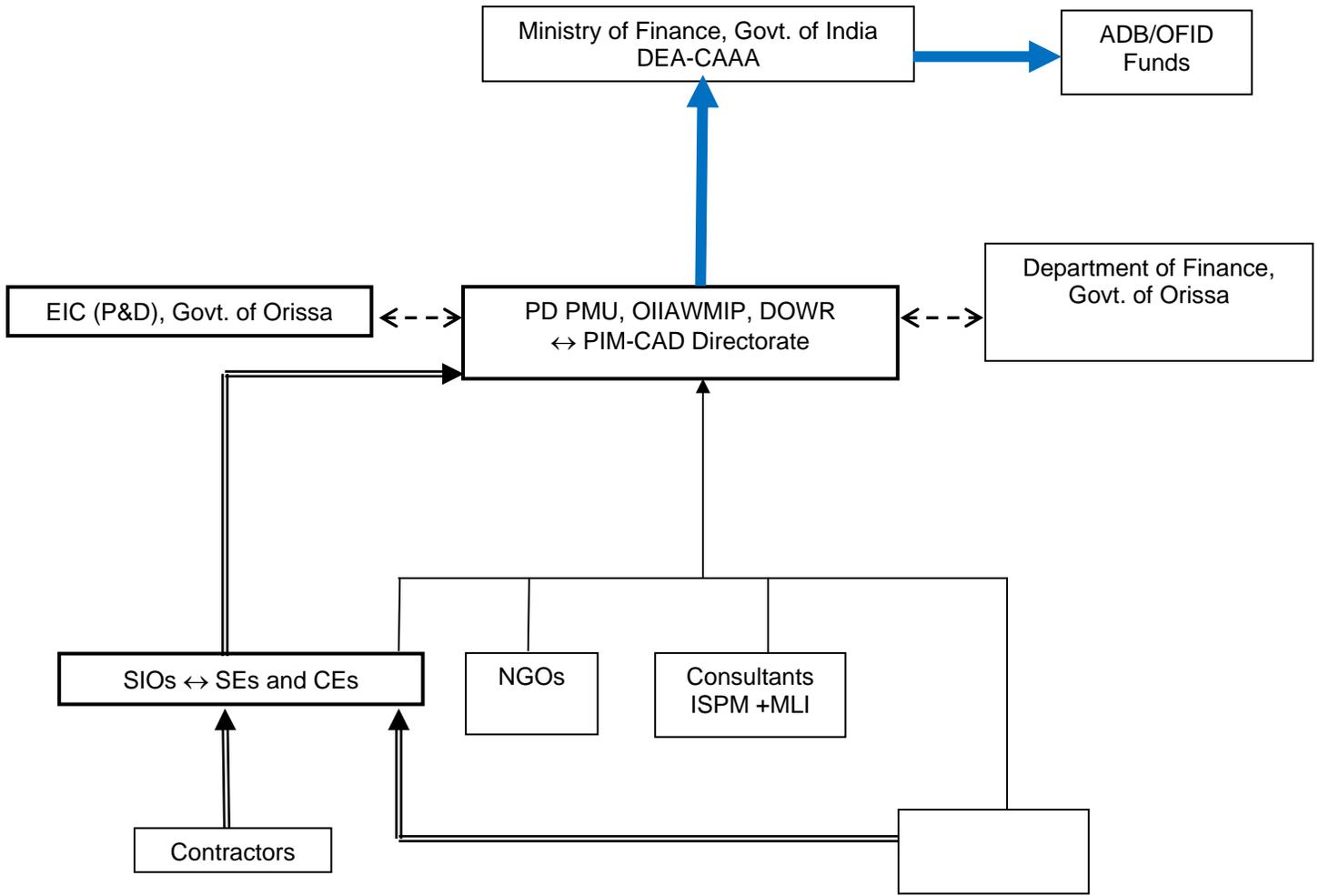


Figure A7.3: Arrangements for Submission of Expenditure Claims For Release Of Payments



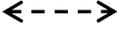
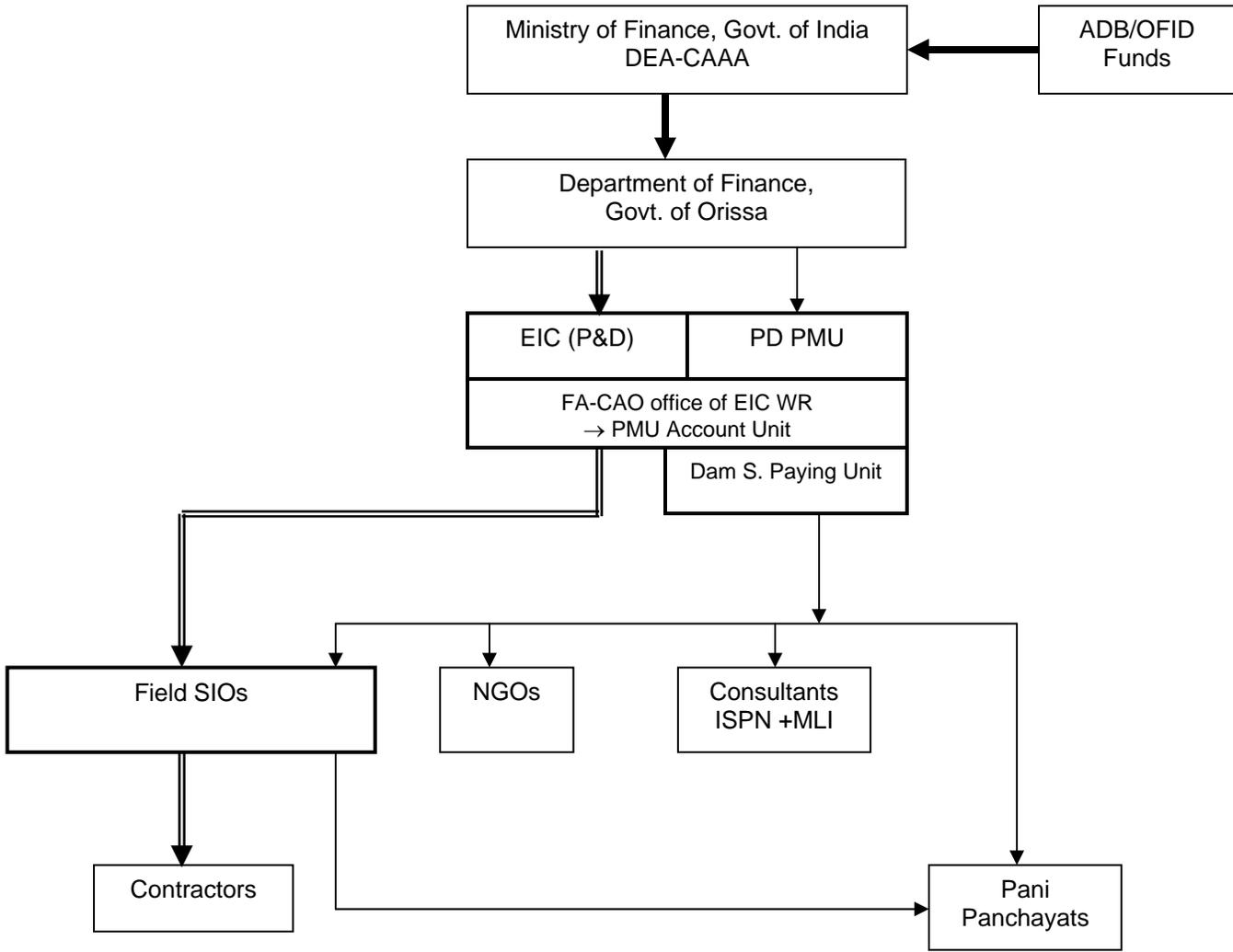
-  Submission of expenditure claims for disbursement processing by PMU (civil works)
-  Same as above (for other expenditure items)
-  PMU to consolidate expenditure claims (withdrawal applications) for submission to CAAA-ADB for reimbursement under OIIAWMIP
-  Copies of withdrawal applications submitted to Finance Department

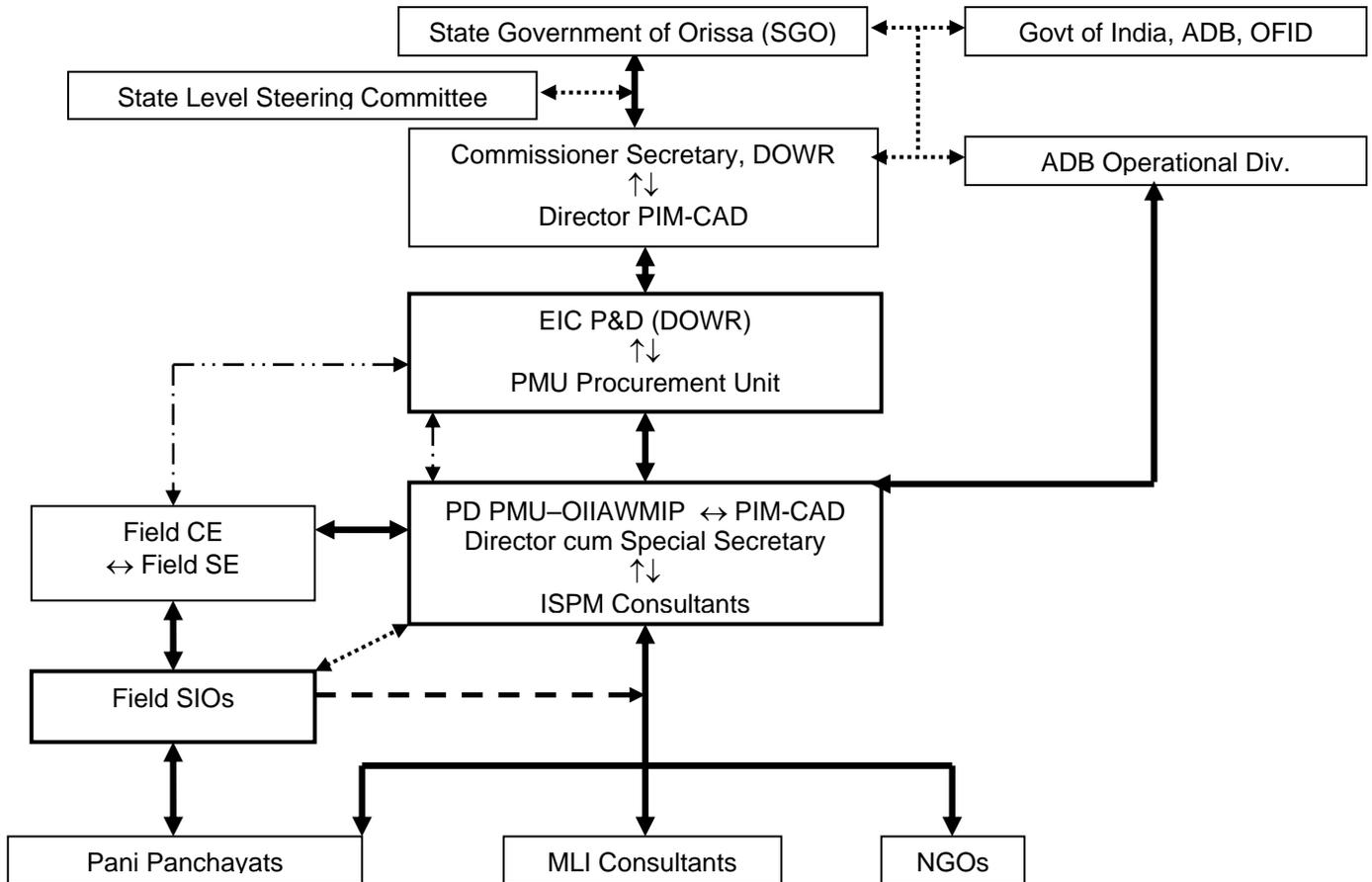
Figure A7.4: Arrangements for Disbursements /Fund Flow against Expenditure Claims



- Disbursements from ADB to CAAA-OSG and Finance Department.
- ⇒** Flow of fund release from Finance Department for civil works engaging contractors
- Same as above for other expenditure items

Figure does not show hierarchical positions. The line diagrams define only the flow of funds relating to OIIAWMIP.

