

Periodic Financing Request Report

Project Number: 38411-043 June 2015

Orissa Integrated Irrigated Agriculture and Water Management Investment Program: Project 2

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 11 June 2015)

Currency Unit – Indian rupee/rupees (Re/Rs) Re1.00 = \$0.0156798

\$1.00 = Rs63.77620

ABBREVIATIONS

ADB	_	Asian Development Bank
CAD	_	command area development
DOWR	_	Department of Water Resources
FAM	_	facility administration manual
ha	_	hectare
IWRM	_	integrated water resources management
km	_	kilometer
MLI	_	minor lift irrigation
NGO	_	nongovernment organization
O&M	_	operation and maintenance
OFID	_	OPEC Fund for International Development
PIM	_	participatory irrigation management
PMU	_	project management unit
SIO	_	subproject implementation offices
WUA	_	water user association

NOTES

- (i) The fiscal year of the Government of India and Odisha and their agencies ends on 31 March.
- (ii) In this report, "\$" refers to US dollars.

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TRANCHE AT A GLANCE

1.	Basic Data			Project Num	ber: 38411-043
	Project Name	Orissa Integrated Irrigated Agriculture and Water	Department	SARD/SAER	
		Management Investment Program - Project 2	/Division		
	Country	India	Executing Agency	Department of W	ater
	Borrower	Government of India		Resources, Gov'	t of Odisha
2	Sector	Subsector(s)	1	ADB Financing	n (\$ million)
1	Agriculture, natural	Agricultural drainage			19.20
•	resources and rural				
	development				
		Agricultural production			8.40
		Irrigation			69.60
		Rural flood protection			13.20
		Rural water policy, institutional and capacity			9.60
		development		-	
				lotal	120.00
3.	Strategic Agenda	Subcomponents	Climate Change Inf	formation	
	Inclusive economic	Pillar 2: Access to economic opportunities,	Climate Change im	pact on the	Medium
	growth (IEG)	including jobs, made more inclusive	Project		
	Environmentally	Disaster risk management			
	(ESC)	Natural resources conservation			
4	Drivers of Change	Components	Gender Equity and	Mainstreaming	
	Governance and	Institutional development	Effective gender ma	instreaming	1
	capacity development	Organizational development	(EGM)	linetiourning	•
	(GCD)				
5	Poverty Targeting		Location Impact		
•.	Project directly targets	Yes	Rural		Hiah
	poverty				
	Geographic targeting	Yes			
	(TI-G)				
6.	Risk Categorization:	Complex	1		
7.	Safeguard Categorizati	on Environment: B Involuntary Resettlement:	A Indigenous Peor	oles: B	
8	Financing	•	. .		
0.	Modality and Sources		Amount (\$ m	illion)	
	ADB			120.00	
	Sovereign MFF-Tranc	che (Loan): Ordinary capital resources		120.00	
	Cofinancing			0.00	
	None			0.00	
	Counterpart			52.00	
	Beneficiaries			4.00	
	Government			48.00	
		Total		172.00	
9.	Effective Development	Cooperation			
	Use of country procurem	lent systems	No		
	Use of country public fina	ancial management systems	Yes		

TRANCHE AT A GLANCE

Date of Receipt by ADB of PFR: 12 March 2015	Tranche Number: 2
10. Country Operations Business Plan	
CPS	http://www.adb.org/documents/india-country-partnership-strategy-2013-201 Z
СОВР	http://www.adb.org/documents/india-country-operations-business-plan-2015 -2017

11. Tranche Summary

The Orissa Integrated Irrigated Agriculture and Water Management Investment Program aims to enhance the productivity and sustainability of irrigation systems in the four northern river basins of Odisha (Baitarani, Brahmani, Budhabalanga, and Subernarekha) and the Mahanadi delta. The second tranche Ioan will finance modernization of 7 surface water irrigation systems (and High Level Canal Range-1, Kanjhari, Kansbhal, Macchagaon, Mahandai Chitrotpola Irrigation Island, Pattamundai, and Ramial) and about 750 minor lift irrigation schemes. It will also restore about 57 kilometers of coastal embankments damaged by Cyclone Phallin that are needed to protect agricultural land and infrastructure from saline water intrusion and storm surges. Like Project 1, Project 2 activities will include: (i) water user association (WUA) empowerment, (ii) modernization of irrigation and associated infrastructure, (iii) agriculture support services, and (iv) progressive transfer of the operation and maintenance (O&M) to WUAs. Project 2 will continue support for strengthening the Department of Water Resources (DOWR) and WUAs in participatory irrigation and integrated water resources management approaches.

Impact and Outcome: The impact will be economic growth, including agricultural growth, in Odisha is sustainable, broad-based and more inclusive (12th Five-Year Plan: 2012-2017). The outcome will be productivity of agriculture in selected river basins in Odisha increased.

Outputs: (i) Water resources and irrigation management of state and water user institutions strengthened, and (ii) Irrigation system and associated infrastructure modernized and managed.

Implementation Arrangements: Department of Water Resources, Gov't of Odisha will be the executing agency.

Project Readiness: A. Status of Compliance with Detailed Design - Completed

B. Status of Recruitment of Consultants - Institutional strengthening and project management consultant engaged for Project 1 will continue for Project 2. Consultants for construction management and supervision, WUA strengthening, and minor lift irrigation (MLI) implementation are being recruited.

C. Status of Bidding Process for Civil Works - It is expected that 41% of contracts (with aggregate value of \$29 million) will be ready for award by August 2015. At present, packages totaling \$15.4 million are near ready for award.

D. Program Management Unit (PMU) established and core PMU staff designated - Yes

- E. Status of land acquisition 94% completed
- F. Others
- 1. Status of local counterpart financing stage funds included in annual budget
- 2. Local permits and other clearances (right-of-way, utilities etc.) obtained Not required

12. Significant Developments in the MFF and Previous Tranches

Project 1 became effective on 4 June 2009. Works for modernization of irrigation infrastructure (main, distributary, and minor canals) and minor lift irrigation schemes are mostly complete. Some work on the Taladanda subproject requires re-tendering and will be completed after loan closure in September 2015. WUA strengthening is complete for 118 of the targeted 121 WUAs. Initial trends for improved agricultural productivity are positive, with a 37.5% noted increase in cropping intensity (compared to the 20% target) and a 172.0% increase in crop production to date (compared to a 50.0% target).

13. Milestones

Estimated Approval	Estimated Effectiveness	Estimated Completion ^a
30 June 2015	30 September 2015	17 September 2018

14. Linked Documents

	Required Document	Disclosure Date
(i) Environment	IEE - Initial Environment Examination	
	EARF - Environmental Assessment and Review Framework	
Weblink:	http://www.adb.org/projects/38411-043/documents	23 April 2015
	http://www.adb.org/projects/documents/orissa-integrated-irrigated-agriculture-and-	23 April 2015
	water-management-investment-program-t2-earf	•
(ii) Involuntary resettlement	RP - Resettlement Plan	
	RF - Resettlement Framework	
Weblink:	http://www.adb.org/projects/documents/orissa-integrated-irrigated-agriculture-water	14 August 2013
	-management-investment-program-t2-machhagaon-rp	5 March 2014
	http://www.adb.org/projects/38411-043/documents	14 August 2013
	http://www.adb.org/projects/documents/orissa-integrated-irrigated-agriculture-water	21 April 2015

TRANCHE AT A GLANCE

	-management-investment-program-t2-rp	21 April 2015
	http://www.adb.org/projects/38411-043/documents	-
	http://www.adb.org/projects/documents/orissa-integrated-irrigated-agriculture-water	
	-management-investment-p2-rf	
(iii) Indigenous peoples	IPPF - Indigeneous Peoples Planning Framework	
Weblink:	http://www.adb.org/projects/documents/orissa-integrated-irrigated-agriculture-and-	23 April 2015
	water-management-investment-program-t2-ippf	•

 $^{\rm a}$ For Tranches, this refers to the financial closing date.

Ι. BACKGROUND

1. The Asian Development Bank (ADB) approved a multitranche financing facility of \$188.2 million on 18 September 2008 funded by ADB's ordinary capital resources for the Orissa Integrated Irrigated Agriculture and Water Management Investment Program.¹ Tranche 1 (\$16.5 million) under the investment program was approved by the President on 26 September 2008. On 13 February 2009, the ADB Board of Directors approved the administration of \$30 million cofinancing from the OPEC Fund for International Development (OFID). The maximum amount of ADB's loan under the investment program was reduced from \$188.2 million to \$157.5 million.² OFID financing is only for project 1. The framework financing agreement for the investment program was signed on 8 August 2008.

2. The investment program is expected to directly improve the incomes and livelihoods of about 1.7 million people by enhancing the productivity, water use efficiency, and sustainability of irrigated agriculture systems covering 215,000 hectares (ha), and improving performance of irrigation service delivery and water resources management. It finances participatory planning and water user association (WUA) empowerment; improvements to existing irrigation and associated infrastructure, including operation and maintenance (O&M); and institutional strengthening. The selected areas for the investment program in Odisha are the Baitarani, Brahmani, Budhabalanga, and Subernarekha river basins and part of the Mahanadi delta.

Despite high economic growth in India, agriculture remains a vital sector with about 75% 3. of the population dependent on rural incomes. India's food security relies on producing sufficient cereal crops to meet the demands of a growing population. Agriculture sector growth in India slowed in the 1990s and 2000s, averaging about 3.5% per annum. Cereal yields increased by only 1.4% per annum in the 2000s. The slow-down in agriculture sector growth is a major cause for concern. Water resources for irrigated agriculture also face increasing competing demands from industry and urban users and the predicted impacts of climate change. Deteriorated irrigation infrastructure, insufficient O&M, and low water use efficiency lead to low agricultural productivity.

Odisha is the sixth-poorest state of India, with 32.6% of the population of 42 million living 4. below the poverty line, as of the 2011 census. Odisha's economy has been experiencing a shift from agriculture towards the industry and services sectors. In 2014–15, the broad agriculture sector contributed 15.4% of gross domestic product, industry 33.4%, and the services sectors 51.2%. Agriculture remains a priority sector for Odisha because of its high potential for employment generation, inclusiveness, and sustainable growth.³ Yet, the sector continues to be traditional, with limited diversification and low levels of productivity. The Odisha development plan and budget include enhanced support to agriculture and allied sectors for increasing production, productivity and crop diversification, and modernizing irrigation.⁴ The state government has progressively developed the policy, planning, and institutional basis for the irrigation and water resources sector since the late 1990s. Adopting participatory irrigation and integrated water management approaches, focusing on sustainable O&M of irrigation systems,

¹ ADB. 2008. Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility to India for the Orissa Integrated Irrigated Agriculture and Water Management Investment Program. Manila. The name of the state was officially changed from "Orissa" to "Odisha" on 4 November 2011, ² ADB. 2009. Major Change in Investment Program Implementation: Orissa Integrated Irrigated Agriculture and

Water Management Investment Program in India. Manila.

³ Government of Odisha. 2015. Odisha Economic Survey, 2014-15. http://www.odisha.gov.in/pc/Download/ Economic Survey 2014-15.pdf

⁴ Government of Odisha. <u>http://www.odisha.gov.in/pc/12th Annual Plan 2013 14 Vol I.asp</u>

and strengthening the Department of Water Resources (DOWR) are high priorities for the state.⁵ The investment program directly supports these reforms.

5. Projects 1 and 2 focus on increasing water use efficiency and agriculture productivity on major, medium-sized, and minor lift irrigation (MLI) subprojects in the selected area of the investment program. The main benefits are increased agricultural production due to improved system performance, particularly in areas with little or no access to irrigation. This will be through modernization of the existing infrastructure and improved reservoir and canal operation, along with increased labor opportunities, better nutrition, increased incomes, and reduced poverty.⁶ The executing agency is the state of Odisha acting through the DOWR.

6. By September 2015, project 1 is expected to have (i) modernized irrigation infrastructure and strengthened 121 WUAs for improved system performance and agricultural productivity on one major and three medium-sized irrigation subprojects, and (ii) revived 650 MLI schemes and strengthened associated WUAs in selected existing irrigation schemes in Odisha.⁷ It has also supported the DOWR for integrated water resources management (IWRM) and in establishing a multidisciplinary participatory irrigation management (PIM) and command area development (CAD) directorate for the strengthening of WUAs. The area benefitted is 70,080 ha.

7. ADB received a periodic financing request for tranche 2 from the government on 12 March 2015⁸ to support the second project.⁹ Within the selected river basins for the investment program, project 2 will modernize irrigation and associated infrastructure, and strengthen WUAs in different areas than in project 1. The government has requested tranche 2 to finance an additional four major and three medium-sized irrigation schemes¹⁰ and 750 MLI schemes, and restore about 57 kilometers (km) of coastal embankments needed to protect agricultural land and infrastructure from saline water intrusion and storm surges.¹¹ Project 2 was designed based on the experience gained under project 1 and will strengthen relevant agencies as part of project implementation. Like project 1, project 2 activities will include (i) WUA empowerment, (ii) modernization of irrigation and associated infrastructure, (iii) agriculture support services, and (iv) progressive transfer of O&M to WUAs. Project 2 will continue support for strengthening the DOWR and WUAs in PIM and IWRM, and will benefit 108,091 ha. The country operations business plan, 2015–2017 for India includes a firm provision for tranche 2 in 2015.¹²

⁵ Government of Odisha. <u>http://www.odisha.gov.in/pc/Annual_Plan_2014_15.asp</u>

⁶ Irrigation modernization is a process of technical and managerial upgrading combined with institutional reforms, with the objective of improving resource utilization to farms (Thierry Facon. 2005. The Future of Large Rice-based Irrigation Systems In Southeast Asia. *Food and Agriculture Organization*. RAP Publication 2007/2008. Page 5).

⁷ Project 1 includes the Taladanda major subproject and the Remal, Sunei, and Gohira medium-sized irrigation subprojects.

⁸ Periodic financing request for tranche 2 is in Appendix 1.

⁹ The investment program was designed to be implemented in 4 tranches and cover 6 major and 9 medium-sized irrigation subprojects and 1,400 MLI schemes. Project 2 includes some of the activities originally envisaged to be covered in projects 3 and 4. A total of 5 major and 6 medium-sized irrigation subprojects and 1,400 MLI schemes will be supported through projects 1 and 2 combined.

¹⁰ Macchagaon, Pattamundai, Mahandai Chitrotpola Irrigation Island, and High Level Canal Range-1 major subprojects (more than 10,000 ha command area) and the Ramial, Kanjhari, and Kansbhal medium-sized subprojects (2,000–10,000 ha command area).

¹¹ On 13 January 2015, ADB's President approved a minor change in scope of the investment program to include coastal embankment restoration. The investment program design assumed that damage from natural calamities would be repaired and managed. Cyclone Phailin in October 2013 damaged about 1,071 km of coastal embankments, and restoration works are beyond the government's ability to manage without financial assistance.

¹² ADB. 2014. *Country Operations Business Plan: India, 2015–2017.* Manila.