Figure A7.5: Arrangements for Submission of Documents for Tendering, Contract Awards and Progress Reports



- Procurement related documents (bid documents, contracts) requiring ADB and SGO endorsement, progress reports, and other information and guidance as required
- Civil work tender evaluation reports for Project Level Tender Committee
- Performance monitoring and evaluation
- Consultation, communication, and guidance

Figure does not show hierarchical positions. The line diagrams define only the flow of information and documents relating to OIIAWMIP.

SUMMARY SUBPROJECT SELECTION CRITERIA AND APPROVAL PROCESS

1. **Selection Criteria.** Under the OIIAWMIP, the following criteria will apply in selecting subprojects intended for financing under the Investment Program.

- (i) The subprojects will be located within Brahmani, Baitarani, Burhabalanga, and Subernarekha river basins, and a part of the Mahanadi River Delta area.
- (ii) The subprojects will involve rehabilitation, extension, and modernization of the existing irrigation and associated infrastructure. Subprojects will either be major (having a command area of over 10,000 hectares [ha]), medium-sized (between 1,000 ha and 10,000 ha), or very minor community-based lift (between 10 ha and 50 ha) irrigation schemes.¹
- (iii) For each subproject, a participatory feasibility study and support due diligence will have been prepared, covering technical design, economic and financial viability, institutional arrangements, social assessments including social safeguards plans as applicable, environmental analysis, and an implementation plan.
- (iv) All necessary central and state government approvals will be in place.
- (v) For individual subproject feasibility assessments, the following criteria will apply:
 - (a) technical feasibility, with insignificant technical risks that would undermine efficacy, economic return, safety, or sustainability;
 - (b) reliable water availability and quality, with insignificant negative impact on the other users of the same source or the ecosystem downstream;
 - (c) financial and economic viability with an economic internal rate of return of over 12% with robustness under sensitivity and risk analysis;
 - (d) marginal farmers (less than 1 ha landholding) constituting more than 50%;
 - (e) social and environmental soundness with insignificant negative impacts;
 - (f) fulfillment of safeguards requirements (involuntary resettlement, indigenous peoples, and environment) of the Government and ADB, and efforts to minimize land acquisition and resettlement in the planning and design process; and
 - (g) concurrence of the concerned water user associations (WUAs) on the basic design, including farmer contribution (in cash or in kind) for minor facilities (5%), command area development works (10%), and operation and maintenance (O&M) of the minor facilities within the WUA boundary.
- (vi) For minor lift irrigation schemes, the following criteria will also apply:
 - (a) operational status being either operational by the WUA or nonoperational in less than 5 years due to the causes addressed through rehabilitation;
 - (b) technical and socioeconomic soundness and sustainability with flat land topography (less than 5% slope), vicinity to reliable power supply (within 3 kilometers), and little risk of riverbank erosion or sand casting due to floods;
 - (c) WUA members' agreement to assume full responsibility of O&M including payment for power supply and all major repair and future asset replacement, with power agreement with electric supply company and beneficiary contribution (in cash or in kind) equivalent to 20% of the investment costs, and additional amount as reserve funds to prepare for future asset replacement;

¹ The investment program will also accommodate as a pilot a small number of minor (less than 1,000 ha) creek irrigation schemes, which will also follow the same criteria.

- (d) sound O&M plan developed to fully irrigate the command area;
- (e) the subproject cost of less than Rs36,000/ha of net irrigated area; and
- (f) relatively equal land distribution, with less than 70% of net irrigated area operated by the largest 20% of operators.

2. **Procedures.** For the purpose of the first periodic financing request (PFR) under the investment program, an appraisal process has been undertaken for two major (Taladanda and Mahanadi Chitropala island irrigation) and three medium-sized (Gohira, Remal, and Sunei) schemes, along with the two sample subprojects for community-based minor lift irrigation.²

3. For all irrigation schemes to be proposed for inclusion in the subsequent PFRs, each subproject will be processed in accordance with the following procedures:

- (i) Feasibility studies will be conducted by the executing agency (EA) including its cost estimates. The EA will also prepare an initial poverty and social assessment and fill out checklists for involuntary resettlement, indigenous peoples, and environment; and submit the same to ADB for review and categorization.
- (ii) Based on the categorization and the feasibility studies, the EA will prepare the draft appraisal reports for all subprojects to be considered under the respective PFRs following the selection criteria, together with required attachments, i.e., draft resettlement plan (RP),³ draft indigenous peoples development plan, and draft environmental assessment.⁴
- (i) During the above process, the EA, with the assistance of the institutional strengthening and project management consultants, will also assess the progress and performance of the implementation of the preceding loans under the Investment Program, with necessary actions to enhance their effectiveness. ADB will closely engage with the EA while the work is being carried out.

² About 650 subprojects are envisaged to be implemented for minor lift irrigation schemes under the first loan. For these subprojects, the executing agency (EA) will conduct feasibility studies and prepare the appraisal reports following the selection criteria together with required attachments, i.e., draft resettlement plan, draft indigenous peoples development plan, and draft environmental assessment, if required, and submit the same to ADB for approval. Once it has been established that the appraisal reports have achieved a desired level of quality, these will be submitted to ADB for information, except for those appraisal reports that have safeguards documents requiring prior approval by ADB.

³ The EA will translate the RP into the local language and disclose it to the affected people and incorporate the results of the consultation. The final RP will also be disclosed on the ADB website and the website of the EA.

⁴ If any of the subprojects are categorized as environmental category A or B sensitive in any subsequent loan, compliance is required with the 120-day advance disclosure rule. The summary environmental impact assessment or summary initial environmental examination must be circulated to the ADB Board of Directors and made available to the general public 120 days before the PFR is submitted to ADB.

- (iii) If a proposed subproject is not likely to satisfy the eligibility criteria and/or the agreed procedures, ADB will advise the EA to either (a) modify the subproject proposal in a manner that will make it eligible, or (b) reject the subproject. In the latter case, the EA may propose a replacement subproject under the loan.
- (iv) Upon completing the feasibility assessments of the concerned subprojects and progress and performance review of the preceding loans under the Investment Program, the EA will submit the same with a PFR to ADB for approval. The EA will ensure that the necessary approvals of the Government of India or Orissa state government have been obtained prior to submission of the PFR.

SUBPROJECT IMPLEMENTATION PROCEDURE AND ARRANGEMENTS

Figure A9: Implementation Procedure

Feasibility Studies and Subproject Implementation Plan Preparation	
<p>Confirmation of Candidate Subproject Selection</p> <ul style="list-style-type: none"> (ii) Existing major, medium, or MLI scheme in the set geographical area requiring renovation (iii) Technical feasibility with insignificant risks (iv) Reliable water availability, insignificant negative impacts on downstream users and ecosystems (v) EIRR greater than 12%, robustness against risks (vi) Marginal and small farmers constituting more than 50% beneficiary households and land areas (vii) No major environmental issues (viii) No major social and land-related issues (ix) Beneficiaries support overall subproject concept, and agree on contribution for 5% of minor works, 10% of CAD, and 20% of MLI works 	<p>Feasibility Studies and Subproject Implementation Plan</p> <ul style="list-style-type: none"> (i) Field confirmation of the issues on the left (ii) Initial formulation of ad hoc WUA (iii) Data collection on physical, socioeconomic, and institutional setting (iv) Problem assessment on agriculture, infrastructure, and irrigation and water management (v) Inventory of existing and planned programs (vi) Participatory rapid rural appraisal at village (vii) Identification of priority investment requirements focusing on water and associated interventions (viii) Feasibility studies of identified interventions (ix) Formulation of SIP specifying input and output targets (x) Associated safeguard and other assessments (xi) Presentation of feasibility study and SIP and endorsement by WUA <p>Approval of Feasibility Studies and Inclusion in the MFF Subprojects (through PFR)</p>

↓ (See footnote 1 for main facilities requiring early implementation)

WUA Micro Plan (Major and Medium-Sized Schemes) ¹	WUA Beneficiary Mobilization
<p>WUA Micro Plan Preparation</p> <ul style="list-style-type: none"> (i) WUA institutional development plan prepared, with full land and household records (ii) Infrastructure development plan (including CAD layouts and conjunctive use promotion), and water management improvement plan (iii) Agriculture and livelihood enhancement plan, prepared for synergy with other ongoing programs (iv) Environmental and social safeguards plans (as required) (v) Endorsement of draft WUA micro plan by WUA <p>Approval by SIO with support of the consultants</p>	<p>During Micro Plan Preparation</p> <ul style="list-style-type: none"> (i) WUA working group established to work with SIP team for micro plan preparation (ii) Information campaign on the project and its requirements (iii) Endorsement of draft micro plan by WUA <p>After Micro Plan Approval</p> <ul style="list-style-type: none"> (i) Start implementing WUA institutional development plan with facilitation by NGOs (ii) Membership enrollment over 70% (iii) Election, and executive and subcommittee formation (iv) Participate in and endorse detailed design and beneficiary contribution targets (v) Achievement of set beneficiary contribution targets <p>Full achievements of the targets in (ii)–(v) confirmed by SIO</p>

↓

WUA Implementation Agreement Signing
<p>Implementation agreement to stipulate schedules, programs, and responsibilities of the concerned organizations to implement the micro plans—to be signed by heads of SIO and WUAs</p>

↓

¹ Implementation will be based on the canal units constituting individual WUAs. Facilities encompassing more than one WUA (e.g., branch canals) will be implemented on the basis of the progress of the institutional development of the concerned WUAs. For main and key distributaries requiring early works for timely availability of water across the subprojects, however, detailed design and procurement of civil work may be initiated upon completion of the feasibility study and SIP preparation and endorsement of the concerned WUA project-level committee.