II. ASSESSMENT OF MULTITRANCHE FINANCING FACILITY IMPLEMENTATION

Project 1 became effective on 4 June 2009 and was designed to enhance the 8. productivity and sustainability of one major and three medium-sized subprojects and 650 MLI schemes. The original closing date was 30 September 2014, and it was extended to 30 September 2015. The extension was needed because of implementation delays during project startup, primarily the repeated retendering of civil works contracts and late recruitment of consultants and nongovernment organizations (NGOs). As of 31 May 2015, contract awards were 88% of the ADB and OFID loans. Disbursements were 91% of ADB loan commitments and 77% of OFID loan commitments. The DOWR has requested cancellation of \$3.6 million of the OFID funds. Overall progress is satisfactory and rated "on track." Works for modernization of irrigation infrastructure (main, distributary, and minor canals) are complete in the Sunei subproject and will be completed in Remal and Gohira subprojects by June 2015. Work on the Taladanda subproject requires retendering and will be completed using state funds. The MLI schemes are expected to be completed by June 2015. WUA strengthening is complete for 118 of the targeted 121 WUAs. CAD has been completed on 86% of the target area of 17,273 ha. Initial trends for improved agricultural productivity are positive, with a 37.5% noted increase in cropping intensity (compared to the 20% target) and a 172.0% increase in crop production to date (compared to a 50.0% target).

9. A project management unit (PMU), the PIM–CAD Directorate, and subproject implementation offices (SIOs) were established.¹³ Implementation progress suffered start-up delays mainly because of (i) lack of advanced actions, particularly for procurement of civil works and recruitment of consulting and NGO services; (ii) delays in the completion of topographic surveys for subminor canals; (iii) limited bidder participation resulting in repeated retendering of civil works packages (the first out of 22 packages was awarded in June 2009 and the last was awarded in February 2013); and (iv) less resourceful contractors implementing works (poor scheduling of activities). The PMU capacity has been strengthened during implementation through capacity building activities such as on-the-job training and enhancement of technical resources. The PMU is more experienced and better resourced for implementation of project 2.

10. One of the main challenges during implementation has been outreach for strengthening WUAs on major irrigation systems. This is mainly due to the size of the command area, particularly on major systems which have a large number of WUAs (typically more than 70 per subproject). The microplanning process for WUA strengthening is detailed and time consuming. This becomes additionally challenging on major systems, which require greater outreach to a large number of WUAs. Medium-sized subprojects are compact, with fewer WUAs (up to 15), and better demonstrate the success of WUA strengthening efforts. For project 2, the DOWR agreed to selecting a smaller number of WUAs on major irrigation systems (a maximum of 30 WUAs per major subproject), which will enable support to be more focused and intensive.

11. There has been progress in road map activities: (i) operationalizing IWRM at state and basin levels in Odisha, (ii) refining the Pani Panchayat¹⁴ Act 2002 and Rules 2003, (iii) progress in PIM and irrigation management transfer, and (iv) O&M fund allocation and revenue targets. Because of project start-up delays and focus on irrigation system development, the progress of IWRM and O&M fund actions has been limited. This is mainly a result of challenges faced in project start-up and civil works implementation. Project 2 will continue to provide support to these activities by providing dedicated specialist support services for IWRM actions for (i)

¹³ The SIO comprises DOWR divisional engineers and a multidisciplinary support services team.

¹⁴ Pani Panchayat is a farmers' association at the primary level consisting of all the water users, as constituted within a specified hydraulic boundary of a major, medium-sized, or minor (flow and lift, both surface and ground water) and creek irrigation projects funded by the Government of India.

stakeholder consultation, (ii) preparation of the Baitarani river basin plan, and (iii) activating the river basin organization to meet regularly. The targets for O&M fund allocations and revenue will be given greater emphasis under project 2.

12. The DOWR has generally complied satisfactorily with loan covenants associated with project 1. Safeguards compliance have been satisfactory and good execution and mobilization of capable staff resources has been demonstrated. Resettlement implementation is being closely monitored by the DOWR and ADB.

III. PERIODIC FINANCING REQUEST

A. Impact and Outcome

13. The project is aligned with the Government of Odisha's 12th Five-Year Plan: 2012-2017¹⁵ that "economic growth, including agricultural growth, in Odisha to be sustainable, broadly based, and more inclusive." The expected outcome will be increased productivity of agriculture in selected river basins in Odisha.¹⁶

B. Outputs

14. The project will have two main outputs:

15. **Output 1: Water resources and irrigation management of state and water users institutions strengthened.** Project 2 will continue strengthening institutional capacities of the DOWR, PIM–CAD Directorate, and SIOs to establish mechanisms for improved irrigation system performance. This will include (i) establishment of systems for quantitative water use in the Baitrani river basin; and (ii) re-electing 169 WUAs in accordance with the revised Pani Panchayat Rules of 2003, with at least 33% women in executive committees for decision making.¹⁷ Overall performance and achievements will be measured through WUA satisfaction surveys at the subproject level. The output will also support IWRM activities in accordance with the sector road map. Specific activities will be operationalizing the Baitarani River Basin Organization and strengthening the Odisha Water Planning Organization in river basin modelling.

16. **Output 2: Irrigation system and associated infrastructure modernized and managed.** This output will include (i) modernization of irrigation infrastructure on four major and three medium-sized subprojects to improve 108,091 ha of irrigated area; (ii) rehabilitation of 750 MLI schemes; (iii) field channels and distribution structures to benefit 54,045 ha; and (iv) restoration of about 57 km of saline embankments in four coastal divisions (Aul, Puri, Khurda, and Nimapara).

C. Investment and Financing Plans

17. The project is estimated to cost \$172 million (Table 1). Detailed cost estimates for project 2 are in the facility administration manual (FAM).¹⁸ The costs comprise 58% civil works, 5% equipment, 16% consultant services, 7% training, and 9% recurrent costs.

¹⁵ Government of Odisha. 12th Five-Year Plan, 2012–2017.

http://www.odisha.gov.in/pc/12th Annual Plan 2013 14 Vol Lasp

¹⁶ Design and monitoring framework for project 2 is in Appendix 2.

¹⁷ The specific training subjects include participatory planning, WUA development, design and construction management, quality control, O&M, PIM, resettlement, environmental management, and support services.

¹⁸ The updated FAM is in Appendix 3.

Table 1: Proposed Project 2 Investment Plan

(\$ million)

Item		Amount ^a	
Α.	Base Cost ^o		
	1. State and water user institutions strengthened	3.0	
	Irrigation and associated infrastructure modernized and managed	120.0	
	3. Project management	34.0	
	Subtotal (A)	157.0	
В.	Contingencies ^c	13.0	
C.	Financing Charges During Implementation ^d	2.0	
	Total (A+B+C)	172.0	
^a Inclu	ides taxes and duties of \$8.9 million to be financed from government resources		

and duties of \$8.9 million to be financed from government resources.

^b In June 2014 prices.

^c Physical contingencies computed at 3% for civil works; 5% for resettlement; 10% for consulting services, Pani Panchayat support services, and equipment (including minor lift irrigation equipment); and zero for other items. Price contingencies computed at 4.0% between data collection and negotiations (2007-2014), with annual inflation of 2.0%-2.2% on foreign exchange costs and 18.4% between data collection and negotiations (2007-2014), with annual inflation of 8.0%-8.4% on local currency costs using Asian Development Bank (ADB) domestic cost escalation factors as of June 2014. Includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

Includes interest and commitment charges. Interest during construction for ADB loans has been computed at the 5year London interbank offered rate plus a spread of 0.50%. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank estimates.

The government has requested a loan of \$120 million from ADB to help finance project 18. 2. The loan will have a 20-year term, including a grace period of 5 years, straight-line method, an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility, a commitment charge of 0.15% per year, and such other terms and conditions set forth in the draft loan and project agreements. The government and beneficiaries will contribute \$52 million or 30% of the total cost of project 2 to finance taxes and duties, resettlement costs, and part of the civil works and other costs.¹⁹

19. The financing plan proposed for project 2 is in Table 2.

Table 2: Financing Plan					
Amount Share of					
(\$ million)	Total (%)				
120	70				
48	28				
4	2				
172	100				
	ncing Plan Amount (\$ million) 120 48 4 4 172				

Source: Asian Development Bank estimates (June 2014).

D. Implementation Arrangements

Overall, the implementation arrangements for the proposed project 2 will be the same as 20. under project 1, except for strengthening technical support through consulting services. The state of Odisha will continue to be the project executing agency acting through the DOWR. Institutional strengthening and project management consultants from project 1 will continue and additional consulting services will be provided for (i) construction management and supervision, (ii) MLI implementation, (iii) IWRM, and (iv) WUA strengthening through dedicated field support services teams.

21. Financial management capacity will be strengthened with the recruitment of a chartered accountant to assist the PMU financial management team. The procurement capacity of the

¹⁹ The detailed cost estimates for project 2 are in the FAM.

DOWR through the PMU has improved during project 1 implementation. ADB procurement procedures have been institutionalized and implemented systematically.

22. Implementation arrangements are summarized in Table 3 and described in detail in the updated FAM.²⁰ Procurement of works and goods financed by ADB will be in accordance with ADB's Procurement Guidelines (2015, as amended from time to time) and recruitment of consultants financed by ADB will be undertaken in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).

Aspects	Arrangements			
Implementation period	June 2015–September 2018			
Estimated completion date	17 September 2018			
Management				
(i) Oversight body	body State Project Steering Committee			
	Agriculture production commissioner (chair)			
	Departments of Water Resources, Agriculture, Child and Women's Affairs,			
	Fisheries, Forest and Environment, Hort	iculture, Industries, Live	stock, and	
	Scheduled Caste and Scheduled Tribe.	Also represented are the	e Departments of	
	Planning, Finance, Rural Development,	Panchayat Raj, and Rev	enue, and State	
	Pollution Control Board (members)			
(II) Executing agency	The state acting through DOWR		- 4 1	
(III) Key implementing agencies	DOWR including PIM–CAD Directorate and SIOs associated with each subproject			
(iv) Implementation unit	PMU, 23 staff; PIM–CAD Directorate, 8	staff; and SIO, 110 tech	nical staff	
Procurement	Irrigation main, distributary and minor canals (NCB works)	67 contracts	\$57.3 million	
	MIS equipment (NCB goods)	2 contracts	\$3.2 million	
	Subminor canals (community works)	1,320 contracts	\$9.5 million	
	Minor lift equipment (NCB goods)	14 packages	\$8.4 million	
	Minor lift installation (community	750 contracts	\$4.2 million	
	works)			
	Saline embankment restoration (NCB)	12 packages	\$13.4 million	
	Office equipment, furnishings, and software (shopping)	13 contracts	\$0.14 million	
Consulting services	Construction Management and	1,132 person-	\$2.4 million	
	Supervision (QCBS)	months national		
		inputs		
	MIS Development and Implementation	National inputs,	\$8.6 million	
	(QCBS)	number of person-		
		months to be		
	Minor Lift Irrigation Implementation		¢2.2 million	
		5,200 person-	φ3.2 ΠΙΙΙΙΟΠ	
		inputs		
	WI IA Strengthening (3 packages	2 088 person-	\$2.9 million	
	using ICS and QCBS)	months (national	φ2.0 million	
	g ·	inputs)		
	IWRM (ICS)	102 person-months	\$1.2 million	
		(6 person-months		
		international, 96		
		person-months		
		national inputs)		
Retroactive financing and/or	Advance contracting for procurement of civil works and consulting services;			
advance contracting retroactive financing for up to 20% of the loan amount for expenditures inc			nditures incurred	
	up to 12 months before loan signing.			

Table 3:	Implementation	Arrangements
i able 3:	Implementation	Arrangements

²⁰ The updated FAM is in Appendix 3 and the procurement plan for project 2 is in Appendix 12 of the FAM.

Disbursement	The loan proceeds will be disbursed in accordance with ADB's Loan
	Disbursement Handbook (2015, as amended from time to time) and detailed
	arrangements agreed upon between the government and ADB.

ADB = Asian Development Bank, CAD = command area development, DOWR = Department of Water Resources, ICS = individual consultants selection, IWRM = integrated water resources management, NCB = national competitive bidding, PIM = participatory irrigation management, PMU = project management unit, QCBS = quality- and cost-based selection, SIO = subproject implementation office, WUA = water user association. Source: Asian Development Bank estimates.

C Dreiget Decdinges

E. Project Readiness

23. Feasibility studies (prepared in 2008) for all irrigation subprojects were updated to reflect current socioeconomic conditions.²¹ Major civil works packages are estimated to cost \$70.7 million. For the project to be considered ready for implementation, 30% of these (or about \$21 million) should be ready for award within 30 days of loan signing. As of 31 May 2015, 11 packages totaling about \$15.4 million were nearly ready for award, and the bidding process for 30 packages totaling about \$13.5 million was under way. It is estimated that 25 of the 79 contracts (totaling \$29 million) can be awarded by August 2015. Recruitment of consulting services is under way for the three key packages. As of 31 May 2015, two packages were at the technical evaluation stage and one package was soon to be advertised. Resettlement plans and initial environmental examinations for all relevant subprojects have been approved by ADB.

F. Advance Contracting and Retroactive Financing

24. Under project 2, the government requested for advance contracting to procure services, goods, and civil works, and retroactive financing for an amount not exceeding 20% of the loan amount for eligible expenditures incurred prior to loan effectiveness and during the period of 12 months before the signing of the loan agreement.²²

IV. DUE DILIGENCE

A. Technical

25. Project 2 will utilize the same principles of project design and implementation as project 1. The concept of introducing discharge measurement using flumes was tested on project 1. However, retrofitting such sensitive devices on existing irrigation systems was found to be impractical. This will be replaced with calibrated gauges on canals and associated rating curve for ease of WUAs. For saline embankments, designs have been prepared to withstand cyclone floods, storm surge, wind speed, and seismic forces in line with government standards.

B. Economic and Financial

26. Updated economic and financial analyses undertaken for Project 2 indicate that the project is economically viable. It provides benefits through increased agricultural productivity and household incomes from improved irrigation service delivery. The economic internal rate of return (EIRR) for Project 2 is 22%, and the sensitivity tests confirm that Project 2 is robust. Each of the individual surface water irrigation subprojects is economic with EIRRs ranging from 17% to 26%. The EIRR for the average case MLI scheme is 29%. The benefit distribution analysis confirms that a substantial proportion of the total project benefits will be shared by farmers and the poor (61% of benefits go to poor households).²³ Farm incomes are expected to increase with incremental gains of Rs17,414 to Rs29,987 per hectare, indicating that farmers will have

²¹ The summary of feasibility reports for each subproject is a supplementary appendix.

²² The Periodic Financing Request specifies the government's intention for retroactive financing.

²³ The economic and financial analysis is in Appendix 4.

the capacity to pay O&M costs.

27. The WUAs and DOWR will continue to maintain systems through the contributions of WUAs and state budget support. The state shows good fiscal health and a declining trend in fiscal deficit.

С. Governance

28. Financial management requires further strengthening. An assessment was carried out for the PMU of the DOWR and highlights key areas requiring strengthening under project 2. These include the need for (i) financial record systems that enable better reconciliation with ADB data, (ii) addition of a chartered accountant in the PMU, (iii) a double-entry bookkeeping system that captures information for each output, and (iv) timely submission of high-guality audit reports. With these measures, that have been agreed with the DOWR, financial management arrangements are assessed to be adequate.