Construction of Irrigation and Associated Infrastructure		
Preconstruction (i) Implementation of resettlement plan with support of NGOs (ii) Tender process of construction works (for main, distributary, and branch canals and structures) (iii) WUA engaged for minor infrastructure within their territories with necessary training (iv) WUA training on construction monitoring and O&M	→	Construction (i) Improved construction supervision including internal technical audit (ii) WUA monitors construction works of contractors (iii) WUA implements minor infrastructure (iv) Consultant quality control specialist signs off prior to payments (v) Full disclosure of contract information at sites



Agriculture and Livelihood Support	Infrastructure Completion and O&M
Agriculture Development Support (i) Agriculture plan refined with WUA subgroups (ii) Agriculture extension focus on groups with better group performance (iii) Demonstration beneficiaries to repay the cost of inputs to WUA as seed money to continue program (iv) Group leaders trained as WUA extension officers to disseminate improved technology within WMA (v) New cropping management with intensification, diversification, seed multiplication, water saving, and other new technologies (vi) Facilitation of forming farmer links for input delivery and output marketing (vii) NGOs and private providers engaged to enhance program effectiveness Livelihood Enhancement Programs (i) Programs for the poor (e.g., vegetable gardeners and fodder collectors) with a focus on women organized (ii) Promote self-help group formation and forming links with existing poverty reduction programs (iii) Delivery of services for practical knowledge of income generation, e.g., livestock breeding Program completion report prepared by SIO and submitted to PMU after WUA endorsement	WUA Managed (minor) Facilities (i) Preparation of O&M plan by WUA with trained project staff with the consultant O&M specialist (ii) Test run and joint confirmation of the quality of infrastructure constructed (iii) On-the-job training for O&M up to full year, in preparing and implementing (a) seasonal operation plans with efficient water management, (b) annual maintenance plans with joint canal walk-through, and (c) resource mobilization plans (iv) WUA establishes O&M reserve fund using up front cash contribution and maintains the fund with appropriate replenishment mechanism (v) Close monitoring of status of O&M Facility O&M transfer agreement signed between SIO and WUA Jointly Managed Facilities (i) Preparation of scheme O&M plan, and MIS for scheme O&M performance monitoring and planning (ii) Test run for joint confirmation of structure capacity (iii) Joint decision making on system O&M, including seasonal operation plans, maintenance plans with joint walk-throughs, and resource mobilization plans (iv) Policy measures to enhance resource mobilization Progressive O&M transfer at this level envisaged in the medium term



Regular Monitoring for Sustainable O&M
Project to maintain annual technical, social, and financial audit of WUA through field project staff and engagement of NGOs, with a particular focus on the performance of O&M at system, distributary, and WUA levels

CAD = command area development, EIRR = economic internal rate of return, MFF = multitrance financing facility, MIS = management information system, MLI = minor lift irrigation, NGO = nongovernment organization, O&M = operation and maintenance, PFR = periodic financing request, PMU = project management unit, SIP = subproject implementation plan, SIO = subproject implementation office, WUA = water user association.

Source: Asian Development Bank.

SPECIFIC SUBPROJECT IMPLEMENTATION PROCEDURES

- (i) WUA Micro Planning: For major and medium schemes,² the subproject SIO will work with the individual WUAs to jointly prepare WUA micro plans, which comprises WUA organizational development plan, infrastructure (including CAD and conjunctive use with groundwater) and O&M plan including seasonal water entitlements for the WUA, agriculture and allied sector development plan, and vulnerable groups livelihoods development plan, setting out specific output targets, programs and their delivery schedules.³ The micro plan will be endorsed by WUA general assembly.
- (ii) WUA Strengthening: In parallel to the micro planning process, the SIO and its support team mobilized through the NGO will undertake institutional building of the WUAs, including membership enrollment, holding of election, establishment of committees and sub-committees, adoption of by-laws and facility operational rules, substantial fulfillment of required water rate submission, book and account keeping with annual financial audit, and operationalization of the functions. After achieving the set institutional development targets (including membership enrollment, establishment and regular meetings of committees and subcommittees, and beneficiary contribution for the minor facility works including CAD) and WUA endorsement of the micro plan, an implementation agreement will be signed between the WUA and the SIO.
- (iii) Detailed Design: Detailed design will be undertaken by the Project design cell upon approval of the subproject (and in parallel to WUA strengthening process) for the main and up to upper or large distributary canals (that need to be implemented early to ensure timely delivery of project benefits), and by the SIOs with the WUAs for the rest of the structures. Design process will involve the concerned WUAs and their higher tier committees, whose endorsement will be sought prior to design finalization and reflected in the implementation agreement. Where applicable, land acquisition and resettlement plan will be finalized at this stage, and will be implemented with the engagement of an implementation NGO.
- (iv) Tendering and Implementation of Civil Works: Upon approval of the detailed design and full completion of the land acquisition and resettlement process where applicable, the tendering process of the civil works will commence. For main and distributary facilities requiring early work completion for timely delivery of subproject benefits across the subproject areas, the tender process will be initiated in parallel to WUA strengthening process, whereas minor and lower level facilities will be implemented upon signing of the implementation agreements with the concerned WUAs. WUAs will be engaged for minor civil works under their command area, whereas they will be engaged as construction quality monitor for works undertaken by contractors, with training.⁴
- (v) Agriculture, Allied Sector, and Livelihood Enhancement Support: The SIOs will arrange for the delivery of the concerned programs following the schedules stipulated in the WUA micro plans, in coordination with the local line department representatives, private providers including NGOs, to be facilitated by SIO subject matter officers through NGO support team members.⁵ The SIOs will seek regular organization of district coordination committee meetings to support this end, and pursue that WUAs establish (a) sustaining

² For minor lift schemes, the WUA plan is prepared at the time of feasibility studies.

³ As a matter of principle, SIO will pursue mobilizing existing State programs for the delivery of services.

⁴ WUAs and farmers are expected to provide beneficiary contribution to the minor canal and lift irrigation works. The contribution will be provided in proportion to the progress of the project-assisted physical works, including the placement of field channels beyond the command area development (CAD) channel outlets, which are the sole responsibility of farmers.

⁵ The activities will be initiated upon signing of the implementation agreement, although primarily provided upon operation of the improved canals.

linkages with existing organizations for input delivery, production systems support, and output marketing; and (b) in house capacities to disseminate information and technology while driving the process of agriculture development as a cohesive platform. The SIOs will also ensure that programs for livelihood enhancement are delivered through the WUAs, and targeted to the most vulnerable group in the concerned subproject area.

- (vi) Subproject O&M: During the process of subproject implementation, the SIO will put into operation the practice of annual and regular O&M planning and joint decision making with the concerned WUAs, including (a) technical requirements and planned actions for O&M, and (b) financial information on fund allocation and proposed expenditures for works and salaries, along with the water tariff submitted from the WUAs. The WUAs will also be provided with flow measurement opportunities against their water allocation in the canal operational plans. The WUAs will further be motivated to undertake the regular maintenance works for the higher tier structures managed by DOWR in collaboration with WUA higher tier committees.
- (vii) The SIO through DOWR field engineer (competent authority) buttressed by the NGO support team will ensure that at least one full year's on-the-job training is provided to the WUAs for those facilities for which they will be given O&M responsibility, in terms of (a) regular inspection through joint walkthroughs and flow measurement; (b) preparation of annual O&M plan; and (c) its implementation. To support this end, the SIO will pursue that (a) the WUA will utilize grant-in-aid for the purpose of identified works; (b) the SIO will provide additional fund to implement the works that cannot be met by the grant-in-aid amount through the allocated fund as available; and (c) the WUA will seek additional funding from its members and/or seek funding from the existing programs of the panchayat institutions.

GOOD GOVERNANCE MEASURES

- (i) DOWR will make joint decision making systems operational with their counterpart WUAs and their higher-tier committees regarding all planning and implementation matters as well as subproject O&M, through regular WUA-SIO meetings on progress review, annual and periodic work plans and schedules. The WUAs will also be assigned and trained to participate in monitoring of civil works contracted by the SIO.
- (ii) DOWR 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) DOWR will ensure that the grievance reporting and redressal mechanisms are in place to assist stakeholders in resolving their complains in a timely manner. To this end, the PMU and SIOs will organize awareness campaigns for WUAs and other stakeholders.
- (iv) DOWR, through its internal audit wing, will undertake annual financial audit for all SIOs and associated offices, which will include investigation of all financial records and transactions.
- (v) DOWR will strengthen its construction supervision, recording, and reporting system with the use of modern technologies, establish a quality control cell, and operationalize internal third party technical audit mechanism. Accordingly, all work contracts will include provisions for third party inspection for quality control. External monitoring, supervision, and technical audit consultants will also be mobilized under the ISPM consultant team.
- (vi) All contracts financed by ADB for the project will include provisions stipulating ADB's right to audit and examine the records and accounts of the contractor.

OIIAWMIP INDICATIVE IMPLEMENTATION SCHEDULE

Task / Activity	Project 1			Project 2		Project 3		Project 4	
	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Tranche 1 Subprojects (2 major and 3 medium schemes)									
Social mobilization of PPs and Micro-planning	[Bar]			[Bar]		[Bar]		[Bar]	
Civil works (Main structures, except MCII)	[Bar]			[Bar]		[Bar]		[Bar]	
Civil works (minor structures including design, except MCII)	[Bar]			[Bar]		[Bar]		[Bar]	
RP implementation (MCII)	[Bar]			[Bar]		[Bar]		[Bar]	
Civil Works (MCII)	[Bar]			[Bar]		[Bar]		[Bar]	
Command Area Development and Conjunctive Use	[Bar]			[Bar]		[Bar]		[Bar]	
Agriculture and allied sector support, and livelihood enhancement	[Bar]			[Bar]		[Bar]		[Bar]	
O&M support	[Bar]			[Bar]		[Bar]		[Bar]	
Minor Lift Schemes (650 subprojects)	[Bar]			[Bar]		[Bar]		[Bar]	
Tranche 2 Subprojects (4 major and 2 medium schemes)									
Feasibility Studies of Tranche 3 Subprojects	[Bar]			[Bar]		[Bar]		[Bar]	
Social mobilization of PPs and Micro-planning	[Bar]			[Bar]		[Bar]		[Bar]	
Civil works (Main structure)	[Bar]			[Bar]		[Bar]		[Bar]	
Civil works (minor structures, including design)	[Bar]			[Bar]		[Bar]		[Bar]	
Command Area Development and Conjunctive Use	[Bar]			[Bar]		[Bar]		[Bar]	
Agriculture and allied sector support, and livelihood enhancement	[Bar]			[Bar]		[Bar]		[Bar]	
O&M support	[Bar]			[Bar]		[Bar]		[Bar]	
Tranche 3 Subprojects (4 medium schemes and pilot creek schemes)									
Social mobilization of PPs and Micro-planning	[Bar]			[Bar]		[Bar]		[Bar]	
Civil works (Main structure)	[Bar]			[Bar]		[Bar]		[Bar]	
Civil works (minor structures, including design)	[Bar]			[Bar]		[Bar]		[Bar]	
Command Area Development and Conjunctive Use	[Bar]			[Bar]		[Bar]		[Bar]	
Agriculture and allied sector support, and livelihood enhancement	[Bar]			[Bar]		[Bar]		[Bar]	
O&M support	[Bar]			[Bar]		[Bar]		[Bar]	
Minor Lift Schemes (500 schemes for tranche 3; 250 schemes for tranche 4)	[Bar]			[Bar]		[Bar]		[Bar]	
Institutional Strengthening and Project Management									
Project management	[Bar]			[Bar]		[Bar]		[Bar]	
ISPM Consultants	[Bar]			[Bar]		[Bar]		[Bar]	
DOWR Strengthening	[Bar]			[Bar]		[Bar]		[Bar]	
Training	[Bar]			[Bar]		[Bar]		[Bar]	

DOWR = Department of Water Resources, ISPM = institutional strengthening and project management, MCII = Mahanadi Chitropala Island Irrigation, O&M = operation and maintenance.

Source: Asian Development Bank.

Table A10. Indicative List of Schemes

No.	Scheme Name	Basin	Net Irrigated Area (design) ha	Notes
Major Schemes			ha	
1	Taladanda	Mahanadi Delta	32,680	Tranche-1
2	Mahanadi Chitropala Island (MCI)	ibid	13,260	Tranche-1 (pre-construction), Extension for 6,000ha
3	Machhagaon	ibid	34,870	Tranche-2
4	Pattamundai	ibid	23,030	Tranche-2
5	HLC Range-I	Brahmani	14,700	Tranche-3
6	Jajpur Canal	Brahmani	13,100	Tranche-2
Subtotal			131,640	
Medium Schemes				
1	Gohira	Brahmani	8,100	Tranche-1
2	Remal	Baitarani	4,300	Tranche-1
3	Sunei	Budharabalanga	10,000	Tranche-1
4	Kansbahal	Brahmani	4,610	Tranche-2
5	Ramiala	Brahmani	9,600	Tranche-2
6	Kanjhari	Baitarani	9,300	Tranche-2
7	Bankabal	Subernerekha	6,840	Tranche-3
8	Khadkai	ibid	8,460	Tranche-3
9	Nesa	ibid	1,200	Tranche-3
Subtotal			62,410	
Minor Lift Schemes				
	1,400 schemes	4 basins	30,000	Tranche-1, 3 and 4
Scheme Refinement and WUA Strengthening				
1	Sapua Badjor	Brahmani	2,469	Tranche-3
2	Jambhira	Budharabalanga	3,550	Tranche-3
3	Haldia	Budharabalanga	2,270	Tranche-3
Subtotal			8,289	
Creek Irrigation				
1	Bada Mahara	Baitarani	420	Tranche-3
2	Pada Mahara	Baitarani	403	Tranche-3
3	Samudrapasa	Baitarani	486	Tranche-3
4	Natiajore	Baitarani	1,560	Tranche-3
Subtotal			2,869	

SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

Country/Project Title: India: Orissa Integrated Irrigated Agriculture and Water Management Investment Program			
Lending/Financing Modality:	Multitranche Financing Facility	Department/ Division:	South Asia Department / Agriculture, Natural Resources, and Social Services Division
I. POVERTY ANALYSIS AND STRATEGY			
A. Linkages to the National Poverty Reduction Strategy and Country Partnership Strategy			
<p>India's 11th Five-Year Plan (FYP) (2007–2012) prioritizes reducing rural–urban disparity and chronic rural poverty through inclusive and equitable growth with a strong focus on accelerating agriculture, irrigation, and rural development. According to the draft Vision 2020 and 11th Five-Year Plan of the Orissa state government, accelerating economic growth to 7% per annum and reducing poverty by 15% during the 5-year period is targeted. Key priorities in achieving this include improving agriculture productivity with participatory irrigation management (PIM) and formation of water user associations (WUAs) and expanding nonfarm business opportunities in rural areas, along with reforms in the enabling environment for public sector accountability and market orientation pursued within the framework of sound macroeconomic (including fiscal and financial) management. ADB's country strategy and program for India (2003–2006)¹ expanded ADB's operations in agriculture, irrigation, and rural infrastructure to address the country's chronic rural poverty problems and looming water crises. The new draft country partnership strategy (2008–2012) envisages enhanced ADB roles in rural infrastructure development for irrigation, water resources, and agriculture marketing, following the priority of the sector in the Government's 11th FYP and ADB's long-term strategic framework.² The proposed Orissa Integrated Irrigated Agriculture and Water Management Investment Program (the Investment Program) will support the Government's efforts to help reduce rural poverty focusing on irrigation infrastructure development, and will help expand their coverage, while establishing and strengthening farmer WUAs to progressively take on operation and maintenance (O&M) and to serve as a platform to promote local agricultural development through a collective and demand-driven approach. The project's scope includes renovation of selected major, medium-sized, and minor lift irrigation systems within four major river basins, namely the Subernarekha, Budhabalanga, Baitarani, and Brahmani basins, plus a part of the Mahanadi River Delta. The Investment Program objective and its design are in line with the priorities and strategic directions of the 11th FYP of the Government and the state government, ADB's draft country strategy and program, and long-term strategic framework.</p>			
B. Poverty Analysis		Targeting Classification: General Intervention	
1. Key Issues			
<p>In Orissa, poverty is predominantly a rural phenomenon as more than 85% of the poor live in rural areas and engage in agriculture and related nonfarm activities. As per the latest estimates of the Planning Commission, the percentage of the population below the poverty line was 46% in rural areas in 2005 as against the all-India average of 28%, and 44% in urban areas against the all-India average of 26%. It is much higher among indigenous peoples (IPs) and castes people.</p> <p>The major and medium-sized irrigation subproject areas proposed for the first tranche have a poverty incidence of 22%–69% in 2007. About 6.5% of the total households are below the “absolute poverty line” in terms of calorific intake and access to resources. Poverty incidence is higher in tail-end reaches of canals having less access to irrigation within the subprojects, and among IPs and castes people. In these schemes, the overwhelming majority (about 80%) of the cultivators are landless and marginal and small farmers (with less than 2 hectares [ha] landholding) who are mostly poor or near-poor. They also occupy the majority (about 70%) of the irrigation command area. Therefore, improving the irrigation system in terms of better coverage and equal and efficient distribution would substantially contribute to increased farm income of the poor and near-poor people. Improved irrigation will also contribute to job creation in agriculture as well as labor intensive agro-based industries by providing job opportunities for agricultural laborers and marginal farmers. With a more dynamic rural economy through irrigated agriculture, a multiplier effect of growth in the nonagricultural sector is also expected.</p> <p>Without irrigation, agricultural operations are seasonal and mostly of single-crop nature (during the monsoon, or <i>kharif</i>) which provides for subsistence agriculture and employment for only about 6 months a year. For the rest of the year, people are not fully engaged, which leads to serious underemployment and abject poverty. Small and marginal landholdings and uneconomical single-crop patterns do not provide for surplus yields for food processing or marketing of agricultural produce. Unless there is multiple and intensive cropping many people will remain partially employed.</p> <p>For the rural poor, access to and control of irrigation water are of fundamental importance as water is the foundation for agriculture and livelihood activities, including pisciculture, agroforestry, and livestock. Irrigated agriculture is a major source of food and income for rural households below and above the poverty line, including smallholders and sharecroppers (the majority of cultivators), who have little source of income other than agriculture. Sufficient and timely access to irrigation reduces vulnerability risk and increases livelihood security. Therefore, ensuring equitable and secured access to irrigation</p>			

¹ ADB. 2003. *Country Strategy and Program (2003–2006): India*. Manila.

² ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank 2008–2020*. Manila.

water and participation in water management has a major impact on the livelihood opportunities for poor rural people.

2. Design Features

The Investment Program consists of the rehabilitation of irrigation and drainage infrastructure, including regulators and retention structures, sluices, canal resectioning, outlets, and field channels. Through the expansion of the irrigated area, and by providing water in the dry (*rabi*) season and improving the agricultural farming systems, the project will improve crop yields due to double-cropping (in monsoon and dry seasons), diversify agricultural production, and support pisciculture in reservoirs and canals. The formation of WUAs will empower farmers to manage water resources and organizational affairs effectively, as equal partners to the service provider, the Department of Water Resources (DOWR), whose accountability and service orientation will be improved through institutional reforms and capacity strengthening. Agricultural improvement and livelihood enhancement, implemented through WUAs, are particularly targeted at small and marginal farmers who constitute a vulnerable group. The Investment Program also seeks to achieve poverty reduction through (i) rehabilitation and modernization of irrigation infrastructure to make water supply more reliable for cultivation and livestock rearing, (ii) empowerment of WUAs capable of managing and maintaining the irrigation system, and (iii) strengthening WUAs to promote agriculture intensification and diversification through a collective approach. A system of rotational irrigation water supply and conjunctive use of groundwater will be promoted under the project to ensure water delivery to the farmers in the tail end reaches of the irrigation canal systems who are suffering greater poverty due to water deprivation. The participatory project design seeks to ensure that the poor and vulnerable are actively engaged in WUA and self-help group formation as well as planning activities, thereby ensuring ownership by communities, including their poorest members. Minor construction work will also be awarded to WUAs.

II. SOCIAL ANALYSIS AND STRATEGY

A. Findings of Social Analysis

According to the 2001 census, the total population of the state is 36.8 million, of which almost 80% live in rural areas. The IPs number over 8.1 million (22% of the state's population) and castes people number 6.1 million (17% of the state's population). The IPs are the most disadvantaged social group in Orissa, characterized by relatively low levels of literacy and health, and high economic deprivation. Although IPs are spread all over the state, they are primarily concentrated in the southern, northern, and north-eastern districts. At the state level, literacy among the tribes is as low as 37% and the incidence of poverty among the rural IPs is around 64%. The infant mortality rate is 10.3% higher for Orissa's indigenous population as compared to the state's population as a whole, the under-5 mortality rate is 19.6% higher, and the child mortality rate is 52.7% higher. The work participation rate among the tribes is 57%. Out of this, 33% are cultivators, and agricultural laborers constitute 47%. The majority of workers in IP communities are thus engaged as agricultural laborers.