29. DOWR capacity building on ADB disbursement, financial, and project management guidelines will continue. Civil works contracts will include a condition that contractors adhere to ADB's Anticorruption Policy (1998, as amended to date). The DOWR will report on project activities and implementation on DOWR and project websites to foster transparency and timely awarding of contracts. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and the DOWR. The specific policy requirements and supplementary measures are described in the FAM.

D. Poverty, Social, and Gender Dimensions

30. There are acute regional, social, and gender disparities in Odisha. More than 22.0% of the population are scheduled tribes and 16.5% scheduled castes. A high proportion of rural women are engaged in agriculture (84%, compared with 67% for men)²⁴ and the shift to other sectors is slower for women than men. Socioeconomic assessments were conducted for project 2 subprojects.²⁵ Project interventions will, among others, (i) strengthen WUAs for improved water use efficiency and increased agricultural productivity; (ii) improve equitable access to water by small, marginal, and landless farmers; and (iii) improve annual farm incomes by about 45% for marginal households. The project 2 gender action plan includes women's (i) contribution to decision making in WUAs, (ii) skills training in improved land and water management, (iii) participation in infrastructure development, and (iv) overall benefits from increased agricultural production. The PIM-CAD Directorate will include a full-time gender specialist, and the support services teams will include one female community organizer. The terms of reference for the vulnerable group specialist in the institutional strengthening and project management consultants have been tailored for greater emphasis on gender inclusion. Project 2 is categorized as effective gender mainstreaming.

Ε. Safeguards

Involuntary resettlement. Project 2 is classified as category A for involuntary 31. resettlement in accordance with ADB's Safeguard Policy Statement (2009). The resettlement framework prepared for the investment program was updated during project 2 preparation.²⁶ The DOWR prepared a resettlement plan for the Mahanadi Chitropola Island subproject in 2011;

²⁴ Ministry of Statistics and Programme Implementation. 2010. NSS Report No. 531: Employment and Unemployment Situation in India: July, 2007–June, 2008, p. H-ii. ²⁵ The updated summary poverty reduction and social strategy is in Appendix 5.

²⁶ The updated resettlement framework is in Appendix 6.

the subproject will be constructed with tranche 2 resources but the resettlement plan was prepared and implemented using tranche 1 resources. The DOWR prepared resettlement plans for the Macchagaon, Pattamundai, and High-Level Canal Range-1 (major) subprojects in 2014. The updated resettlement framework and all resettlement plans have been disclosed in accordance with the Safeguard Policy Statement, and meaningful consultation and information disclosure was conducted with affected people.²⁷ The main involuntary resettlement impact will be loss of assets (residential, commercial, and common property structures) and livelihoods of nontitleholders on existing canal embankments. Land acquisition of 45 ha will occur in Mahanadi Chitropola Island subproject, and the remaining involuntary resettlement is on existing land. The number of affected households is 1,945, of which 633 are being physically displaced from their residences and the remainder are commercial establishments. The DOWR will compensate all affected households for loss of structures and income restoration.

32. The DOWR demonstrated adequate institutional capacity and commitment for managing social risks during the implementation of the Mahanadi Chitropola Island resettlement plan. The resettlement framework prepared for the investment program was revised to be consistent with the Safeguard Policy Statement and outlines the objectives, policy, principles, and procedures for land acquisition, resettlement compensation, and other assistance measures for affected persons. A grievance redress committee will be constituted for each subproject, comprising the project director, PMU resettlement officer, resettlement specialist of the project management consultants, representative from local civil society organizations, elected representatives from municipalites and panchayats as observers, representatives of affected persons including vulnerable groups, and women in the committee. The PMU will monitor resettlement plan implementation with assistance from an NGO and independent external monitor. Safeguards reporting from the PMU to ADB will be done on a semiannual basis.

33. **Indigenous peoples.** Project 2 is classified as category B for indigenous peoples. Odisha has a relatively high indigenous population (22%) compared with other states. In the project 1 medium-sized irrigation subprojects of Kansbahal, 79.3% of the population are indigenous peoples, and in Ramial 52.0%. ²⁸ The scheduled caste and scheduled tribe households are culturally and economically integrated with the mainstream population and the subprojects will not cause any differential impacts on these communities. These communities will benefit from their participation through WUAs and will gain better access to on- and off-farm employment opportunities through grant financing.²⁹ Project 1 has demonstrated that there is a high representation of indigenous peoples in WUAs and they have been included in decision making. The investment program has an approved indigenous peoples development framework and specific actions for indigenous peoples to benefit them from the positive impacts of subproject development through inclusion in the WUA, and livelihoods activities.

34. **Environment**. Project 2 is classified as category B for environment. It comprises modernization of the irrigation system, strengthening of WUA, and rehabilitation of embankments. Initial environmental examinations have been prepared for all subprojects³⁰ and the environmental assessment and review framework for the investment program was updated during the preparation of project 2.³¹ Environmental impacts are positive, including improved water availability, water use efficiency, and increased agricultural production. Institutional strengthening for IWRM will deliver further benefits through river basin management. Potential

²⁷ The resettlement plans are in Appendix 7.

²⁸ Data for Kanjhari subproject is being collected.

²⁹ ADB. 2009. Grant Assistance to India for the Capacity Building and Livelihoods Enhancement of Poor Water Users. Manila.

³⁰ Initial environmental examinations are in Appendix 9.

³¹ Environmental assessment and review framework is in Appendix 8.

negative impacts include deterioration of water quality because of agriculture intensification, and impacts during construction of infrastructure. These are mitigated by introducing integrated pest management and effective soil nutrient management, and ensuring safe and environmentally sound construction with environmental monitoring (sampling and reporting) to the PIM–CAD Directorate.

F. Risks and Mitigating Measures

35. The greatest risk is that the full scope of project 2 cannot be implemented within the available implementation period of the investment program, which ends on 17 September 2018. Experience under project 1 indicates that procurement takes a long time and many packages require retendering because of lack of competition or unresponsive bidders. The quality of contractors during project 1 was also below standard. Major risks and mitigating measures are summarized in Table 4. The project 2 design incorporates strengthened measures to address weaknesses observed during project 1.

14					
Risks	Mitigating Measures				
Potential for low-quality	Quality monitoring by construction management and supervision consultants.				
works and poor time	Contractor and DOWR capacity building in contract administration and construction				
management of contractors	supervision for time, quality, and cost control.				
Weak accounting and audit	Introduce accounting software and recruit chartered accountant to lead PMU				
capacities	financial management team. Capacity building in ADB's financial management and				
	disbursement procedures. Training for PMU financial management team to expedite				
	loan disbursements.				

Table 4: Summary	y of Risks and Mitigatin	g Measures
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ADB = Asian Development Bank, DOWR = Department of Water Resources, PMU = project management unit. Source: Asian Development Bank.

G. Risk Categorization

36. Project 2 is categorized as complex because involuntary resettlement is categorized A.

V. ASSURANCES

37. The Government of India, the Government of Odisha, and DOWR have assured ADB that implementation of the project shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the facility administration manual and loan documents.

38. The Government of India, the Government of Odisha, and DOWR have agreed with ADB on certain covenants for the project, which are set forth in the loan agreement and project agreement.

VI. RECOMMENDATION

39. On the basis of the approval by ADB's Board of Directors for the provision of loans under the multitranche financing facility in an aggregate principal amount not exceeding \$157,500,000 to India for the Orissa Integrated Irrigated Agriculture and Water Management Investment Program, it is recommended that the President approve the proposed tranche as described in paragraph 18 of this report and the draft loan agreement and project agreement for the proposed tranche substantially in the forms attached to this report.

Appendix 1

SCANNED/FAXED TO SAER

CD/RPS/GS/HKV

Ajay S. Singh Director (ADB-II) Telephone: 2309 3744 D. O. No. 1/8/2010-ADB-II

GOVERNMENT OF INDIA MINISTRY OF FINANCE DEPARTMENT OF ECONOMIC AFFAIRS NORTH BLOCK NEW DELHI

Dated, the 11th March, 2015

Subject: Orissa Integrated Irrigated Agriculture and Water Management Investment Program (OIIAWMIP) - Periodic Financing Request # 2- regarding

Dear

This has reference to Framework Financing Agreement (FFA) for the Orissa Integrated Irrigated Agriculture and Water Management Investment Program (OIIAWMIP) dated 8th August, 2008, between Asian Development Bank (ADB) and INDIA. Expressions defined in the FFA shall have the same meanings herein.

2. Pursuant to the provisions of the FFA, INDIA requests ADB to process this Periodic Financing Request (PFR) for a tranche, in the form of a loan from its Ordinary Capital Resources (OCR). The proposed financing amounts, terms, conditions, and financing plan are specified in Attachment A hereto. Descriptions of the investment project for which financing is hereby requested are also set out in Attachment hereto.

3. ADB is requested to process the said PFR-2 for the purposes of carrying out a part of the Orissa Integrated Irrigated Agriculture and Water Management Investment Program (OIIAWMIP) in accordance with the provisions of the FFA, the loan agreement and project agreement, and supplementary documents to be agreed between ADB and INDIA.

With regards,

Yours sincerely,

-3PULL (Ajay S. Singh)

Mr. Hun Kim, Director General, South Asia Regional Department, Asian Development Bank, 6 ADB Avenue, Mandaluyong City, 1550 Metro Manila, Philippines.



ATTACHMENT A

Project Description On the basis of the FFA for OIIAWMIP, the Government of India submitted 1st Periodic Financing Request (PFR-1) for its first Tranche or 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 Tranche 2 proposed Project-2, to be financed under this PFR-2, will include the following Project Components and Subprojects, of which detailed descriptions are set out in Annex 1 and 2;

Project- 2 Component supporting implementation are envisaged to adopt and adapt the work breakdown structure established under Project-1 (Tranche-1) with modifications/adjustments as introduced reflecting experience and/or lessons learned . Project Details are described in Annex 1

- A. Irrigated Agriculture Management Systems
- 1. Participatory Planning and WUA Strengthening
- 2. Irrigation Infrastructure
- 3. Agriculture and Livelihood Development
- 4. Sustainable Operation and Maintenance Systems
- B. Institutional Strengthening and Project Management
- 1. Institutional strengthening for PIM and IWRM reforms
- 2. Project Management facilities development support

Project -2 Subprojects proposed for implementation

Tranche-2 (2015-18);

- 4-Major Schemes (4 in Mahanadi Delta i.e., Machhagaon, Pattamundai, HLC Range-I and MCII;
- 3-Medium Schemes (2 of Brahmani Basin & 1 of Baitarani Basin)--. (i.e., Kansabahal, Ramial and Kanjhari);
- Minor Lift 750 Schemes
- Emergency Restoration of Saline Embankments

Cost Estimates and Financing Plan The Project-2 (Tranche 2) proposal and preliminary cost estimate was cleared by CWC on 12 January 2012 in its 113th meeting of TAC at the total estimated cost of INR 471.43 Cr. comprising 4 major sub-projects and 3 medium sub-projects as well as associated support programs as outlined in the scope and objectives of Project-2 (including Jajpur estimated cost of Rs 58.043 Cr). With MCII scheme added to Project-2 and Jajpur subproject being dropped, revised cost would be INR 489.83 Cr.).

The total cost of the 7 proposed Subprojects is estimated at INR 489.83 Cr and total cost of 12 segments of saline embankments estimated at INR 80.24 Cr., with the overall Project cost estimated at \$ 171.64 million [exclusive of taxes, duties, and interest and other charges on the loan during construction and any residual funds accruing].

The detailed cost estimates and financing plan are in Annex 2

Item	ADB	State	WUAs	Total
Investment Cost				
Civil Works	71.47	21.45	1.73	94.65
Equipment	6.03	1.09	1.70	8.82
Special Services	23.95	3.61	0.08	27.64
Training	11.40	0.43	0	11.83
Total Investment Cost	112.85	26.57	3.51	142.93
Recurrent Costs	6.99	6.47	0	13.46
Baseline Project Cost	119.84	33.04	3.51	156.40
Contingencies	10.16	2.49	0.35	13.00
Total Project Cost	130.00	35.54	3.86	169.40
Interest during Implementation	0	1.83	0	1.83
Commitment Charges	0	0.41	0	0.41
Total (including financing				
charges)	130.00	37.78	3.86	171.64
Percentage	75.7	22.0	2.3	100

Provisional Cost Estimates and Financing Plan (5 millions	Provisional	Cost Estimates	and Financing	Plan (\$ millions
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-Tax and Duties to be Included in State financing share of other items

[Loan]¹ Amount and Terms The request is for a loan of \$130 million from the ordinary capital of the Asian Development Bank (ADB) provided under ADB's London interbank offered rate (LIBOR)-based lending facility, with a (25) year term including a grace period of (5) years, an interest rate determined in accordance with ADB's LIBOR-based lending facility, and such other terms and conditions as agreed in the FFA, and further supplemented under the Loan Agreement.²

¹ Amend as appropriate for the conversion instrument, e.g., grant, guarantee, or administration of any cofinancing.

Period of Loan/Guarantee Utilization	The components are expected to be completed by (17 September 2018 . No disbursements from the loan account will be requested or made later than 17 September 2018
Advance Contracting	Advance contracting is requested for civil works procurement packages and consulting services
Retroactive Financing	Retroactive financing is requested for the eligible expenditures for 11 numbers of civil works packages with estimated cost of \$ 15.412,million and 1 consulting services package with estimated cost of \$ 4.267million , not exceeding the amount of \$ 19.679 million incurred before loan effectiveness, but not earlier than 12 months before signing of the legal agreement.
Implementation Arrangements	The Executing Agency will be the Department of Water Resources, Government of Odisha. Detailed implementation arrangements will be in the context of the Facility Administration Manual developed for the MFF and updated to incorporate Project 2. No separate project administration manual will be prepared for this tranche.
Procurement and Consulting Services	The procurement plan is attached as Annex (3). Terms of reference for the engagement of advisors under this tranche are under separate cover .
Confirmation of Continuing Validity of and Adherence	INDIA confirms that the understandings set out in the FFA and provisions of previous loan agreements have been adhered, and remain true to date.
FFA, Previous Agreements, and the Design and Monitoring Framework	A full report on compliance is to be prepared as may be needed
Readiness of the Project for Implementation	Feasibility studies and social and environmental safeguard outputs have been completed and approved by ADB. Detailed design for PFR-2 subprojects are complete and/or in advanced stages of preparation. Bidding has already commenced for 22 civil works packages which are currently under evaluation
	Feasibility studies, engineering designs and economic and financial assessments documents/reports are available under separate cover

² This should be suitably revised based if the source of funding is ADF or if the loan is in local currency.

Safeguards Report(s) on the status of compliance with ADB's safeguard requirements (environment, involuntary resettlement and indigenous peoples) for previous PFR 1 have been submitted and approved by ADB.

List of Annexes

- 1 Description of Projects
- 2 Provisional Data for Detailed Cost Estimate Preparation
- 3 Procurement Plan

Annex 1

PROJECT DESCRIPTION

A. Impact and Outcome

1. The impact of the OIIAWMIP – Project 2, will be food security is sustained in selected river basins in Odisha. The project outcome will be increased productivity of irrigated agriculture in selected river basins in Odisha.