According to the household survey in the seven subproject areas studied for the first tranche, 17% of households are classified as IPs, 18% as castes people, 34% as other backward classes, and 30% as general castes. Three medium-sized schemes have a high percentage of IP population at 23%, 26%, and 63%, the highest being the Sunei irrigation scheme. Overall, around 7% of households are headed by women. The majority of people in the subproject area are landless people (14%) and marginal farmers (up to 1 ha of landholding, 55%–60%), followed by small farmers (up to 2 ha, 25%–28%), medium farmers (up to 5 ha, 6%–8%) and large landholders (2%–3%). Around 25% of the cultivators are sharecroppers (and about half of them do not own land) dependent on agriculture. They have to supplement their income by seeking employment as daily wage laborers. Rice cultivation in the wet season is the main economic activity for which a labor contracting system with varying wage rates has evolved. Agricultural wage rates are lower than the wage rates for mining, construction, or other activities. Big farmers usually engage one laborer per 2 ha of cultivable land. Small farmers generally engage labor for harvest only. The average wage for male agriculture labor during the peak season is Rs55 a day. Women are paid much less than men.

According to the social survey, although classified as IPs, the social, cultural, economic, and political characteristics of the indigenous people do not differ significantly from other social groups and the mainstream Hindu population. As the project envisages rehabilitation and modernization of the existing irrigation infrastructure, no new infrastructure such as dams or reservoirs are foreseen. Potential impacts were screened with no potential adverse impacts on IPs found. As such, and with no land acquisition or significant environmental impacts envisaged, the subproject population overall is expected to obtain benefits from the improved irrigation infrastructure and its management systems.

The Investment Program will place strategic emphasis on beneficiary participation with due attention to the diversity of their interests and possible vulnerability (e.g., farmers in the tail-end reaches of canals, IPs and castes people) under the framework of the WUAs. The strategy has four levels: (i) policy measures to equalize opportunities and access, including the refinement of the WUA Act to support equal representation of farmers from head, middle, and tail reaches of irrigation canal systems and increased participation of vulnerable groups including women; (ii) WUA capacity enhancement to ensure sound governance including representation, participatory decision making, and equal water distribution; (iii) specific actions and programs targeting vulnerable groups including women with establishing links to the existing poverty reduction programs (such as self-help groups); and (iv) compliance with social safeguards measures.

B. Consultation and Participation

1. Provide a summary of the consultation and participation process during the project preparation.

A participatory process was used during the project preparatory stage, and consultation, collaborative decision making, and empowerment exercises were carried out with women, the landless, IPs, and other vulnerable groups in the subproject area using participatory rural appraisal techniques. An inventory of local needs was prepared, encompassing problems related to (i) water resources in relation to agriculture, fisheries and other uses; (ii) possible solutions to resolve the constraints identified; and (iii) their implications for poverty reduction. The role of service providers, people's willingness to contribute to operations and maintenance (O&M), and the scope of enhancing impacts with micro credit and extension services, were also discussed. Nongovernment organizations (NGOs) were engaged to facilitate this process. The project preparatory technical assistance identified the future course of action and mechanisms to institutionalize community participation.

The community expectations of the benefits and impacts of the Investment Program are (i) increased agriculture and fish production, (ii) more opportunities for disadvantaged groups to become involved in farming and nonfarming activities, and (iii) increased income opportunities. All women interviewed expected to benefit mainly by employment and income generation through improved post-harvest work, livestock and fish production, farm and homestead production, cottage industries, improved water supply and sanitation services, and access to credit.

2. What level of consultation and participation (C&P) is envisaged during the project implementation and monitoring?

Information sharing Consultation Collaborative decision making Empowerment

3. Was a C&P plan prepared? Yes No

In order to promote sustainability of the intervention as well as prevent implementation delays and manage conflicts, WUAs will be empowered to progressively take control of the irrigation systems. Irrigation field staff and contracted NGOs will assist in strengthening WUAs. WUAs will prepare cropping plans, enter into irrigation management agreements with the DOWR, and take over O&M activities. The C&P plan focuses on empowering WUAs in the governance of irrigation systems and the preparation of WUA plans. NGOs will provide leadership and confidence-building, training WUAs to become capable of managing and operating their schemes. Furthermore, village facilitators will be selected and trained to provide a sustainable mechanism for continued community-based management and development. The Investment Program will establish procedures for close coordination among district administration and NGOs for effective service delivery. A budget of \$5 million is provided for empowerment processes of WUAs, facilitated by NGOs.

IP communities have a long tradition of participating in community-based activities but their participation in WUAs is not effective. During the field survey, it was observed that participation of IPs in WUAs is much less than the general population in executive committees and as office bearers of WUAs. In addition, they exhibit the following limiting characteristics: little land in the command area, traditional agricultural practices with low returns, limited access to bank loans and farm inputs, and less access to water. Consequently, quite often they are unable to secure meaningful representation in the process of decision making in community affairs and in the development processes. Therefore, attempts will be made to ensure that socially weaker sections of society are equally represented in the WUAs and receive the benefits. Training and income-generating activities to minimize the existing economic imbalances of the IPs have been planned. For this purpose an IP specific action was developed, which defines the strategy and activities for the empowerment of vulnerable people.

C. Gender and Development

1. Key Issues

Due to unequal access of women to productive resources and the gender discrimination within traditional households, women bear a disproportionately high burden of poverty. Lack of autonomy within the household and social restrictions on mobility prevent women from accessing education, skills training, and health facilities as well as labor markets. Besides household chores, rural women are major contributors to the rural economy in crop and livestock production, and cottage industries. In addition, women spend a large part of their time gathering water and firewood for household use. A strategy for gender mainstreaming was formulated taking these features into consideration.

2. **Key Actions.** Measures included in the design to promote gender equality and women's empowerment—access to and use of relevant services, resources, assets, or opportunities and participation in decision-making process:

Gender plan Other actions/measures No action/measure

The gender and development strategy includes various steps to enhance women's access to information, participation in irrigation management institutions, and ability to improve their livelihoods. The project will give specific attention to employment of female staff at all levels and train field staff in gender-sensitive and participatory planning and implementation. Furthermore, the gender action plan will (i) ensure labor employment opportunities generated by the project and O&M works, (ii) train women to be involved in WUAs and all aspects of O&M; (iii) support women's work in farm and homestead production; (iv) strengthen the extension system to be gender-equitable; (v) identify and respond to women's agricultural and household needs for technology in close collaboration with implementing agencies and NGOs; (vi) support women in their home-based post-harvest production and marketing activities; (vii) improve processing of agricultural produce and diversify to high-value vegetable production; (viii) support credit and savings groups; (ix) provide women with training in crop and horticulture production, poultry and small livestock rearing, fisheries, and processing.

III. SOCIAL SAFEGUARD ISSUES AND OTHER SOCIAL RISKS			
Issue	Significant/ Limited/ No Impact	Strategy to Address Issue	Plan or Other Measures Included in Design
<u>Involuntary Resettlement</u>	Significant in one tranche 2 scheme, and not significant for others	Significant in one (Mahanadi Chitropala Island) irrigation scheme to be implemented in tranche 2, for which a resettlement plan is being prepared. All other subprojects are rehabilitation of existing schemes and will have limited or no resettlement impacts. A resettlement framework has been prepared to guide planning and implementation of resettlement, including compensation and livelihood restoration.	<input checked="" type="checkbox"/> Full Plan in preparation <input type="checkbox"/> Short Plan <input checked="" type="checkbox"/> Resettlement Framework <input type="checkbox"/> No Action
<u>Indigenous Peoples</u>	Limited Impact	Out of seven subprojects under tranche 1, three subprojects have relatively high IP populations, although no negative impacts are expected. An IP specific action plan was prepared for those schemes to aim at equal participation and empowerment of IPs in project activities. An IP framework was also prepared to guide all subproject implementation.	<input type="checkbox"/> Plan <input checked="" type="checkbox"/> Other Action <input checked="" type="checkbox"/> Indigenous Peoples Framework <input type="checkbox"/> No Action
Labor <input type="checkbox"/> Employment opportunities <input type="checkbox"/> Labor retrenchment <input checked="" type="checkbox"/> Core labor standards	Limited impact	Labor-intensive irrigation rehabilitation and O&M will create local employment activities. Core labor standards will be included in contractors' contract clause. Contracted labor arrangements will pursue equal pay for men and women and observe official wage standards.	<input type="checkbox"/> Plan <input checked="" type="checkbox"/> Other Action <input type="checkbox"/> No Action
Affordability	Limited impact	The Investment Program envisages beneficiary contribution of 5% of the investment costs for minor canal systems, 10% for command area development, and 20% for minor lift irrigation, along with the cost of O&M. The affordability assessment suggests that the required contribution is well within the increased income brought about by the project interventions.	<input type="checkbox"/> Action <input type="checkbox"/> No Action
Other Risks and/or Vulnerabilities <input type="checkbox"/> HIV/AIDS <input type="checkbox"/> Human trafficking <input type="checkbox"/> Others (conflict, political instability, etc), please specify	Limited or no impact	<p>The Investment Program does not envisage adverse impacts. It will reduce risks vis-à-vis unreliable water supply, overdependence on monsoon rain, frequent crop failure, and inefficient O&M, thus changing people's attitudes towards participation with more opportunity.</p> <p>Governance concerns will also be addressed by participatory approaches. Open meetings, open books, audits, and legal empowerment of WUAs will also promote accountability. The participatory principle will develop project ownership among stakeholders and this, in turn, will enhance sustainability. The cost-sharing mechanism will relieve the Government from financial support for O&M, and allows government funds to be used for sustaining and further expanding the reforms.</p>	<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input type="checkbox"/> No Action
IV. MONITORING AND EVALUATION			
Are social indicators included in the design and monitoring framework to facilitate monitoring of social development activities and/or social impacts during project implementation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

PROCUREMENT PLAN (PROJECT 1)

Project Information	Rehabilitation, extension, and modernization of existing 2 major, 3 medium, and about 200 minor lift irrigation schemes with establishment of sustainable operation and maintenance systems with farmer water user associations
Country	India
Borrower	India
Project	Orissa Integrated Irrigated Agriculture and Water Management Investment Program (OIIAWMIP)
Loan No.:	2444-IND (ADB); TBD. (OFID)
Date of Effectiveness	TBD
Amount :	\$157.5 million by ADB and \$30.0 million by OFID (MFF)
Of which Committed, US\$	\$16.5 million by ADB and \$30.0 million by OFID (Project 1)
Executing Agency	Department of Water Resources, Government of Orissa
Approval Date of Original Procurement Plan	30 April 2008
Approval of Most Recent Procurement Plan	7 August 2008
Publication for Local Advertisement ¹	24 January 2008 (for consulting and NGO services) 15 May 2008 (for works contracts)
Period Covered by this Plan	48 months

Procurement Methods: Works and Goods	To be used above/below (\$)
NCB works ²	All works contracts less than \$10,000,000 Other than community works contracts
NCB goods	All goods greater than \$100,000 and less than \$1,000,000
Shopping Goods	Less than \$100,000
Exceptional Methods	Simple civil works contracts costing less than \$10,000 may be directly awarded to WUAs as a community works contract following relevant provisions of ADB guidelines regarding community participation.

Consulting Services	To be used above below (\$)
Quality Cost Based Selection (QCBS)	Greater than \$200,000 ³
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
Direct Engagement	Water and Land Management Institute (for Action Research and training less than \$100,000)

¹ General procurement notice, invitations to prequalify and to bid, calls for expressions of interest.

² For NCB procurement of works and goods, ADB's relevant standard bidding documents will be used.

³ Full technical proposal required for services greater than \$1,000,000.

Procurement Packages under the First Periodic Financing Request

1. Civil Works (Major and Medium Schemes: Updated in Nov 2009)

Sl. No.	Package No.	Description	Estimated cost in Lakh Rs.	Bid Value in Lakh Rs.	Mode of Procurement	Date of			Remarks
						Invitation of bid	Opening of bid	Award of contract	
1	2	3	4	5	6	7	8	9	10
(I)	Taladanda Irr. Sub-project								
1	CW-NCB-T1 (A)	Rehabilitation of main canal including lining (11.75 km. to 24.46km) and renovation & construction of associated structures.	725.0	718.0	NCB	16.10.2009	25.11.2009	31.01.2010	Tender for package - 1 was invited for the 2nd time on 16.02.2009 and due to non-responsive bidding split up into two packages.
2	CW-NCB-T1 (B)	Rehabilitation of main canal including lining (24.46 km. to 41.953km) and renovation & construction of associated structures.	951.0	942.0	NCB	16.10.2009	25.11.2009	31.01.2010	Retendered on 16.10.2009.
3	CW-NCB-T2	Rehabilitation of main canal including lining (30.38 km. to 78.77 km), selective lining, renovation & construction of associated structures.	1,719.3	1,703.0	NCB	Completed (16.02.09)	Completed (25.03.09)	15.12.2009	Financial bid opened on 03.11.2009 and evaluation is under process.
4	CW-NCB-T3	Rehabilitation of branch canal, distributary of Taladanda canal system from 11.75 km. to 78.77 km. including structures, selective lining and repair to canal embankment roads.	1,655.8	1,640.3	NCB	Completed (16.02.09)	Completed (25.03.09)	15.12.2009	Financial bid opened on 03.11.2009 and evaluation is under process.
5	CW-NCB-T4	Rehabilitation of minor canals of Taladanda canal system from 11.75 km. to 78.77 km. including structures, selective lining and repair to canal embankment roads.	1,205.0	-	NCB	30.12.2009	30.01.2010	15.03.2010	
6	Various (Construction of sub-minors of Taladanda canal system)	Construction of sub-minor canals and associated structures of Taladanda system.	625.0	-	K-2 Agreement (Directly through PPs)	Not applicable	Not applicable	Shall be awarded (PPwise) starting from 01.04.2010.	Approval of LS and DS of sub-minors 28.02.2010 & estimates will be approved by 15.03.2010.

Sl. No.	Package No.	Description	Estimated cost in Lakh Rs.	Bid Value in Lakh Rs.	Mode of Procurement	Date of			Remarks
						Invitation of bid	Opening of bid	Award of contract	
1	2	3	4	5	6	7	8	9	10
(II)	Sunei Irr. Sub-project								
1	CW-NCB-S-1	Repair of Dam, spillway and gate hoists, rehabilitation of Bisoi main canal, Kaptipada and Berhampur distributary canals including sections of lining and structures (excluding minor).	1,095.5	1,035.3	NCB	31.07.2008	3.2.2009	29.05.2009	Agreement drawn for Rs.1050.8 Lakh. Work to be started by 05 November 2009.
2	CW-NCB-S-2	Rehabilitation of minor canals of Sunei Irr. Project including improvement / modernisation of structures and selective lining.	350.0	-	NCB	Nov. 2009	Dec. 2009	Mar-10	
3	Various (Construction of sub-minors of Sunei canal system)	Construction of sub-minor canals and associated structures of Sunei irrigation system.	1,103.1	-	NCB				
(III)	Gohira Irrigation Sub-project								
1	CW-NCB-G1 (Reach - 1)	Rehabilitation, Extension & Modernisation of Gohira Irrigation Sub-Project Package - 1 (Reach-1) from RD 00 to 2475 M. of Gohira Left Main Canal and Tentelabahal Disty.	256.9	227.8	NCB	22.09.2009	03.11.2009	15.01.2010	Technical bids are under evaluation.
2	CW-NCB-G1 (Reach - 2)	Rehabilitation, Extension & Modernisation of Gohira Irrigation Sub-Project Package - 1 (Reach-2) from RD 2475 to 22350 M. of Gohira Left Main Canal.	527.8	483.0	NCB	22.09.2009	03.11.2009	15.01.2010	Technical bids are under evaluation.
3	CW-NCB-G2 (Reach - 1)	Rehabilitation, Extension & Modernisation of Gohira Irrigation Sub-Project Package - 2 (Reach-1) from RD 00 to 14000 M. of Gohira Right Main Canal.	324.1	295.0	NCB	22.09.2009	03.11.2009	15.01.2010	Technical bids are under evaluation.

Sl. No.	Package No.	Description	Estimated cost in Lakh Rs.	Bid Value in Lakh Rs.	Mode of Procurement	Date of			Remarks
						Invitation of bid	Opening of bid	Award of contract	
1	2	3	4	5	6	7	8	9	10
4	CW-NCB-G2 (Reach - 2A)	Rehabilitation, Extension & Modernisation of Gohira Irrigation Sub-Project Package - 2 (Reach-2A) from RD 14000 to 25840 M. of Gohira Right Main Canal and Bijaberini Distributary.	229.5	208.5	NCB	24.11.2009	23.12.2009	Feb-10	Tender for package-2 (Reach-2) was invited on 22.09.2009 and due to non-responsive bidding, split up into two sub-packages. To be reinvited on 24.11.2009.
5	CW-NCB-G2 (Reach - 2B)	Rehabilitation, Extension & Modernisation of Gohira Irrigation Sub-Project Package - 2 (Reach-2B) of Reamal & Rengalbeda Distributaries.	331.2	305.0	NCB	24.11.2009	23.12.2009	Feb-10	
6	CW-NCB-G3	Rehabilitation of minor canals of Gohira Irr. Project including improvement / modernisation of structures and selective lining.	263.5	-	NCB	Jan-10	Feb-10	Mar-10	
7	Various (Construction of sub-minors of Gohira canal system)	Construction of sub-minor canals and associated structures of Gohira irrigation system.	233.9	-					
(IV)	Remal Irr. Sub-project								
1	CW-NCB-R1	Repair main Dam, spillway and other associated structures. Rehabilitation of left main canal, right main canal, selective lining and provision of system control (excluding minor).	719.8	685.0	NCB	07.11.2009	03.12.2009	Feb-10	Reinvited for the 4th time.
2	CW-NCB-R2	Rehabilitation of minor canals of Remal Irr. Project including improvement / modernisation of structures and selective lining.	239.0	-	NCB	15.06.10	15.07.10	10.10.2010	
3	Various (Construction of sub-minors of Remal canal system)	Construction of sub-minor canals and associated structures of Remal irrigation system.	260.2	-				Mar-10	
	Total		12,815.5						

2. Civil Works (Others)

Contract Package No.	Contract Description	Value (\$million)	Expected date of Advertisement	Mode of Procurement	Prior Review Y/N
Minor Lift Irrigation Schemes					
MLI—various	Installation of pump sets and pipe systems, and other minor works	2.79	April 2010 (After WUA formation and planning)	NCB or Direct engagement of WUAs	Y-initial period
Others					
DOWR—various	Office refurbishment and extension of DOWR	0.57	June 2010	NCB	Y-initial period
Total		32.28			

3. Equipment and Supplies

Contract Package No.	Contract Description	Value (\$million)	Expected date of Advertisement	Mode of Procurement	Prior Review Y/N
MLI-1 to MLI-14	Central procurement of lift irrigation equipment including pump sets and distribution pipes	4.18	Quarterly, starting Mar 2010	NCB	Y
DOWR-1	Purchase of laboratory equipment for quality control cell	0.24	July 2010	NCB	Y
DOWR—various	Purchase of equipment and furniture of existing establishments	0.50	Jan 2009–Dec 2010	Shopping, direct purchase	Y-initial period
Total		4.92			

4. Consulting Services

Contract Package No.	Contract Description	Value (\$million)	Expected date of Advertisement	Mode of Procurement	Prior Review Y/N
CS-1	Institutional strengthening and project management support	8.69	24 Jan 2008	QCBS	Y
CS-2	Minor lift irrigation implementation support services	0.83	24 Jan 2008	QCBS	Y
NGO-WUA1	Social mobilization support for Taladanda subprojects	0.88	24 Jan 2008	QCBS	Y
NGO-WUA2	Social mobilization support for Sunei and Remal subprojects	0.36	24 Jan 2008	QCBS	Y
NGO-WUA3	Social mobilization support for Gohira subproject	0.23	24 Jan 2008	QCBS	Y
NGO-WUA4	Social mobilization support for MCII subproject	0.19	1 Dec 2009	QCBS	Y
NGO-RP	Resettlement plan implementation support for MCII scheme	0.10	1 Dec 2009	QCBS	Y
WALMI	Training and action research programs	0.10	not applicable	Direct Contract (DS)	Y
TRA—various	Training by resource persons	0.13	Jan 2009–Dec 2010	Individuals DS	Y-initial period
Total		11.51			

DISBURSEMENT ARRANGEMENTS

Expenditure Component Categories, Physical Contingencies, Foreign Exchange Component, and Tax Rates

Expenditure Categories	Component Categories	ADB-OFID Financing Share (1 st Tr)	Physical Contingency	Foreign Exchange	Gross Tax
1. Civil Works					
A. Major & Med Schemes (main and distribution)	○ Irrigation infrastructure – main infrastructure (A.b)	ADB 21% OFID 63%	10%	0%	5.0%
B. Major & Med Schemes (minor canals)	○ Irrigation infrastructure – minor canal systems (A.b)	OFID 90%	10%	0%	5.0%
C. Command Area Development Works	○ CAD (civil works) (A.b)	ADB 100% (*1)	0%	0%	0.0%
D. Minor Lift Schemes	○ Minor lift civil works (A.b)	OFID 88% (*2)	0%	0%	2.5%
E. O&M Support	○ O&M support (A.d)	ADB 40%	0%	0%	5.0%
F. Other Civil Works	○ DOWR strengthening – buildings, office refurbishment, etc. (B)	ADB 90%	0%	0%	5.0%
2. Vehicles and Equipment					
A. Minor Lift Equipment	○ Irrigation infrastructure – minor lift equipment (A.b)	OFID 70% (*2)	0%	0%	12.5%
B. Vehicles	○ DOWR strengthening (B)	ADB 90%	0%	0%	4.0%
C. Equipment and Materials	○ Conjunctive use of groundwater equipment purchase (A.b) ○ DOWR strengthening – equipment purchase (B)	ADB 89%	0%	0%	12.5%
3. Specialist Services					
A. NGO Social Mobilization	○ WUA strengthening (A.a)	ADB 100%	10%	0%	12.5%
B. Consultants	○ ISPM consultants (including FS for 3 rd tranche schemes) (B)	ADB 100%(*3)	12% (ISPM) 10% (MLI)	Foreign: 100% Local: 0%	12.5%
C. NGO Resettlement Support	○ Irrigation infrastructure – resettlement NGO (A.b)	ADB 100%	5%	0%	12.5%
D. Studies	○ DOWR strengthening (B)	ADB 90%	0%	0%	12.5%
4. Surveys and Investigation	○ Irrigation infrastructure – canal surveys (A.b) ○ Irrigation infrastructure – CADA surveys (A.b)	ADB 75%	10%	0%	12.5%
5. Training	○ Agriculture and livelihood development (A.c) ○ Training (B)	ADB 100%	0%	Foreign: 100% Local: 0%	2.0%
6. Incremental Operational Cost	○ DOWR strengthening (B) ○ Project management (B)	ADB 100% (*4)	10%	0%	4.0%

*1 ADB loan will cover schemes that are not eligible for the Government of India's CAD programs, and will cover 100% of the expenditure excluding farmer contributions that will be arranged through labor contribution.