In the investment program concept, modernization and rehabilitation of existing irrigation schemes with water user strengthening for improved water management, was designed. Tranche 2 program will include (i) modernizing 4 major and 3 medium irrigation schemes;(ii) 750 minor lift irrigation (MLI) schemes revived; (iii) 919 WUAs strengthened to improve system performance, and (iv) the emergency restoration of 12 saline embankment segments in 4 coastal districts damaged during cyclone Phailin. The net irrigated area to be improved and benefited under Tranche 2 is 108,091 ha. including field channels and distribution structures (CAD works) and 169 PPs cultivating 81,470 ha. The 750 MLI schemes that were planned under Tranches 3 and 4 will be implemented under Tranche 2. The current arrangements of MFF tranches and project areas benefitted are presented in the list of subprojects and command areas in Project 2 Scheme profiles.

2. MLI schemes have been very successful, due to their compact size (20 ha of command area on average), rapid design and implementation, and ease of social mobilization with a limited number of WUA. By the end of Tranche 1, about 650 MLIPs will have been completed. The remaining 750 MLIPs will be completed under Tranche 2.

3. A key weakness has been in the expansion of command area development (CAD) works, comprising watercourses and improved distribution structures, due to the late completion of topographic surveys of the command area and system design. Since CAD works are implemented by WUAs with a contract ceiling amount equivalent to \$4,500 for each community works contract,³ multiple contracting has been required, which has proven time consuming. The contract ceiling amount has been raised to equivalent of \$8,333 per contract to reduce numbers of contracts and time to achieve the output target of CAD works to serve 60% of the command area.

³ Under the Orissa Public Works Department Code, Government of Orissa, 1971.

Project-2 Scheme Profiles

Scheme Name	Basin	Objective and Main Scope
4- Major Schemes		
Machhagaon	Mahanadi delta	<u>Objective</u> : Renovation and modernization (designed irrigation area CCA = 34870 ha <u>Main scope</u> : Formation and strengthening of 30 out of total 77 WUAs; infrastructure improvement; 52.4 km main canals; 187.5 km distributaries, and 33 nos of minor canal systems); command area development (CAD) and agriculture support
Pattamundai	Mahanadi delta	<u>Objective</u> : Renovation and modernization with CCA 32693 ha. <u>Main scope</u> : Strengthening of 30 out of total 59 WUAs; infrastructure improvement (80.5 km main canals; 79.5 km distributary and 37 nos of minor canal systems), and WUA CAD and agriculture support
HLC-Range1	Mahanadi delta	<u>Objective</u> : Renovation and modernization CCA =14000 ha; <u>Main scope</u> : Formation and Strengthening of 32 WUAs; infrastructure improvement (53.1 km main canals; reservoir, 59.6 km distributaries and 22 nos of minor canal systems), and WUA CAD and agriculture support
Mahanadi Chitrotpala (MCII)	Mahanadi delta	<u>Objective</u> : Extension of the ayacut by 5930 ha for completed scheme to achieve full potential (13,300ha). <u>Main scope</u> : Strengthening 31 WUAs; resettlement plan implementation before commencing.
3 Medium Schemes		
Kansabahal	Brahmani	<u>Objective</u> : Renovation and modernization CCA = 4730 ha; <u>Main Scope</u> : Formation and Strengthening of 9 WUAs; infrastructure improvement (63.3 km distributaries and 66 km minor canal systems), and WUA CAD and agriculture support.
Ramial	Brahmani	<u>Objective</u> : Renovation and modernization CCA = 6128 ha; <u>Main Scope</u> : Formation and strengthening of 15 WUAs;, infrastructure improvement (63.2 km distributaries and 55.06 km minor canal systems), and WUA CAD and agriculture support.
Kanjhari	Baitarani	<u>Objective</u> : Renovation and modernization CCA = 9,740ha; <u>Main Scope</u> : Strengthening of 22 WUAs;, infrastructure improvement (36.2 km main canals; 7.1 km distributaries and 126.1 km minor canal systems), and WUA CAD and agriculture support.

B. Outputs

The outputs of the Project are (i) state and water user institutions strengthened for water resources and irrigation management; (ii) irrigation system infrastructure modernized and managed and (iii) project management systems effective.

1. Output 1: State and Water user Institutions Strengthened for Water Resources and Irrigation Management

4. This component will strengthen institutional capacities of the Department of Water Resources (DOWR) to integrated water resources management and to participatory irrigation management (PIM) by strengthening water user associations (WUAs or Pani Panchayats) in selected river basins. This will include: (i) development and implementation of the state endorsed river basin plan and systems for the Baitarani basin to better manage water resources utilization; (ii) collective actions for and re-election of 127 out of 169 WUAs (about 75%) and (iii) with 33% of WUA executive committee members being women. The activities to be undertaken are detailed in the sector road map and the program design and monitoring framework (DMF) in Appendix 1.

2. Output 2: Irrigation System Infrastructure Modernized and Managed

i. Irrigation and Associated Infrastructure

5. The OIIAWMIP will renovate and extend infrastructure⁴ — in 4 Major and 3 Medium irrigation schemes-including repairs of reservoirs, renovation of head and cross regulators, canals, and ancillary facilities; and minor drainage works — along with the community-based 750 minor lift irrigation (MLI) facilities. Major and medium schemes 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. WUAs will be involved in the implementation of the minor works within their constituencies. In addition, the project will undertake emergency restoration of 12 segments of saline embankments stretching over 98 km in 4 coastal divisions

⁴ All schemes need to renovate the existing infrastructure, except for one major scheme, Mahanadi Chitrotpala 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.

(Aul, Puri, Khurda and Nimapara) to provide protection for agricultural lands and infrastructure from saline water flooding and storm surges.

6. The OIIAWMIP will emphasize the expansion of field channel systems (CAD facilities) and the strengthening of WUA capacities for on-farm water management as essential conditions to attain high water-use efficiency, intensification and diversification of cropping. The concerned WUAs will implement the CAD facilities with specific plans for this initiative being detailed in the WUA/PP Micro-Plans which are to be prepared as part of Output 1. Conjunctive use of groundwater will be promoted for dry season cropping by the improved and expanded field channel systems, as well as with the use of 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

ii. Agriculture and Horticulture Development.

7. 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 extension professionals who will form regular links with the relevant institutions.⁷

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.

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.

iii. Livelihood Enhancement Support.

8. 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.

iv. Sustainable Operation and Maintenance System

⁹ (a) **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

10. (b) **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. Guidelines for O&M performance monitoring, planning, and fund allocation will be established to

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.

guide the process, 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.

3. Output 3: Project Management Systems Effective

11. This subcomponent will operate the program management system through a multidisciplinary project management unit (PMU) and subproject implementation offices (SIOs) 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 along with a web based management information system (MIS) to provide a platform for operational management controls and ME functions by expanding existing design at PMU as a "model" module" for enterprise-wise adaptation. The project-specific web based 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. Project-1

12. 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 was for a total amount of \$46.5 million of which \$16.5 million was from ADB financing and \$30 million from Opec Fund for International Development (OFID).

D. Project-2

13 The Project–2 of OIIAWMIP will sustain food security by increased productivity and sustainability of irrigated agriculture in four major and three medium existing irrigation schemes, 750 existing minor lift irrigation schemes and improved water resources management and emergency restoration of 12 segments of saline embankments damaged during cyclone Phailin. The design and monitoring framework is given in Appendix 1

Appendix 1

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/ Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks	
Impact Food security is sustained in selected river basins in Odisha	Total food grain production increases from 0.17 t per capita (in FY 2009) at an annual average rate of 2.5% to 0.22 t per capita (in FY 2022) Gross state domestic	State Economic Survey (FY 2022) Department of	Assumptions Stable political and local security conditions Damage from natural calamities are rehabilitated and managed	
	product of agriculture increases at an annual average rate of 5% from \$2.7 billion (in FY 2009) to \$4.9 billion (in FY 2022) in real terms	Agriculture annual report	Risk International terms of trade of agriculture products becomes adverse	
Outcome Increased productivity of irrigated agriculture in selected river basins in Odisha	Increased cropping intensity from 140% in FY 2009 to 169% in FY 2019	Department of Agriculture annual report Department of	Assumption Continued political and community and stakeholder support to sustain and proceed with reforms	
	Increased production of high-yielding varieties rice from 2.2 t/ha (in FY2009) to 3.5 t/ha by FY 2019	Agriculture annual report	Risks Climate change risk exceeds projections	
Outputs State and water user institutions strengthened for water resources and irrigation management 	By 2018 Systems for quantitative water use in the Baitarani river basin are established	State government order	Assumptions Central government programs remain complimentary to core project activities like CAD	
	PP rules updated and 75% of at least 169 WUAs are re-elected with 33% women's representation in the executive committee by 2018 (baseline: 0%)	CAD-PIM directorate annual report		
2. Irrigation system infrastructure modernized and managed	By 2018 4 major and 3 medium irrigation systems' infrastructure is upgraded	Contractor's completion certificates		
	50% of the total 81,470 ha command area has upgraded on-farm distribution system (baseline = 0 ha)	CAD-PIM Directorate annual report		

	Desig	gn Summary	Performance Targets/ Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
			4 system asset management plans for irrigation schemes endorsed and implemented by DOWR (baseline = 0)	CAD-PIM Directorate annual report	
			169 WUA in 7 sub-projects prepare O&M of irrigation system plans (Target: 33% women included in training)	CAD-PIM Directorate annual report	
3.	Projec systen	t management ns effective	Project outputs delivered on time and within budget MIS established by 2016	Quarterly disbursement and contract award projections and financial and annual reports prepared by DOWR	
Ac	tivities	s with Milestone	S		Inputs
1.	State	and water user i	nstitutions strengthened for wa	ter resources and	
	1.1 1.2	Draft vision and s Undertake asses developing water	t strategy for change management p sments and review lessons learne policy (Sept 2014- Sept 2015)	prepared (Feb – Dec 2014) ad from other experiences in	Government of Odisha: \$37.78 million Beneficiaries: \$3.86 million
	1.3	169 WUAs under	Tranche 2 subprojects form sub-	committees for planning,	Total: \$171.64 million
	1.4	Develop Baitarar	ni river basin management plan with 2015 - Sept 2016)	th stakeholder participation	
	1.5	Hold elections 16	39 WUAs on Tranche 2 subproject	s (Mar 2015 -Sept 2017)	
2.	Irriga 1.6	tion system infra Commence civil	structure modernised and mana works procurement for first 11 (out	aged t of 42) packages for main	
	1.0	and distribution of	anals (Jan 2014–Apr 2015)	(of 12) publicages for main	
	1.7	Commence civil	works procurement for 31 out of 42	2 packages for main and	
	1.8	Commence civil Dec 2015)	works procurement for 20 minor ca	anal packages (Apr 2015 –	
	1.9	Commence civil	works implementation of 11 (out o	f 42) packages(Apr 2015–	
	1.10	Commence civil	works implementation of 31 (out of distribution and minor packages (of 42) packages of Dec 2015–Apr 2016)	
	1.11	Commence imple MLIP, batch III of	ementation of batch I of 250 out of 250 (Sep 2015– Sept 2017)	750 MLIP, batch II of 250	
	1.12	Commence imple	ementation of sub-minor canals (J	an 2016–Jun 2018)	
	1.13 1.14	Complete civil w	r Tranche 2 subprojects (Jun 2017 orks for Tranche 2 irrigation and m	-Jun 2018) inor lift irrigation	
		subprojects com	olete (Jun 2018)		
3.	Proje	ct management s	systems operational		
		1.15 C Se	omplete recruitment of social mob ept 2015)	ilization staff (May 2015 –	
		1.16 Im 20	plement resettlement plans for 3 : 016)	subprojects (Jun 2015–Jun	
		1.17 R lift	ecruit consulting services for consi irrigation project and IWBM (May	truction supervision, minor	
		1.18 E	stablish MIS for Project 2 (Sept 20	15–Jun 2017)	
		1.19 Pi 2(epare project completion report fo 118)	or Tranche 2 (Jul–Aug	

ADB = Asian Development Bank, CAD = command area development, DOWR = Department of Water Resources, FY = fiscal year, ha = hectare, IWRM = integrated water resources management, MIS = management information system, O&M = operation and maintenance, PIM = participatory irrigation management, PP = pani panchayat, PPMS = project performance management system, t = ton, WUA = water user association. Source of Data: CCA/Ayacut areas (ha)

Annex 2

E. Detailed Cost Estimates by Financier for Project-2 (\$ '000)

-	ADB	•	Govt.		Beneficiaries		Total	
(US\$ '000)	Amount	%	Amount	%	Amount	%	Amount	%
Investment Costs								
Civil Works								
Major and Medium Schemes	54,982	83.5	10,865	17	-	-	65,846	100.0
Command Area Development	667	7.7	7,117	82.3	865	10.0	8,648	100.0
Minor Lift Schemes	3,052	70.0	436	10.0	872	20.0	4,360	100.0
Land Acquisition and Resettlement	-	-	510	100.0	-	-	510	100.0
Emergency Restoration Works	12,765	83.5	2,523	16.5			15,288	100.0
Subtotal	71,466	75.5	21,450	22.7	1,737	1.8	94,653	100.0
Equipment	-		-		-			
Equipment	95	100.0	-	-	-	-	95	100.0
Minor Lift Equipment	5,936	68.0	1,090	12.5	1,697	19.5	8,723	100.0
Subtotal	6,030	68.4	1,090	12.4	1,697	19.2	8,817	100.0
Specialist Services	-		-		-			
PP Strengthening Services	4,122	90.7	348	7.6	78	1.7	4,547	100.0
TA Consultants	17,788	87.5	2,541	12.5	-	-	20,329	100.0
Studies	546	87.5	78	12.5	-	-	624	100.0
Survey and Investigation	1,495	70.0	641	30.0	-	-	2,136	100.0
Subtotal	23,952	86.7	3,608	13.1	78	0.3	27,637	100.0
Training								
Irrigation Management Training	6,785	95.3	331	4.7	-	-	7,117	100.0
Agriculture and Livelihood Training	4,616	98.0	94	2.0	-	-	4,710	100.0
Subtotal	11,401	96.4	426	3.6	-	-	11,827	100.0
Total Investment Costs	112,849	79.0	26,573	18.6	3,511	2.5	142,934	100.0
Recurrent Costs								
Operational Costs	6,993	51.9	6,471	48.1	-	-	13,464	100.0
Total Recurrent Costs	6,993	51.9	6,471	48.1	-	-	13,464	100.0
BASELINE PROJECT COSTS	119,842	76.6	33,044	21.1	3,511	2.2	156,398	100.0
Contingencies	10,158	78.1	2,493	19.2	351	2.7	13,001	100.0
TOTAL PROJECT COST	130,000	76.7	35,537	21.0	3,862	2.3	169,399	100.0
Interest During Implementation	-	-	1,828	100.0	-	-	1,828	100.0
Commitment Charges	-	-	412	100.0	-	-	412	100.0
TOTAL DISBURSEMENT	130,000	75.7	37,777	22.0	3,862	2.3	171,639	100.0