*2 Total expenditure include farmer contribution of 20% for MLI and state contribution of 10%. OFID will cover 88% of expenditures excluding farmer contribution arranged through labor or in-kind contribution.

*3 Excluding tax to be levied to the foreign consultants, which will be borne by the EA.

*4 100% of eligible expenditures, including hired vehicle for DOWR strengthening, hired staff of PMU and SIOs, and incremental office operating costs including CADA and staff per diem for field works. Incremental staff positions for which OSG's regular staffs are assigned will not be covered by external financing.

Sample Project Withdrawal Application and Other Forms

(Please see financial management manual)

PRO-FORMA OF THE EXECUTING AGENCY'S 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); a separate attachment showing the list of contracts under each loan category
- cumulative disbursements from the ADB loan, cofinancing, and counterpart funds (expenditure to date), and comparison with time-bound projections (targets); and
- reestimated 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 Annex 1); 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).

Annex 1**Framework and Guidelines in Calculating Project Progress****A. Introduction**

1. To ensure that all implementation activities are reflected in measuring implementation progress against the project implementation schedule, the term "physical completion" in the PPR has been changed to "project progress."
2. Physical and precommencement activities are considered in calculating project implementation progress. These activities, which may include recruitment of consultants, capacity building, detailed design, preparation of bid and prequalification documents, etc., could constitute a significant proportion of overall implementation and therefore should be counted.
3. Each activity in the implementation schedule will be weighted according to its overall contribution (using time as a reference) to progress of project implementation. These weights will then be used to calculate the percentage of project progress along the entire time span of the project. This is to provide a holistic view of the pace of implementation.

B. Framework for Compiling Activity List and Assigning Weights

4. As implementation activities and their corresponding weights will vary according to the type of project, sector, and country, sector divisions or RMs will be responsible for determining and including them in the project administration memorandum. The actual project implementation progress of these activities should be reported regularly through the EA's quarterly project progress report. To ensure ADB-wide consistency, the following framework has been established; its application will be monitored through the PPR.

1. Compilation of Activity List

5. Sector divisions or RMs concerned should identify major implementation activities and include them in the implementation schedule, which is attached as an appendix in the report and recommendation of the President (RRP). The implementation schedule should follow the critical path of the project's major activities in project implementation taking account of various country, sector, and project constraints.

2. Assignment of Weights

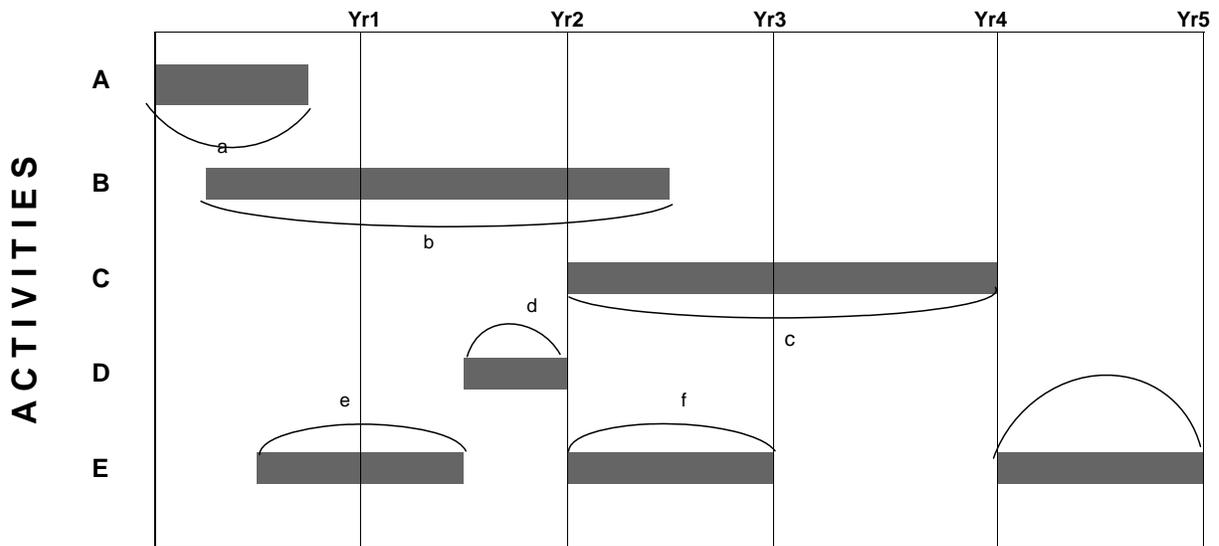
6. Corresponding weights for each activity should be assigned to ensure that "project progress" measures the percentage of achievement (nonfinancial except when the project has credit components) for all events during the entire duration of the implementation schedule. To avoid disproportionate assignment of weights, to the extent possible these should be evenly distributed along the implementation schedule. When activities are concurrent, avoid "double counting."

3. Computation of Project Progress

7. Once all activities are identified and corresponding weights assigned, project progress should be calculated using the following steps:
 - (i) Determine the actual percentage progress (nonfinancial) of each activity.
 - (ii) Multiply these percentages by the assigned weight of each activity to arrive at the weighted progress.
 - (iii) Add up the resulting weighted progress of all activities to determine the project progress.

The following provides an illustration of this calculation using a generic sample implementation including a specific example in the education sector.

Implementation Schedule with Activities and Weights



1. Sum of all weights should equal 100 percent ($a+b+c+d+e+f+g = 100\%$)
2. When calculating the percentage of "project progress," all completed activities should be counted as accomplished, regardless of when they were scheduled to be completed. For example, when calculating the percentage of "project progress" after year 3, if activity D is completed in year 3 rather than in year 2, it should still be included in the computation.
3. Total weight of each activity is as follows: Activity A— a ; Activity B— b ; Activity C— c ; Activity D— d ; and Activity E— $e + f + g$
4. Project progress of a project is the summation of the actual percentage of progress for each activity multiplied by the total weight of each activity.

Sample Implementation Schedule

Activities	Year 1	Year 2	Year 3	Year 4	(a) Assigned Weight	(b) Actual Progress	(a) x (b) Weighted Progress
Establish PIU	■				5%	100%	6%
Establish Accreditation Board, etc.		■			5%	0%	0%
Appoint Staff and Budget	■				4%	75%	3%
Adopt Architecture Plans		■			2%	100%	2%
Shortlist Consulting Firms	■				6%	100%	6%
Prepare Fellowship Program		■			6%	76%	4%
Prepare Civil Works Tendering		■			30%	0%	0%
Civil Works: Classrooms, Dorms, etc.		■	■	■	6%	0%	0%
Procurement of Furniture and Equipment				■	16%	10%	2%
Field Work of Consultants		■	■		7%	0%	0%
Provide Fellowships				■	6%	0%	0%
Conduct Study Tours			■		6%	0%	0%
Provide Curriculum Standards				■	6%	0%	0%
				Total Weight	100%		
				Imp. Progress			24%

(a) Assigned weight for each activity

(b) Actual progress of each activity

(a) x (b) weighted progress for each activity

Project progress = sum of all weighted progress for each activity

LOAN COVENANTS

Reference	Covenant	Compliance Date	Status
Submission of Audit Reports, Financial Statements, and Quarterly Progress Reports			
Project Agreement (PA) Section 2.09	The State through DOWR shall (i) maintain separate accounts for the Project; (ii) have such accounts and related financial statements (balance sheet, statement of income and expenses, and related statements) audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB; and (iii) furnish to ADB, promptly after their preparation but in any event not later than 9 (nine) months after the close of the fiscal year to which they relate, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Loan proceeds and compliance with the covenants of the Loan Agreement as well as on the use of the procedures for imprest account/statement of expenditures), all in the English language. The State through DOWR, shall furnish to ADB such further information concerning such accounts and financial statements and the audit thereof as ADB shall from time to time reasonably request.	Not later than 6 months after the end of fiscal year	
PA, Section 2.08(b)	Without limiting the generality of the foregoing, the State through DOWR, shall furnish to ADB quarterly reports on the execution of the Project and on the operation and management of the Project facilities.	Within one month at the end of each quarter.	.
PROJECT EXECUTION AND IMPLEMENTATION ARRANGEMENT			
Project Executing Agency			
LA, Schedule 5, Para. 1	The Project Executing Agency shall be the State acting through DOWR.	Throughout the project	
Project Steering Committee			
LA, Schedule 5, Para. 2	A State-level Project Steering Committee (PSC) shall provide policy guidance, inter-ministerial coordination, and shall take decisions on the Project. The PSC shall be chaired by the Agriculture Production Commissioner, or an officer not below the level of Secretary to the State, and the members shall include secretaries, directors, and/or representatives of all relevant departments and agencies of the State. Under the PSC, a project coordination working group (PCWG) chaired by Secretary of DOWR shall provide regular coordination with the nodal officers assigned by the concerned departments and agencies of the State	Throughout the Project	.