F. Detailed Cost Estimates by Outputs/Components for Project-2 (\$ '000)

(US\$ '000)	State & Water User Institution Strengthening	Irrigation System Infrastructure & Management Modernised	Project Management Systems	Total
Investment Costs	<u></u>			
Civil Works				
Major and Medium Schemes	-	65,846	-	65,846
Command Area Development	-	8,648	-	8,648
Minor Lift Schemes	-	4,360	-	4,360
Land Acquisition and Resettlement	-	510	-	510
Emergency Restoration Works		15,288		15,288
Subtotal	-	94,653	-	94,653
Equipment				
Equipment	-	95	-	95
Minor Lift Equipment		8,723		8,723
Subtotal	-	8,817	-	8,817
Specialist Services				
PP Strengthening Services	-	4,547	-	4, 547
TA Consultants	-	-	20,329	20,329
Studies	624	-	-	624
Survey and Investigation		2,136		2,136
Subtotal	624	6,684	20,329	27,637
Training				
Irrigation Management Training	2,362	4,754	-	7,117
Agriculture and Livelihood Training	-	4,,710		4,710
Subtotal	2,362	9,465		11,827
Total Investment Costs	2,986	119,618	20,329	142,934
Recurrent Costs				
Operational Costs	-		13,464	13,464
Total Recurrent Costs	-		13,464	13,464
Total BASELINE COSTS	2,986	119,618	33,793	156,398
Physical Contingencies	62	4,005	2,514	6,581
Price Contingencies	114	4,891	1,415	6,420
Total PROJECT COSTS	3,163	128,514	37,722	169,399
Interest During Implementation				1,828
Commitment Charges				412
				171,639
Taxes	104	6,680	3,028	9,812
Foreign Exchange	1,637	-	-	1,637

G. Detailed Cost Estimates by Year for Project-2 (\$ '000)

		Base Cost			
	2015	2016	2017	2018	Total
(US\$ '000)					
Investment Costs					
Civil Works					
Major and Medium Schemes	17,155	17,226	17,404	14,062	65,846
Command Area Development	1,924	2,400	2,400	1,924	8,648
Minor Lift Schemes	1,163	1,163	1,163	872	4,360
Land Acquisition and Resettlement	510	-	-	-	510
Emergency Restoration Works	4,368	7,462	3,458	-	15,288
Subtotal	25,119	28,251	24,424	16,858	94,653
Equipment					
Equipment	95	-	-	-	95
Minor Lift Equipment	-	2,908	2,908	2,908	8,723
Subtotal	95	2,908	2,908	2,908	8,817
Specialist Services					
PP Strengthening Services	1,275	1,251	1,045	977	4,547
TA Consultants	5,468	7,195	4,642	3,025	20,329
Studies	312	312	-	-	624
Survey and Investigation	911	828	199	199	2,136
Subtotal	7,966	9,586	5,885	4,200	27,637
Training					
Irrigation Management Training	1,865	1,873	1,760	1,619	7,117
Agriculture and Livelihood Training	3,514	457	370	370	4,710
Subtotal	5,379	2,330	2,129	1,989	11,827
Total Investment Costs	38,559	43,074	35,346	25,955	142,934
Recurrent Costs	,	,	,	,	,
Operational Costs	3,600	3,374	3,368	3,122	13,464
Total Recurrent Costs	3,600	3.374	3,368	3,122	13,464
Total BASELINE COSTS	42,159	46,448	38,715	29.077	156.398
Physical Contingencies	1,595	2,108	1.625	1.253	6.581
Price Contingencies	481	1.564	2,133	2.242	6.420
Total PROJECT COSTS	44.235	50.120	42,472	32,572	169.399
Taxes	2,318	3,141	2,479	1,875	9,812
Foreign Exchange	397	405	413	422	1,637

ANNEX 3

PROCUREMENT PLAN (PROJECT 2)

Basic Data					
Project Name: Orissa Integrated Irrigated Agriculture and Water Management Investment Program - Project 2					
Project Number: 38411-043	Approval Number:				
Country: India	Executing Agency: Water Resources Department.				
	Government of Odisha				
Project Financing Amount: US\$ 171,640,000	Implementing Agency:				
ADB Financing: US\$ 130,000,000	N/A				
Cofinancing (ADB Administered):					
Non-ADB Financing: US\$ 41,660,000					
Date of First Procurement Plan: 24 February 2015	Date of this Procurement Plan: 24 February 2015				

A. Methods, Thresholds, Review and 18-Month Procurement Plan

1. Procurement and Consulting Methods and Thresholds

Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works					
Method	Threshold	Comments			
International Competitive Bidding for Goods	US\$ 3,000,000 and Above				
National Competitive Bidding for Goods	Between US\$ 100,001 and US\$ 2,999,999	The first NCB is subject to prior review, thereafter post review.			
Shopping for Goods	Up to US\$ 100,000				
International Competitive Bidding for Works	US\$ 40,000,000 and Above				
National Competitive Bidding for Works	Between US\$ 100,001 and US\$ 39,999,999	The first NCB is subject to prior review, thereafter post review.			
Shopping for Works	Up to US\$ 100,000				
Community Participation in Procurement for Works	Up to US\$ 10,000				

Consulting Services				
Method	Comments			
Consultant's Qualification Selection for Consulting Firm				
Fixed Budget Selection for Consulting Firm				
Least-Cost Selection for Consulting Firm				
Quality- and Cost-Based Selection for Consulting Firm				
Quality-Based Selection for Consulting Firm				
Individual Consultants Selection for Individual Consultant				

2. Goods and Works Contracts Estimated to Cost \$1 Million or More

The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Procurement Method	Review (Prior/ Post)	Bidding Procedure	Advertisement Date (quarter/vear)	Comments
CW-NCB- AED-03	Restoration of existing Khairinashi Saline Embankment from RD 00m to 5.654 Km in Mahakalapada block, Kendrapara district.	1,700,000.00	NCB	Prior	1S2E	Q1 / 2014	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- AED-05	Restoration of existing Garadpur Iswarpur Saline embankment from RD 00 to 14.00 Km in Rajkanika Block, Kendrapara District.	1,858,000.00	NCB	Prior	1S2E	Q1 / 2014	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- HLC-2	REM of main canal including lining (10.410.km to 26.585 km) and renovation and construction of associated structures	1,027,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- HLC-3	REM of main canal including lining (26.585.km to 41.072 km) and renovation and construction of associated structures	1,167,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- KAN-1	REM of left main canal, from RD 5.67 km to Tail, selective lining and provision of system control and other structures.	1,067,000.00	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- KAN-2	REM of left main canal from RD 0 km to 5.67 km, right main canal, selective lining and provision of system control and other structures.	1,100,000.00	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- KHD-02	Restoration to existing Saline gherry from Khairabandha to Chandraput in Chilika block, Khurda district.	1,006,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- KNJ-1	REM of left main canal, selective lining including improvement/ modernisation of associated structures of Kanjhari irrigation system.	1,580,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- KNJ-2	REM of right main canal, selective lining including improvement/ modernisation of associated structures of Kanjhari irrigation system.	1,490,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- MAC-1	REM of Machhagaon main canal including lining (0.0 km to 14.60 km) and renovation and construction	1,355,000.00	NCB	Prior	1S2E	Q4 / 2014	Prequalification of Bidders: N Bidding Document:
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	associated structures						Small Works
CW-NCB- MAC-2	REM of Machhagaon main canal including lining (14.60 km to	1,280,000.00	NCB	Prior	1S2E	Q4 / 2014	Prequalification of Bidders: N
	renovation and construction of associated structures						Bidding Document: Small Works
CW-NCB- MAC-3	REM of Machhagaon main canal including lining (29.20 km to	1,498,000.00	NCB	Prior	1S2E	Q4 / 2014	Prequalification of Bidders: N
	52.425 km) and renovation and construction of associated structures						Bidding Document: Small Works
CW-NCB- NID-02	Restoration of existing Serei- Bandala Saline embankment from RD 00 to 3.50 km in	1,322,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Astaranga block, Puri						Small Works
CW-NCB- NID-03	Restoration of existing Jharling Belanga Saline embankment from RD	1,801,000.00	NCB	Prior	1S2E	Q1 / 2014	Prequalification of Bidders: N
	22.00 to 29.100 Km in Astaranga block, Puri District.						Bidding Document: Small Works
CW-NCB- PAT-2	REM of Pattamundai main canal including lining (9.25.km to 15.077 km) and	1,003,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	renovation and construction of associated structures						Bidding Document: Small Works
CW-NCB- PAT-3	REM of Pattamundai main canal including lining (15.077.km to 23.024 km) and	1,084,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	renovation and construction of associated structures						Bidding Document: Small Works
CW-NCB- PAT-6	REM of Pattamundai main canal including lining (RD 37.940 km to	1,166,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	renovation and construction of associated structures						Bidding Document: Small Works
CW-NCB- PAT-7	REM of Pattamundai main canal including lining (RD 46.60 km to	1,053,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	54.033 km) and renovation and construction of associated structures						Bidding Document: Small Works
CW-NCB- PAT-14	REM of Distributaries canals D-8 (RD 0.00 to 2.00 Km) & D-11 of	1,167,000.00	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N
	Pattamundai Canal including structures, selective lining and repair						Bidding Document: Small Works
	to canal embankment roads.						

CW-NCB- PAT-15	REM of Distributaries canals D-8 (RD 2.00 to 19.8 Km) & D-11 of Pattamundai Canal including structures, selective lining and repair to canal embankment roads.	1,043,000.00	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- PAT-16	REM of Distributaries canals D-12 & D-15 of Pattamundai Canal including structures, selective lining and repair to canal embankment roads.	1,015,000.00	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
MIS-1 to MIS-2	Procurement of equipments for Implementation of MIS	3,167,000.00	NCB	Prior	1S1E	Q3 / 2015	Prequalification of Bidders: N Bidding Document: Goods
MLI-1 to MLI-14	Procurement of lift irrigation equipment including pump sets & distribution pipes	8,387,000.00	NCB	Prior	1S1E	Q3 / 2015	Prequalification of Bidders: N Bidding Document: Goods

3. Consulting Services Contracts Estimated to Cost \$100,000 or More

The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior/ Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
CS-1	Construction Management & Supervision	2,365,000.00	QCBS	Prior	Q1 / 2014	FTP	Assignment: National
	Consultancy services						Quality-Cost Ratio: 90:10
							Comments: as per revised guidelines, standard quality- cost ratio should be 90:10
CS-2	Minor lift irrigation implementation support services	3,178,000.00	CQS	Prior	Q1 / 2015	STP	Assignment: National
CS-3	MIS Development & Implementation Services	8,568,000.00	QCBS	Prior	Q1 / 2015	FTP	Assignment: National
							Quality-Cost Ratio: 90:10
							Comments: as per revised guidelines, standard quality- cost ratio should be 90:10
CS-4	IWRM Consulting Services (4 Individuals)	1,200,000.00	ICS	Prior	Q1 / 2015		Assignment: International Expertise: integerated water resources

							management Comments: 1 international expert and 3 national experts
CS-5	PP Strengthening Services-Junior level Support Services Team	22,11,886.00	QBS	Prior	Q1 / 2015	STP	Assignment: National Comments: as per revised guidelines.
CS-7	PP Strengthening - Accounting Support Services	1,53,808.00	CQS	Prior	Q1 / 2015	STP	Assignment: National Comments: as per revised guidelines.

4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

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				-		r		
Package Number	General Description	Estimated Value	Number of Contracts	Procurem ent Method	(Prior/ Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
CW-NCB- AED-04	Restoration of existing Sunity Saline Embankment from RD 5.080 Km to	893,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- AED-06	Restoration to existing bank protection work (adjacent to Road) from RD 0.240 Km to 0.612 Km at Gualigaon in Rajkanika block, Kendrapara District.	642,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- HLC-1	REM of main canal including lining (0.00.km to 10.410 km) and renovation and construction of associated structures	908,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- HLC-4	REM of Distributaries No-1 of HLC Range-I Canal including structures, selective lining and repair to canal embankment roads.	717,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- HLC-5	REM of Distributaries No-6 and 7 1/4 of HLC Range-I Canal including structures, selective lining and repair to canal embankment roads.	667,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works

CW-NCB- HLC-6	REM of Distributaries No-9 and 14 of HLC	683,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N
	Range-I Canal including structures, selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- HLC-7	REM of minor canals of HLC Range-I canal system including improvement/ modernisation of structures and selective lining	580,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- HLC-8	REM of minor canals of HLC Range-I canal system including improvement/ modernisation of structures and selective lining.	585,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- HLC-9	REM of minor canals of HLC Range-I canal system including improvement/ modernisation of structures and selective lining.	555,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- KAN-3	REM of minor canals of Kansabahal irrigation sub-project including improvement/ modernisation of structures.	600,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- KHD-01	Restoration to existing Saline Gherry Block-III from RD 1.80 Km to RD 7.80 Km at Bhusundapur in Tangi Block, Khurda district.	701,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- KNJ-3	REM of minor canals of Kanjhari irrigation sub-project including improvement/ modernisation of associated structures of Kanjhari irrigation system.	920,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- MAC-4	REM of Distributaries No 2, 19, and Bhagalpur Distributaries canals of Machhagaon Canal including structures, selective lining and repair to canal embankment roads.	765,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works

CW-NCB- MAC-5	REM of Distributaries No. 7	787,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	and 19A of Machhagaon Canal including structures, selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- MAC-6	REM of Distributaries No 8	902,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	10 and 10H of Machhagaon Canal including structures, selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- MAC-7	REM of Distributaries No.	947,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	16,13,13C,15,15A of Machhagaon Canal including structures, selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- MAC-8	REM of minor canals of	585,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N
	Machhagaon canal system including structures, selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- MAC-9	REM of minor canals of	580,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N
	Machhagaon canal system including structures, selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- MAC-10	REM of minor canals of	600,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N
	Machhagaon canal system including structures, selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- MAC-11	REM of minor canals of	590,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N
	system including structures, selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- MAC-12	REM of minor canals of	620,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N
	Macnnagaon canal system including structures, selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- MCI-1	Construction of CRBC (15.20 km to	717,700.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N
	18015 km) and				1			Bidding

	construction of associated structures							Document: Small Works
CW-NCB- MCI-2	Construction of CRBC (18.015 km to 20.875 km) and construction of associated structures	729,100.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- MCI-3	Construction of CRBC (20.875 km to 23.490 km) and construction of associated structures	666,700.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- MCI-4	Construction of CRBC (23.490 km to 27.140 km) and construction of associated structures	930,500.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- MCI-5	Construction of PLBC (15 km to 20.25 km) and construction of associated structures	765,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- MCI-6	Construction of PLBC (20.25 km to 25.18 km) and construction of associated structures	878,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- MCI-7	Construction of Minor and Sub- minor canals of CRBC (7.00 km to 15.20 km) and construction of associated structures	834,700.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- MCI-8	Construction of Minor and Sub- minor canals of CRBC (15.20 km to 21.44 km) and construction of associated structures	625,400.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- MCI-9	Construction of Minor and Sub- minor canals of CRBC (21.44 km to 27.14 km) and construction of associated structures	614,900.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- MCI-10	Construction of Minor and Sub- minor canals of PLBC (0.km to 15.00 km) and construction of associated structures	629,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Bidding Document: Small Works

CW-NCB- MCI-11	Construction of Minor and Sub- minor canals of	471,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N
	PLBC (15.00.km to 25.18 km) and construction of associated							Bidding Document: Small Works
	DEM of	041 000 00	1	NCR	Prior	1925	01/2015	Proqualification of
PAT-1	Pattamundai main canal including lining (00 km to 9.25 km) and	941,000.00	I	NCB	Prior	152E	Q172015	Bidding
	renovation and construction of associated structures						-	Works
CW-NCB- PAT-04	Rehabilitation,Extensio n and modernization of Main Canal of	955,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	System From RD 23.024 Km to 28.851 Km including all structures.							Bidding Document: Small Works
CW-NCB- PAT-05	Rehabilitation,Exten sion and	977,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	modernization of Main Canal of Pattamundai Canal							Bidding Document: Small Works
	System From RD 28.851 Km to 37.940 Km							WORS
	structures.							
CW-NCB- PAT-08	Rehabilitation,Extensio n and modernization of Main Canal of	997,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Pattamundai Canal System From RD 54.033 Km to 61.045 Km including all							Bidding Document: Small Works
CW-NCB- PAT-09	Rehabilitation,Extensio n and modernization of	836,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Main Canal of Pattamundai Canal System From RD							Bidding
	61.045 Km to 65.540 Km including all structures.							Works
CW-NCB- PAT-10	Rehabilitation,Extensio n and modernization of Main Canal of	892,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Pattamundai Canal System From RD 65.540 Km to 69.500							Bidding Document: Small Works
	structures.							
CW-NCB- PAT-11	Rehabilitation,Extensio n and modernization of Main Canal of	838,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Pattamundai Canal System From RD 69.500 Km to 75.720 Km including all							Bidding Document: Small Works
	Structures.							

CW-NCB- PAT-12	Rehabilitation,Extensio n and modernization of Main Canal of	886,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Pattamundai Canal System From RD 75.720 Km to 80.500 Km including all structures.							Bidding Document: Small Works
CW-NCB- PAT-13	REM of Distributaries canals D-2 and D-7 of Pattamundai Canal	915,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N
	including structures, selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- PAT-17	REM of Distributaries canals D-16 of Pattamundai Canal including structures.	872,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N
	selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- PAT-18	REM of Distributaries canals of Gobari Extension from RD 0.00 to 3.9 Km of	720,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N
	Pattamundai Canal including structures, selective lining and repair to canal embankment roads							Document: Small Works
CW-NCB- PAT-19	REM of Distributaries canals of Gobari Extension from RD 3.9	743,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N
	Pattamundai Canal including structures, selective lining and repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- PAT-20	REM of minor canals between of Pattamundai Canal canal system	580,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N
	including improvement/ modernisation of structures.							Document: Small Works
CW-NCB- PAT-21	REM of minor canals between of Pattamundai Canal canal system	520,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N
	including improvement/ modernisation of structures.							Document: Small Works
CW-NCB- PAT-22	REM of minor canals between of	550,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N
	Pattamundai Canal canal system including improvement/ modernisation of structures.							Bidding Document: Small Works

CW-NCB- PAT-23	REM of minor canals between of Pattamundai Canal canal system including	560,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Bidding
	improvement/ modernisation of structures.							Document: Small Works
CW-NCB- PAT-24	REM of minor canals between of Pattamundai Canal canal system including improvement/ modernisation of structures.	540,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- PID-01	Restoration to existing Paikarapur Saline Gherry from RD 00 to 12.80 Km in Krushnaprasad block, Puri District.	989,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- PID-02	Restoration to existing Krushnaprasad Saline Gherry from RD 5.80 to 30.27 Km in Krushnaprasad block, Puri District.	831,000.00	1	NCB	Prior	1S2E	Q1 / 2014	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- PID-05	Restoration to existing Titipo Saline Gherry from RD 00 TO 7.10 Km in Krushnaprasad block, Puri District.	983,000.00	1	NCB	Prior	1S2E	Q1 / 2014	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- PID-06	Restoration to existing Nuapada Saline Gherry from RD 00 Km to 4.80 Km in Krushnaprasad Block, Puri District.	647,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- RML-1	REM of left main canal, selective lining including improvement/ modernisation of structures. (RD 00 to 10 km)	912,000.00	1	NCB	Prior	1S2E	Q2 / 2014	Prequalification of Bidders: N Bidding Document: Small Works Comments: Financial bid opening
CW-NCB- RML-2	REM of left main canal, selective lining including improvement/ modernisation of structures. (RD 10km to tail)	930,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- RML-3	REM of right main canal, selective lining and Batagaon Distributaries canals of Ramiala irrigation sub-project including structures.	1,097,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works

CW-NCB- RML-4	REM of Khajuria, Kanpura and Kandhara Distributaries canals of Ramiala irrigation sub-project including structures.	1,080,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
CW-NCB- RML-5	REM of minor canals of Ramial irrigation sub-project including improvement/ modernisation of structures.	420,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Bidding Document: Small Works
DoWR- Computer & Audiovisua I- Various	Purchase of Computer and Audiovisual equipment for PP strengthening	91,000.00	3	SHOPPIN G	Prior		Q2 / 2015	Prequalification of Bidders: N
DoWR- Various	Office refurbishment & extension of DOWR	50,000.00	10	SHOPPIN G	Prior		Q2 / 2015	Prequalification of Bidders: N
MLI- Various	Installment of pump sets and pipe systems and other minor works	4,167,000.00	750	SHOPPIN G	Prior		Q4 / 2015	Prequalification of Bidders: N Comments: Procurement Method should be Community Participation
Various (130) (constructi on of Sub- minors of Kansabah al	Construction of Sub- minor canals and associated structures of Kansabahal irrigation system.	79,000.00	130	G G	Prior		Q4 / 2015	Prequalification of Bidders: N
Various (270) (constructi on of Sub- minors of HLC R	Construction of Sub- minor canals and associated structures of HLC Range-I system	2,060,000.00	270	SHOPPIN G	Prior		Q4 / 2015	Prequalification of Bidders: N
Various (347) (constructi on of Sub- minors of Machhaga on	Construction of Sub- minor canals and associated structures of Machhagaon system.	2,918,000.00	347	SHOPPIN G	Prior		Q4 / 2015	Prequalification of Bidders: N
Various (410) (constructi on of Sub- minors of Patta	Construction of Sub- minor canals and associated structures of Pattamundai canal system.	3,262,000.00	410	SHOPPIN G	Prior		Q4 / 2015	Prequalification of Bidders: N
Various (65) (constructi on of Sub- minors of Kanjhari	Construction of Sub- minor canals and associated structures of Kanjhari irrigation system.	481,000.00	65	SHOPPIN G	Prior		Q4 / 2015	Prequalification of Bidders: N
Various (98) (constructi on of Sub- minors of Ramial	Construction of Sub- minor canals and associated structures of Ramial irrigation system.	687,000.00	98	SHOPPIN G	Prior		Q4 / 2015	Prequalification of Bidders: N

Consulting Se	ervices							
Package Number	General Description	Estimated Value	Number of Contracts	Recruitment Method	Review (Prior/ Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
CS-6	PP Strengthening Services-Senior level Consultants	5,32,019.00	14	ICS	Prior	Q1 / 2015		Assignment: National
								Comments: as per revised guidelines.
CS-8	Accountancy Support Services (3 Individuals)	8,000.00	3	ICS	Prior	Q1 / 2015		Assignment: National
								Expertise: financial management and accountancy
CS-9 to CS- 13	CSO for RP implementation	476,500.00	5	SSS	Prior	Q2 / 2015		Assignment: National

DESIGN AND MONITORING FRAMEWORK: PROJECT 2

Impacts the Project is aligned with:

Economic growth, including agricultural growth, in Odisha is sustainable, broad-based and more inclusive (12th Five-Year Plan: 2012-2017*).

Project Results Chain	Performance Indicators with Targets and Baselines	Data Sources or Reporting Mechanisms	Risks
Outcome Productivity of agriculture in selected river basins in Odisha increased.	By 2019, a. Cropping intensity increased to 180% (FY2014 baseline: 160%) b. Production of high- yielding rice varieties increased to 3.8 t/ha (FY2014 baseline: 2.8 t/ha)	Department of Agriculture annual report	Projections of climate change parameters do not accurately represent actual climate-related hazards.
Outputs 1. Water resources and irrigation management of state and water user institutions strengthened	By September 2018, 1a. Systems for quantitative water use in the Baitarani river basin established (2015 baseline: 0)	1a. State government order	Political, community and stakeholder support to proceed with reforms may not be sustained.
strengthened.	1b. PP rules of 2003 updated (baseline: not applicable)	1b. CAD-PIM directorate annual report	
	1c. Elections held in at least 75% of 169 participating WUAs, and 33% of executive committees are female (2015 baseline: 0)	1c. CAD-PIM directorate annual report	
2. Irrigation system and associated infrastructure modernized and managed.	(2015 baselines: 0) By September 2018, 2a. 7 irrigation systems' infrastructure upgraded	2a, e. Contractor's completion certificates	
	ha command area has upgraded on-farm distribution system	Directorate annual report	
	2c. Asset management plans for 7 irrigation subprojects endorsed and implemented by DOWR		
	2d. 169 WUAs prepare and implement O&M plans, with 33% women included in training		
	2e, 57 km of coastal		

Key Activities with Milestones									
 Dutput 1: Water resources and irrigation management of state and water user institutions strengthened 1.1 Draft vision and strategy for change management prepared (Feb – Dec 2014) 1.2 Undertake assessments and review lessons learned from other experiences in developing water policy (Sep 2014–Sep 2015) 1.3 169 WUAs under Tranche 2 subprojects form sub-committees for planning, works, water management and audit (Jan 2016 – Dec 2017) 1.4 Develop Baitarani river basin management plan with stakeholder participation (completed by Feb 2015–Sept 2016) 4.5 Undertake audit (Jan 2016 – Dec 2017) 									
1.5 Hold elections for T69 WUAS Tranche 2 subprojects (March 2015–Sep 2017)									
 Output 2: Irrigation system and associated infrastructure modernized and managed 2.1 Commence civil works for first 34 (out of 79) packages for main and distribution canals (Jan 2014–July 2015) 2.2 Commence civil works for 25 out of 79 packages for main and distribution canals (Apr–Dec 2015) 2.3 Commence civil works for 20 minor canal packages(Apr 2015–Dec 2015) 2.4 Commence civil works implementation of 15(out of 79) packages for main and distribution canals (Apr 2015–Jun 2015) 2.5 Commence civil works for 64 out of 79 packages for main and distribution canals (Dec 2015-Apr 2016) 									
 2.6 Commence implementation of batch I of 250 out of 750 MLIP, batch II of 250 MLIP, batch III of 250 (Sep 2015-Sep 2017) 2.7 Commence implementation of sub-minor canals (Jan 2016-Jun2018) 2.8 Transfer O&M to WUAs (Jun 2017–Jun 2018) 2.9 Complete civil works for Tranche 2 irrigation and minor lift irrigation subprojects complete (Jun2018) Restore embankments (Dec 2015–Jun 2017) 									
Project Management Activities Complete recruitment of construction supervision consultants (Sep 2015). Implement resettlement plans for 3 subprojects (Jun 2015-Jun 2016) Recruit consulting services for construction supervision, minor lift irrigation project and IWRM (May 2014- Jun 2015) Establish MIS (Sept 2015-Jun 2017) Prepare project completion report for (Jul-Aug 2018) Inputs									
ADB: \$120 million Government of Odisha: \$47.78 million									
Assumptions for Partner Financing Not Applicable									

ADB = Asian Development Bank, CAD = command area development, DOWR = Department of Water Resources, FY = fiscal year, ha = hectare, IWRM = integrated water resources management, MIS = management information system, O&M = operation and maintenance, PIM = participatory irrigation management, PP = pani panchayat, PPMS = project performance management system, t = ton, WUA = water user association.

* Odisha Five-Year Plan 2012-2017, Planning and Co-ordination Department, Government of Odisha Source: Asian Development Bank.

Facility Administration Memorandum

Project Number: 38411 Loan and/or Grant Number(s): MFF0022, Loan 2444, Loan xxxx Updated – June 2015

Multitranche Financing Facility India: Orissa Integrated Irrigated Agriculture and Water Management Investment Program (Facility Concept and Projects 1 and 2)

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Project Administration Manual Purpose and Process

The facility administration memorandum (FAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the FAM.

The Department of Water Resources of the State Government of Odisha is wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by Department of Water Resources of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At Loan Negotiations the borrower and ADB shall agree to the FAM and ensure consistency with the loan agreement. Such agreement shall be reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the PAM and the loan Agreement, the provisions of the loan Agreement shall prevail.

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

Abbreviations

ADB	=	Asian Development Bank
ADF	=	Asian Development Fund
APFS	=	audited project financial statements
CAD	=	Command area development
CQS	=	consultant qualification selection
DMF	=	design and monitoring framework
EARF	=	environmental assessment and review framework
EIA	=	environmental impact assessment
EMP	=	environmental management plan
ESMS	=	environmental and social management system
GACAP	=	governance and anticorruption action plan
GDP	=	gross domestic product
ICB	=	international competitive bidding
IEE	=	initial environmental examination
IPP	=	indigenous people plan
IPPF	=	indigenous people planning framework
LAR	=	land acquisition and resettlement
LIBOR	=	London interbank offered rate
NCB	=	national competitive bidding
NGOs	=	nongovernment organizations
MLI	=	minor lift irrigation
PAI	=	project administration instructions
PAM	=	project administration manual
PIM		participatory irrigation management
PIU	=	project implementation unit
QCBS	=	quality- and cost based selection
RRP	=	report and recommendation of the President to the Board
SBD	=	standard bidding documents
SOE	=	statement of expenditure
SPS	=	Safeguard Policy Statement
TOR	=	terms of reference

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.

3. Project 1 of the MFF became effective on 4 June 2009 and is scheduled to close on 30 September 2015. It is modernizing the infrastructure of 1 major and 3 medium irrigation subprojects and 650 MLI schemes in selected river basins of Odisha. It also strengthened 121 WUAs in improved land and water management for increased agricultural production.

4. Project 2 of the MFF will be implemented between July 2015 and September 2018. It will modernize irrigation infrastructure of 4 major and 3 medium subprojects and 750 MLI schemes in selected river basins of Odisha. It will also strengthen 169 WUAs in improved land and water management for increased agricultural production, and restore saline embankments in 12 segments covering about 57 kilometers.

A. Impact and Outcome

5. 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.

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.

B. Outputs

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

6. 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

7. **Participatory Scheme Planning.** Following the planning documents prepared under the project preparatory technical assistance (PPTA), the OIIAWMIP will support participatory 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 Orissa state government (OSG), the Government of India, and ADB prior to their inclusion in the periodic financing request (PFR) of the MFF tranche.²

8. **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/or consultants and local facilitators will be designated to prepare the plan with individual WUAs.

9. 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. The project will ensure inclusive and equitable representation in water users association (WUA). Programs raising awareness and capacity building of local community members regarding the importance, role and responsibilities of WUAs will be conducted to advocate for equitable representation of Scheduled Caste and Scheduled Tribe and Women, marginal and landless farmers in WUAs Capacities will be built to ensure vibrant and functioning WUAs in sub project areas. During the implementation process, particular efforts will be provided to the due representation of women and other vulnerable groups in the decision making system of the WUAs through awareness raising and capacity building programs conducted by project staff in the project area.