Reference	Covenant	Compliance Date	Status
Project Management Unit (PMU)			
LA, Schedule 5, para. 3	<p>The Project Management Unit (PMU), which has been established in DOWR under the Command Area Development/ Participatory Irrigation Management (CAD/PIM) Directorate and with the assignment of a full-time Project Director, shall be responsible for the identification, formulation, implementation, and O&M of all Subprojects including conformance with the State, national and ADB social and environmental safeguards policies. The PMU shall: (i) coordinate with other agencies concerned, (ii) prepare an overall implementation plan and annual project budget; (iii) guide the feasibility studies and endorse subproject appraisal reports including the safeguards documents, (iv) monitor and guide the activities of the Subproject Implementation Offices (SIOs) on subproject planning, implementation and O&M, (v) manage and guide safeguards action plans and implementation; (vi) establish and maintain a management information system (MIS), (vii) monitor overall project progress and evaluate project benefits and social and environmental impacts, (viii) arrange for necessary staff training programs; (ix) manage procurement, consulting and NGO services, and loan disbursement; (x) maintain financial accounts; and (xi) prepare periodic implementation progress reports. The Project Director shall be responsible for overall management of the Project, and coordination with and reporting to the State Government and ADB. A dedicated design cell for the Project shall be established and made functional under Chief Engineer Design.</p>	Throughout the Project period.	
Subproject Implementation Office (SIOs)			
LA, Sched.5, para. 4	<p>For major and medium schemes, under the PMU, the EA shall ensure that six SIOs are established for the six major subprojects and six SIOs are established for the nine medium subprojects, building on the existing establishments at the field level. The SIOs shall be comprised of technical, CAD, and water user association (WUA) support cells, constituted by staff from DOWR, CADA, and NGOs engaged for WUA strengthening, PIM/CAD, and agriculture. The WUA support cell shall also have a number of support service teams mobilized through an NGO comprising three persons with technical orientation in community mobilization, agriculture extension and agribusiness, and CAD and on-farm water management who work closely with the assigned WUA and its DOWR counterpart staff. For each scheme there shall be a subproject manager who is a superintending engineer or an executive engineer (for some medium schemes). A resettlement unit shall also be set up as required.</p>	Throughout the Project period.	

Reference	Covenant	Compliance Date	Status
LA, Schedule 5, para. 5	For minor lift schemes, the EA shall ensure that the PMU has a lift irrigation cell comprising deputed engineer(s) from OLIC, two economists, one of whom shall be the team coordinator, one monitoring and evaluation expert and three mobile teams comprising an engineer and an agriculture specialist. The PMU shall be assigned for central procurement, subproject planning including feasibility studies, and monitoring and evaluation. Under the PMU, up to four SIOs shall be established to implement up to 300 ongoing schemes at a time in the project geographical areas, comprising WUA specialist (designated as subproject manager), on-farm water management/ agriculture specialist, work inspector, and a deputed engineer from OLIC. The PMU and SIO staff for minor lift schemes shall be primarily engaged through a local firm as minor lift irrigation implementation consultants, who will also be associated with local NGOs to mobilize field level community organizers cum coordinator to support institution building and program delivery of up to 20 WUAs for a two-year implementation period.	Throughout the Project.	.
LA Schedule 5, para. 6	In support of the implementation of the Project, the EA through the Water and Land Management Institute (WALMI) shall provide necessary backup and training support, along with other organizations engaged for training purposes.	Throughout the Project	
LA Schedule 5, para. 7	The EA shall put into operation the specific arrangements to improve quality of implementation of the Investment Program as identified below: (a) The EA will make joint decision making systems operational with their counterpart WUAs and their higher-tier committees regarding all planning and implementation matters as well as subproject O&M, through regular WUA-SIO meetings on progress review, annual and periodic work plans and schedules. The WUAs will also be assigned and trained to participate in monitoring of civil works contracted by the SIO. (b) The EA shall 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. (c) The EA shall 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 WUAs and other stakeholders.	Throughout the Project.	

Reference	Covenant	Compliance Date	Status
	<p>(d) The EA, through its internal audit wing, shall undertake annual financial audit for all SIOs and associated offices, which will include investigation of all financial records and transactions.</p> <p>(e) The EA shall strengthen its construction supervision, recording, and reporting system with the use of modern technologies, establish a quality control cell, and operationalize internal third party technical audit mechanism. Accordingly, all work contracts will include provisions for third party inspection for quality control. External monitoring, supervision, and technical audit consultants will also be mobilized under the ISPM consultant team.</p> <p>(f) All contracts financed by ADB for the project will include provisions stipulating ADB's right to audit and examine the records and accounts of the contractor.</p> <p>(g) The EA shall carry out the subprojects under the Facility in manner consistent with the Poverty Reduction and Social Strategy, including the Gender Action Plan, dated 20 December 2007, prepared in relation to the Investment Program.</p>		
SUBPROJECT SELECTION AND IMPLEMENTATION			
Subproject Selection Criteria			
LA, Schedule 5, para. 8 (a)	(a) The EA shall ensure that all Subprojects are selected and processed for approval, in accordance with the criteria and procedures included under Schedule 4 to the FFA, as agreeable to ADB, the Borrower and the State.	Throughout the Project	
Subproject Implementation			
LA, Schedule 5, para. 8 (b)	(b) The EA shall post the procurement documents, the criteria for Subproject selection and details of sanctioned contracts/Subprojects on the State's Investment Program office bulletin board and its website.	Throughout the Project	
OTHER MATTERS			
Institutional Reforms and Sustainability			
LA Schedule 5, para. 9	<p>The State shall implement all policy and institutional actions as specified in Table 2 of FFA Schedule 2, including actions to implement State Water Policy 2007 and State Water Plan 2004; organizational reforms and strengthening of DOWR and associated institutions; reforms in the pani panchayat legal framework; progress in irrigation management transfer; sustainable O&M; and steps towards operationalizing IWRM.</p> <p><i>[Also shown in Appendix 1 of Facility Administration Memorandum]</i></p>	Time schedule shown in Table 2 FFA Schedule 2.	(Separate status table to be prepared corresponding to Table 2 of FFA Schedule 2.)

Reference	Covenant	Compliance Date	Status
LA Schedule 5, para. 10	The State shall ensure adequate funds towards O&M of the Project facilities through budgetary allocations or other means, to be provided to DOWR during and after Subproject completions.	After Project completion.	
SAFEGUARDS AND SOCIAL ISSUES			
Environment			
LA Schedule 5, para. 11	<p>The EA shall ensure that:</p> <p>(a) the Project is carried out and all Subproject facilities designed, constructed, operated, maintained, and monitored in compliance with the environmental laws and regulations of the Borrower, the State, ADB's Environment Policy (2002), and the EARF;</p> <p>(b) an IEE as required, including an EMP with budget identifying the cost of its implementation as incorporated in the related bid document if any, in consultation with stakeholders for each Subproject, in accordance with the EARF shall be submitted to ADB for review and clearance before award of related contract. In case of any environmental assessment for a Subproject classified as A or B sensitive, this shall be subject to the 120 day public disclosure requirement under ADB's Environment Policy (2002);</p> <p>(c) all mitigation measures identified in the EMP for each Subproject shall be incorporated in Subproject design, and carried out during construction, and O&M, and disclosed to stakeholders;</p> <p>(d) if there are any changes in specific locations or alignments of any Subproject facilities after completion of the process of IEE (or EIA) or due to detailed design or implementation that has an impact on the environmental assessment carried out thus far, then additional environmental assessment shall be carried out in accordance with applicable laws and regulations of the Borrower, the State, and ADB's Environmental Policy (2002) and the EARF, and prior clearance of ADB obtained before further physical implementation of the Subproject;</p> <p>(e) all environmental clearances required by applicable laws, and regulations at Borrower, State, or local levels shall be obtained in a timely manner, prior to commencement of civil works for the relevant Subproject, and</p> <p>(f) semi-annual progress reports on the implementation of the EMPs shall be carried out as a part of Project implementation and submitted to ADB for review and disclosure in accordance with ADB's Public Communications Policy (2005).</p>	Throughout the Project.	
Land Acquisition and Environment			
LA Schedule 5, para. 12	<p>The EA shall:</p> <p>(a) undertake the Project in accordance with the Borrower's and State laws and regulations, ADB's Policy on Involuntary Resettlement (1995) and the</p>	Throughout the Project.	

Reference	Covenant	Compliance Date	Status
	<p>resettlement framework (RF);</p> <p>(b) ensure that to the extent possible, Subprojects will not require land acquisition or involuntary resettlement; however, if land acquisition and/or involuntary resettlement are required for any subproject; the EA shall ensure the following:</p> <p>(i) a RP for the Subproject, acceptable to ADB is prepared, in accordance with applicable laws and regulations of the Borrower and the State, and the RF, and submitted to ADB for review and approval before award of related civil works contract proper consultation during preparation of the RP with the affected persons, as also disclosure of the RP to the affected persons including information on land acquisition and compensation process undertaken;</p> <p>(ii) all land, rights of way and other land-related rights required for the Subproject are acquired or made available;</p> <p>(iii) all affected persons are compensated in accordance with the agreed RP before commencement of civil works under the related subproject including any section-wise handover thereof, strictly in accordance with the stipulation in the related civil works contract. If during detailed design and implementation, any modification and/additional land acquisition or involuntary resettlement impacts are identified, the RP will be prepared (or modified if existing) in accordance with applicable laws and regulations of the Borrower and the State, and the RF and prior approval of ADB obtained before further implementation of RP;</p> <p>(iv) ensure that efficient grievance redressal mechanisms are in place in accordance with the related RP to assist affected persons resolve queries and complaints if any, in a timely manner.</p>		
Indigenous People			
LA Schedule 5, para. 13	<p>The EA shall ensure that if any impact is identified during planning, design, or implementation of any Subproject on indigenous peoples, that an IPDP or integration of specific actions for the indigenous people in the RP is prepared in accordance with ADB's Policy on Indigenous People (1998) and the IPDF and that the same is further (i) approved by ADB before award of related civil works contract, and (ii) implemented before commencement of related civil works contract. Any update to the IPDP due to detailed designs or during implementation shall follow requirements similar to the RPs.</p>	Throughout the Project	
Other Social Issues			
LA Schedule 5, para. 14	<p>The EA shall ensure that civil works contracts under the Project follow all applicable labor laws of the Borrower and the State and that these further include provisions to the effect that contractors; (i)</p>	Throughout the Project	

Reference	Covenant	Compliance Date	Status
	<p>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; and (ii) follow and implement all statutory provisions on labor (including not employing or using children as labor, equal pay for equal work), health, safety, welfare, sanitation, and working conditions. Such contracts shall also include clauses for termination by the State/EA in case of any breach of the stated provisions by the contractors.</p>		
Performance Monitoring and Evaluation; Reports			
<p>LA Schedule 5, para. 15</p>	<p>(a) The EA shall ensure that an Investment Program performance monitoring system (IPPMS) satisfactory to ADB is established within three months of Effective date. The IPPMS shall monitor and evaluate the performance of the Investment Program, Facility, as well as of the Project and the Subprojects, including key impact and outcome indicators and associated assumptions with corresponding target dates.</p> <p>(b) Without limiting the generality of Section 2.08 of the Project Agreement the State shall, after physical completion of the Project, but in any event not later than three months thereafter or such later date as ADB may agree for this purpose, prepare and furnish to ADB a report under intimation to the Borrower, in such form and in such detail as ADB shall reasonably request on the Project.</p>	<p>Within 3 months of effectiveness date</p> <p>Within 3 months after physical completion</p>	
REVIEW			
<p>LA Schedule 5, para. 16</p>	<p>Based on a review of quarterly progress reports provided under section 2.08 of the Project Agreement, ADB, Borrower and State representatives shall meet as required to discuss the progress of the Project, Facility and the Investment Program, 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 and Investment Program. 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. The midterm review shall 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.</p>	<p>Throughout the Project</p>	