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

b. Irrigation and Associated Infrastructure Development

10. **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.

11. **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

c. Agriculture and Allied Sector Support, and Livelihood Enhancement

12. **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

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.

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.

13. 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 works—are also included in OIIAWMIP. WUA subgroups of vulnerable people including women will form an effective linkage with the district administration, so that the subgroup will be able to attain the benefits of existing poverty reduction programs such as self-help groups. The project will also deliver specific programs to enhance the livelihood of the WUA vulnerable peoples' subgroup to supplement those existing poverty reduction programs.

d. Sustainable Operation and Maintenance System

14. **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.⁸

15. **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. 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

16. 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 Strengthening Program in Appendix 2 (which has been developed as the Capacity Building and Training Programs in Reference Materials B on p. 5).

⁸ 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.

a. Institutional Strengthening

17. **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;⁹ (v) undertaking information, education, and communication campaigns for PIM; (vi) advising on implementing the institutional actions (Appendix 1); and (vii) setting up staff performance evaluation systems to internalize PIM. Overall performance and achievements will be measured through WUA satisfaction surveys at the subproject level. The Project will require that PIM Unit staff have at least 20% women contracted through project funds.

18. **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. Selected consulting services will be engaged to support this component.

b. Project Management

19. This subcomponent will operate the program management system through a multidisciplinary project management unit (PMU) and subproject implementation offices (SIOs) 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 tranche, and implementation performance review.

C. Special Features

20. 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.

⁹ The specific training subjects include participatory planning, WUA development, design and construction management, quality control, O&M, PIM, resettlement, environmental management, and support services.

- (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.

21. 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

22. 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. Project 1 of OIIAWMIP is supporting enhanced productivity and sustainability of irrigated agriculture in one major (Taladanda) and three medium (Remal, Sunei and Gohira) existing irrigation schemes, and 650 existing minor lift irrigation schemes (through a process approach), and improved institutional performance of irrigation service delivery and water resources management. The Project 1 description is provided as Appendix 3, and the design and monitoring framework is in Appendix 4.

E. Project-2

23. On the basis of the FFA for OIIAWMIP, ADB received from the Government of India the Periodic Financing Request (PFR) for Project 2 on 12 March 2015. The proposed Project 2 is expected to be approved by the President of ADB in June or July 2015. It will expand investments in irrigation modernization and WUA strengthening (as undertaken in Project 1) to 4 major and 3 medium irrigation schemes and 750 MLI schemes within the selected river basins.¹⁰ Project 2 has a broader coverage of irrigation systems based on the experience gained under Project 1 and strengthening of relevant agencies through project implementation. Project 2 activities will include investments in: (i) water user association (WUA) empowerment, (ii) modernization of irrigation and associated infrastructure, (iii) agriculture support services, and (iv) progressive transfer of the O&M to WUAs. The proposed Project 2 will also continue support for strengthening of the DOWR and water user groups in PIM and IWRM and will benefit 108,091 ha of irrigated area. Restoration of saline embankments will safeguard 82 villages, 34,000 households, and 32,000 ha of agricultural land. The description of Project 2 is provided in Appendix 5, and the design and monitoring framework is in Appendix 6.

¹⁰ Macchagaon, Pattamundai, Mahandai Chitrotpola Irrigation Island, High Level Canal Range-1 major (greater than 10,000 ha command area) subprojects and Ramial, Kanjhari and Kansbhal medium (2,000 ha to 10,000 ha command area) subprojects.

F. Implementation Schedule

24. The OIIAWMIP will be implemented over ten years (September 2008 until September 2018) with two Projects having overlapping terms. Project 2 will be implemented between July 2015 and September 2018.

25. Under Project 1 challenges were faced in WUA strengthening and introducing PIM on major irrigation schemes, like Taladanda which lie in the deltaic area of Odisha. Project 2 has another 4 such systems – Macchagaon, Pattamundai, MCII and HLC Range-1 which total 199 WUAs. This is mainly due to size of command area particularly on major systems which have a large number of WUAs (typically over 70 per subproject). The micro-planning process is detailed and time consuming for WUA strengthening. This becomes additionally challenging on major systems which require greater outreach to a large number of WUAs. Medium subprojects are compact with fewer WUAs (up to 15) and demonstrate that efforts can be better focused on a manageable size of WUAs with more intensive provision of resources for mobilization. For Project 2 DOWR agreed to select a smaller number of WUAs on major irrigation systems (maximum number of 30 WUAs per major subproject) which will enable a more focused and intensive support. A summary of staffing requirements for WUA strengthening coterminous with the project period is presented in Appendix 7.

G. Facility Utilization of Subsequent Projects

26. Subprojects under OIIAWMIP were prepared following the set subproject selection criteria (Appendix 8) with detailed feasibility studies including the safeguards assessments. The PMU and ADB assessed the implementation progress and performance of the ongoing Project before DOWR requested the second tranche. This assessment covered 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 were identified for incorporation into Project 2. ADB received from the Government a PFR for Project 2, together with the appraisal reports of new subprojects and the Program performance assessment report, on 12 March 2015. 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.

27. 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.
- (i) 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.

28. 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.

II. IMPLEMENTATION PLANS

A. Project 2 Readiness Activities

						20	14						2015									
Indicative Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sept	
Preparation of detailed designs (for main canals and distributaries)																						
Preparation of detailed designs (for minor canals)																						
Preparation of NCB bidding documents																						
Commence bidding process invitation to bid for civil works																						
Bids recevied for NCB works (main and distributaries)																						
Issuance of RFP for construction supervision consultants																						
Issuance of RFP for MLIP consultants																						
Issuance of RFP for PP strenthening consultants																						
Loan negotiations																						
ADB President approval																						
Loan signing																						
Government legal opinion provided																						
Government budget inclusion (complete)																						
Loan effectiveness																						

B. Overall Program Implementation Plan

	0	IIAWN	liP impl	emen	tation S	chedul	e for the	e MFF													
	-		I		1		TRAN	CHE 1			1		1				TRAN	CHE 2		1	*
Task /Activity	2008	8/09	2009	9/10	201	0/11	201	1/12	201	2/13	201	3/14	20	4/15	201	5/16	2016	6/17	2017/	/18	2018
(Tranche T Subprojects (T major and 3 medium schemes)																					
Social mobilization of PPs and Micro-planning (121PPs)																					
Civil works (main canal structures, except MCII)																					
Civil works (minor canal structures including design, except MCII)																					
RP implementation (MCII)																					
Implemented by DoWR/ Facilitation Consultants																					
Civil Works (MCII)-Design/Proc Construction shifted to Tranche2																					
Command Area Development																					
Agriculture and allied sector support, and livelihood enhancement																					
O&M support																					
Program defered (staff and works completion timings)															ļ						
Minor Lift Schemes (650 planned for Tr-1)																					
Tranche 2 Subprojects (4 major and 3 medium schemes)																					
Tranche 2 Feasibility Studies (including environmental and social safeguards)																					
Procurement of civil works including saline embankments																					
Civil works (main canal structure and saline embankments)																					
Civil works (minor canal structures, including design)																					
Social mobilization of PPs and Micro-planning																					
Agriculture and allied sector support, and livelihood enhancement																					
O&M support																					
Minor Lift Schemes (750 schemes)																					
Institutional Strengthening and Project Management	_																				
Project Management																					
ISPM Consultants																					
Construction supervision													,	•							
Minor lift																					
Integrated water resources management																					
WUA/PP strengthening														-							
DOWR Strengthening																					
Training																					
Tranche 7																					

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.

C. Project 2 Implementation Plan

OllAWMIP Implementation Schedule for Project 2																	
				-			_							_			
Task /Activity	-	2014	1	-	201	5		2	016	4	-	201	7	-	20	18	4
1. State and water user institutions strengthened for water resources and irrigation management		2 3) 4		2	3	4	1 4	2 3	4	1	2 .	3 4		2	3	4
1.1 Draft vision and strategy for change management prepared																	
1.2 Undertake assessments and review lessons learned from other experiences in developing water policy																	
1.3 169 WUAs under tranche 2 subprojects form sub-committees for planning, works, water management and audit																	
1.4 Develop Baitarani river basin management plan with stakeholder participation																	
1.5 Hold elections of 169 WUAs on tranche 2 subprojects																	
2. Irrigation system infrastructure modernized and managed																	
2.1 Commence civil works procurement for first 34 (out of 79) packages for main, distribution canals and saline embankments																	
2.2 Commence civil works procurement for 24 out of 79 packages for main and distribution canals and remaining packages																	
2.3 Commence civil works procurement for 21 minor canal packages								ļ									
2.4 Commence civil works implementation of 15 (out of 79) packages.																	
2.4 Commence civil works implementation of 64 (out of 79) packages of remaining main, distribution and minor packages.																	
2.8 Commence implementation of batch I of 250 out of 750 MLIP, batch II of 250 MLIP, batch III of 250																	
2.9 Commence implementation of sub-minor canals.								ļ									
2.10 Transfer O&M of for tranche 2 subprojects																	
2.11 Complete civil works for tranche 2 irrigation, minor lift irrigation and saline embankments subprojects complete																	
3. Project management systems effective																	
3.1 Complete recruitment of social mobilization staff																	
3.2 Implement resettlement plans for 3 subprojects																	
3.3 Recruit consulting services for construction supervision, minor lift irrigation project, WUA/PP Strengthening and IWRM																	
3.4 Establish MIS for Project 2 and DoWR, and engage Implementation Support																	
3.5 Prepare project completion report for tranche 2																	

PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations – Roles and Responsibilities

Pro	oject implementation ganizations	Management Roles and Responsibilities
•	Department of Water Resources, State Government of Odisha (Executing agency)	Responsible for overall strategic guidance, supervision and quality assurance of works while ensuring compliance with loan covenants and PFR provisions and due diligence.
•	Project Steering Committee	A state-level PSC will provide policy guidance, interministerial coordination, and will take decisions of matters related to OIIAWMIP. The PSC will be chaired by the Agriculture Production Commissioner or the office not below the rank of secretary and the members wi include secretaries, directors, and/or representatives of all relevant departments and agencies of the State. ¹ Under the PSC, a project coordination working group (PCWG) chaired by Secretary DOWR will be established to provide regular coordination with the nodal officer assigned by the concerned departments and agencies.
•	Project Management Unit	The PMU has been established in DOWR under the PIM CAD Directorate, with the assignment of a full-time Project Director at the rank of chief engineer who is the report to Principal Secretary through the PIM-CAL Directorate which will be led by a Director, PIM-CAL Directorate of the rank of Additional Secretary. The PML 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.
		The PMU will be responsible for the identification formulation, implementation, and O&M of all subproject including conformance with the State, national and ADI social and environmental safeguards policies. Senio staffs are assigned in the PIM-CAD Directorate and PML for the purpose of the Facility, including (i) two executive engineers and four assistant engineers in procuremen (budget and administration cell) and in monitoring and evaluation (information management cell); (ii) a staff

¹¹ 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.

			seconded from Department of Environment and Forest and a staff designated for OIIAWMIP from Resettlement and Rehabilitation Directorate of DOWR and Gender Expert (recruited from the market), (iii) directors in O&M (from DOWR), CAD (from CADA), and WUA (or Pani Panchayat) 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. The PMU will also have a financial management (FM) expert (Chartered Accountant recruited from the market) to assist DOWR's financial adviser. DOWR's FM team will comprise a dedicated accounts officer and 2 assistant accounts officers to look after the project(s) accounts and processing claims.
		A	To meet its mandate of managing, guiding, and coordinating for the implementation of the Projects and the MFF, 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, consulting and NGO services, and loan disbursement; (x) maintain financial accounts; and (xi) prepare periodic implementation progress reports.
•	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, 2 junior engineers and 2 draftsmen. A project preparatory working group headed by Director Hydrology prepared and processed the feasibility study reports of subprojects and the associated clearance of their detailed project reports.
1.	Subproject Implementation Office (SIO)	>	At headquarters there will be a PIM Deputy Subproject Manager to consolidate and coordinate all SIO activities which directly interface with PMU. For <u>major and medium</u> <u>schemes</u> , under the PMU, 6 SIOs will be established for the 5 major subprojects and 6 SIOs will be established for

	the 9 medium subprojects, building on the existing establishments at the field level. ¹² For Project 2 there will be SIO offices at Machhagaon, Pattamundai, HLC-1 and MCII (4 major subprojects). For medium subprojects of Project 2 there will be SIO offices at Kansbahal, Ramial and Kanjhari.
4	The SIOs will comprise technical, CAD, and WUA support cells, constituted by staff from DOWR, CADA, and directly engaged staff for WUA strengthening, PIM-CAD, and agriculture. The SIO will also have a PIM Manager to facilitate the interface between PIM-CAD Directorate and field activities.
~	The WUA support cell will also have a number of support service teams (SST) 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. ¹³ For each scheme there will be a subproject manager who is a superintending engineer or an executive engineer (depending on whether the subproject is major or medium, respectively). Project 2 staffing of SIO is presented in Appendix 7.
~	In SIOs (which includes the services support cell), 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. ¹⁴ 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

¹² 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.¹³ 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. ¹⁴ 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.

	including CAD; (iii) implement safeguards actions following the relevant plans; ¹⁵ (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.
	For minor lift schemes, the PMU will have a lift irrigation cell comprising a deputed senior engineer from OLIC, one team coordinator/economist and one monitoring and evaluation expert. There will be and three mobile teams each comprising two minor lift engineers, two PIM training coordinators and two agriculture specialists. PMU will be assigned for central procurement, subproject planning including feasibility studies, and monitoring and evaluation. Under the PMU, up to six SIOs will be established to implement up to 250 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 community organizers to support institutional building and program delivery of up to 20 WUAs for a three-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.
2. 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.

¹⁵ 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.

•	ADB	\checkmark	ADB	will	be	resp	onsible	for	periodic	review	and
			super	rvisior	n of	Prog	gram ir	nplem	nentation	(throug	h six
			mont	hly lo	oan r	review	r missio	ons a	and midte	erm and	final
			reviev	w mis	ssion	s), fin	nancial	disbu	rsement	and ens	suring
			comp	liance	e wit	h loar	n assur	ance	s includin	g institu	tional
			arran	geme	nts	as a	agreed	and	stated	in the	loan
			agree	ement							

B. Key Persons Involved in Implementation

Executing Agency

Department of Water Resources,	Mr. P.K. Jena
Government of Odisha	Principal Secretary, DOWR
	Fax: +91 674 239 2446
	Email: <u>wrsec@ori.nic.in</u>

Er. P.K. Satpathy Chief Engineer-cum-Project Director, DOWR Fax: +91 674 239 1475 Email: <u>cepdpmu@gmail.com</u>

ADB

India Resident Mission	Ms. M. Teresa Kho Country Director 4 San Martin Marg Chanakyapuri New Delhi 110021, India P.O. Box 5331 Chanakyapuri HPO, India Tel: +91 11 2410 7200 Fax: +91 11 2687 0955
Environment, Natural Resources and Agriculture Division (SAER)	Mr. Takashi Matsuo Director, SAER 6 ADB Avenue Mandaluyong City, 1550 Metro Manila, Philippines Tel: +632 632-5579 Email: <u>tmatsuo@adb.org</u>
Mission Leader	Ms. Cindy Malvicini Principal Portfolio Management Specialist, SAER 6 ADB Avenue Mandaluyong City, 1550 Metro Manila, Philippines Tel: +632 632-5917 Email: <u>cmalvicini@adb.org</u>

C. Project Organization Structure



Overall Organizational Structure

ADB = Asian Development Bank, CAD = command area development; DOWR = Department of Water Resources, ISPM = institutional strengthening and project management, IWRM = integrated water resources management; MIS = management information system; NGO = nongovernment organization, PIM = participatory irrigation management, WUA = water user association.

Source: Asian Development Bank.


Organizational Structure of Project Management Office and Subproject Implementation Offices

- Similar roles and objective

Monitoring/Reporting/Financial Functions

- · - · - · - · Support & Coordination function

---- directly supporting

D. Implementation Procedures and Arrangements

29. **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.

30. **Subproject Implementation Procedures.** Implementation procedures for individual subprojects are shown in Appendix 9-11 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.

31. **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 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 11.

32. **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% (10% prior to commencement of project construction 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.

33. **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-aide 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. 14–15 above, as an OIIAWMIP component for O&M sustainability.

III. COSTS AND FINANCING

A. MFF Financing Terms

34. 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.

35. 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.

B. Investment Cost and Financing Plan of the OllAWMIP

36. The overall program investment cost is estimated at \$236.4 million (table 1).

Proje	ct Components	ADB	OFID	OSG	PPs	Total
I.	Base Cost a					
	A. Irrigated Agriculture Management Systems B. Institutional Strengthening and Project	84.2	24.8	32	3.3	144.3
	Management	49.8	0	14	0.1	63.9
	Subtotal (A)	134	24.8	46	3.4	208.2
II.	Contingencies b	12.5	5.2	4.3	0.6	22.6
	Subtotal (B)	146.5	30	50.3	4.0	63.0
III.	Financing Charges during Implementation	0	0	5.6	0	5.6
	Total	146.5	30	55.94	4.0	236.4
	Financing Share (%)	62	13	24	2	100

Table 1. Cost Estimates and Financing Plan (Program)

37. 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. 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.

38. 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. Two loans (or Projects) will be extended under the Facility to implement the Program subject to the said PFR submission and loan agreement signing.

C. Investment Cost and Financing Plan for Project-1

39. 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.

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											

Table 9 Total Cost and Einspeing Dian (Draiget 1)

In mid-2007 prices.

D. **Utilization Period**

40. Loan closing dates under any tranche will be no later than 17 September 2018. The current loan closing date of the Project-1 is 30 September 2015.

Ε. Investment Cost and Financing Plan for Project-2

41. Project-2 is estimated to cost \$172 million, the indicative cost and financing plan of Project 2 are shown in Tables 3.

Table 3: Tranche Investment Plan Project-2

(\$ million)

Item	Amount ^a
A. Base Cost ^b	
Output 1: State and water users strengthened	3.0
Output 2: Irrigation infrastructure modernized and managed	120.0
Project management systems operational	34.0
Subtotal (A)	156.0
B. Contingencies ^c	13.0
C. Financing Charges During Implementation ^d	2.0
Total (A+B+C)	172.0
^a Includes taxes and duties of \$7.8 million to be financed from government resources.	

^b In June 2014 prices.

^c Physical contingencies computed at 3% for civil works, 5% for resettlement, 10% for consulting services, Pani Panchayat support services and equipment (including minor lift irrigation equipment), and zero for other items. Price contingencies computed at 4% between data collection and negotiations (2007 to 2014); with annual inflation of 2.0% to 2.2% on foreign exchange costs and 18.4% between data collection and negotiations (2007 to 2014); with annual inflation of 2.0% to 8.0% to 8.4% on local currency costs using ADB domestic cost escalation factors as of June 2014. Includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^d Includes interest and commitment charges as applicable.

Source: Asian Development Bank estimates.

42. The MFF will be implemented over a 10 year period, with 2 tranches, subject to the government's submission of related periodic financing requests, execution of the related loan and project agreements for each tranche, and fulfillment of terms and conditions and undertakings set forth in the framework financing agreement (FFA).¹⁶ The government will make the relevant portion of the proceeds of each tranche available to the State, promptly and on terms and conditions acceptable to ADB, for the implementation of the investment program.

43. The State has submitted the second periodic financing request (PFR)¹⁷ in line with the draft FFA. The cost of Project-2 subprojects is estimated at \$172 million equivalent, including taxes and duties of \$7.8 million equivalent, interest of \$1.8 million and commitment fee of \$0.4 million to be financed by the government.

¹⁶ Framework Financing Agreement (accessible from the list of linked documents in Appendix 2 of the Report and Recommendation of the President for the Investment Program).

¹⁷ Periodic Financing Request (in Appendix 2 of the Periodic Financing Request Report).

F. Expenditure Cost by Financiers (Total Investment Program)

ltom				State	W/11A o	Total	Cost Sha		haring		
nem		ADD	OFID	Sidle	WUAS	TOLAI	ADB	OFID	State	WUAs	
Α.	Civil Works										
	Major and Medium Schemes	60.0	19.9	15.2	0.0	95.0	63.1%	20.9%	16.0%	0.0%	
	Command Area Development	1.3	0.0	7.7	1.1	10.0	12.6%	0.0%	76.8%	10.6%	
	Minor Lift Schemes	3.1	3.9	1.0	2.0	10.0	30.6%	39.2%	16.5%	0.0%	
	Emergency Restoration Works	12.8	0.0	2.5	0.0	15.3	83.5%	0.0%	16.5%	0.0%	
	Subtotal	77.1	23.8	26.4	3.0	130.3					
В.	Land Acquisition and Resettlement	0.0	0.0	4.1	0.0	4.1	0.0%	0.0%	100.0%	0.0%	
C.	Vehicles and Equipment										
	Vehicles	0.1	0.0	0.0	0.0	0.1	100.0%	0.0%	0.0%	0.0%	
	Equipment and Materials	1.2	0.0	0.1	0.0	1.3	92.3%	0.0%	7.7%	0.0%	
	Minor Lift Equipment	5.9	1.0	1.2	2.0	10.1	58.6%	9.9%	11.8%	19.7%	
	Subtotal	7.2	1.0	1.3	2.0	11.5					
D.	Specialist Services										
	NGO Social Mobilization & PP										
	Strengthening	4.8	0.0	0.3	0.1	5.2	91.9%	0.0%	6.6%	1.5%	
	Consulting Services	21.6	0.0	2.9	0.0	24.5	88.0%	0.0%	12.0%	0.0%	
	Studies	0.8	0.0	0.1	0.0	0.9	91.6%	0.0%	8.4%	0.0%	
	Subtotal	27.3	0.0	3.4	0.1	30.7					
Е.	Survey and Investigation	2.0	0.0	0.8	0.0	2.8	70.3%	0.0%	29.7%	0.0%	
F.	Training										
	Irrigation Management	7.4	0.0	0.3	0.0	7.7	95.7%	0.0%	4.3%	0.0%	
	Agriculture and Livelihood	5.2	0.0	0.1	0.0	5.3	98.2%	0.0%	1.8%	0.0%	
	Subtotal	12.6	0.0	0.4	0.0	13.0					
G.	Operational Costs	7.9	0.0	9.5	0.0	17.4	45.5%	0.0%	54.5%	0.0%	
Tota	(Base Cost)	134.0	24.8	45.9	5.1	209.9					
	Physical & Price Contingencies	12.5	5.2	4.3	0.6	22.5	55.4%	23.1%	19.1%	2.4%	
Tota	Project Cost	146.5	30.0	50.2	5.7	232.4					
	Financing Charges	0.0	0.0	5.6	0.0	5.6	0.0%	0.0%	100.0%	0.0%	
Tota	Cost Including Financing Charges	146.5	30.0	55.9	5.7	238.0	61.5%	12.6%	23.5%	2.4%	

Component Cost by Financiers (Project 1)^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.

G. Expenditure Cost by Financiers (Project 1)a

ltom			Ctata	WIIAe			Cost Sharing (%)			
	ADB	OFID	State	WUAS	Total –	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.

H. Detailed Cost Estimates by Expenditure Category for Project 2 (US\$ '000)

				%	%
				Foreign	Base
(US\$ '000)	Foreign	Local	Total	Exchange	Costs
Investment Costs					
Civil Works					
Major and Medium Schemes	-	62,554	62,554	-	40
Command Area Development	-	8,216	8,216	-	5
Minor Lift Schemes	-	4,251	4,251	-	3
Land Acquisition and Resettlement	-	510	510	-	-
Emergency Restoration Works	-	14,524	14,524		9
Subtotal	-	90,055	90,055	-	58
Equipment					
Equipment	-	95	95	-	-
Minor Lift Equipment	-	7,632	7,632	-	5
Subtotal	-	7,727	7,727	-	5
Specialist Services					
PP Strengthening Services	-	4,457	4,457	-	3
TA Consultants	-	17,788	17,788	-	11
Studies	-	546	546	-	-
Survey and Investigation	_	1,869	1,869	-	1
Subtotal	-	24,660	24,660	-	16
Training					
Irrigation Management Training	1,571	5,435	7,006	22	4
Agriculture and Livelihood Training	-	4,616	4,616	-	3
Subtotal	1,571	10,051	11,622	14	7
Duties & Taxes	-	8,792	8,792	-	6
Total Investment Costs	1,571	141,285	142,856	1	91
Recurrent Costs					
Operational Costs	-	13,344	13,344	-	9
Duties & Taxes	-	120	120	-	-
Total Recurrent Costs	-	13,464	13,464	-	9
Total BASELINE COSTS	1,571	154,749	156,320	1	100
Physical Contingencies	-	6,581	6,581	-	4
Price Contingencies	67	6,354	6,420	1	4
Total PROJECT COSTS	1,638	167,684	169,322	1	108
Interest During Implementation	-	1,828	1,828	-	1
Commitment Charges	-	412	412	-	-
Total Costs to be Financed	1,638	169,924	171,562	1	110

No.	Item	Total Amoun ADB F	t Allocated for inancing (\$)	Percentage and Basis for Withdrawal from the Loan
		Category	Subcategory	Account
1	Civil Works	71,466,000		
1a	Major and Medium Schemes		54,982,000	83.5% of total expenditure claimed
1b	Command Area Development (med. schemes & topo. survey)		667,000	8.6% of total expenditure claimed
1c	Minor Lift Schemes		3,052,000	87.5% of total expenditure claimed
1d	Emergency Restoration Works		12,765,000	83.5% of total expenditure claimed
2	Equipment	6,031,000		
2a	Equipment, Materials & Vehicles		95,000	100% of total expenditure claimed*
2b	Minor Lift Equipment		5,936,000	84.5% of total expenditure claimed
3	Specialist Services	16,951,000		
3a	PP Strengthening Services		4,122,000	92.2% of total expenditure claimed
3b	TA Consultants		10,788,000	53.1% of total expenditure claimed
3c	Studies		546,000	87.5% of total expenditure claimed
3d	Survey and Investigation		1,495,000	70% of total expenditure claimed
4	Training	8,401,000		
4a	Irrigation management		3,785,000	53.2% of total expenditure claimed
4b	Agriculture and livelihood		4,616,000	98% of total expenditure claimed
5	Operational Costs	6,993,000		51.9% of total expenditure claimed
6	Unallocated	10,158,000		
	Total	120,000,000		

I. Allocation and Withdrawal of Loan Proceeds for Project-2 (\$)

* Exclusive of taxes and duties

J. Detailed Cost Estimates by Financier for Project-2 (\$ '000)

	ADB		Gov.		Beneficiaries	es Total		
(US\$ '000)	Amount	%	Amount	%	Amount	%	Amount	%
Investment Costs								
Civil Works								
Major and Medium Schemes	54,982	83.5	10,865	17	-	-	65,846	100.0
Command Area Development	667	8.6	7,117	91.4	-	-	7,784	100.0
Beneficiary Contribution	-	-	-	-	865	100.0	865	100.0
Minor Lift Schemes	3,052	87.5	436	12.5	-	-	3,488	100.0
Beneficiary Contribution	-	-	-	-	872	100.0	872	100.0
Land Acquisition and Resettlement	-	-	510	100.0	-	-	510	100.0
Emergency Restoration Works	12,765	83.5	2,523	16.5	-	-	15,288	100.0
Subtotal	71,466	75.5	21,451	22.7	1,737	1.8	94,653	100.0
Equipment								
Equipment	95	100.0	-	-	-	-	95	100.0
Minor Lift Equipment	5,936	84.5	1,090	15.5	-	-	7,026	100.0
Beneficiary Contribution	-	-	-	-	1,697	100.0	1,697	100.0
Subtotal	6,031	68.4	1,090	12.4	1,697	19.2	8,818	100.0
Specialist Services								
PP Strengthening Services	4,122	92.2	348	7.8	-	-	4,470	100.0
TA Consultants	10,788	53.1	9,541	46.9	-	-	20,329	100.0
Studies	546	87.5	78	12.5	-	-	624	100.0
Survey and Investigation	1,495	70.0	641	30.0	-	-	2,136	100.0
Subtotal	16,951	61.5	10,608	38.5	-	-	27,559	100.0
Training								
Irrigation Management Training	3,785	53.2	3,331	46.8	-	-	7,117	100.0
Agriculture and Livelihood Training	4,616	98.0	94	2.0	-	-	4,710	100.0
Subtotal	8,401	71.0	3,425	29.0	-	-	11,827	100.0
Total Investment Costs	102,849	72.0	36,574	25.6	3,434	2.5	142,856	100.0
Recurrent Costs								
Operational Costs	6,993	51.9	6,471	48.1	-	-	13,464	100.0
Total Recurrent Costs	6,993	51.9	6,471	48.1	-	-	13,464	100.0
BASELINE PROJECT COSTS	109,842	70.3	43,045	27.5	3,434	2.2	156,320	100.0
Contingencies	10,158	78.1	2,493	19.2	351	2.7	13,002	100.0
TOTAL PROJECT COST	120,000	70.9	45,538	26.9	3,785	2.3	169,322	100.0
Interest During Implementation	-	-	1,828	100.0	-	-	1,828	100.0
Commitment Charges		-	412	100.0	-	-	412	100.0
TOTAL DISBURSEMENT	120,000	69.9	47,778	27.8	3,785	2.2	171,562	100.0

K. Detailed Cost Estimates by Outputs/Components for Project-2 (\$ '000)

Investment CostsStrengtheningModernisedSystemsTotalInvestment CostsCivil Works-65,846-65,846Command Area Development-8,648-8,648Minor Lift Schemes-4,360-4,360Land Acquisition and Resettlement-510-510Emergency Restoration Works15,28815,28815,288Subtotal-94,653-94,653Equipment-95-95Minor Lift Equipment-8,723-8,723Subtotal-8,818-8,818Specialist Services-8,818-8,818
Investment costsCivil WorksMajor and Medium Schemes-65,846-65,846Command Area Development-8,648-8,648Minor Lift Schemes-4,360-4,360Land Acquisition and Resettlement-510-510Emergency Restoration Works15,28815,28815,288Subtotal-94,653-94,653Equipment-95-95Minor Lift Equipment-8,7238,723Subtotal-8,818-8,818Specialist Services-8,818-
Major and Medium Schemes-65,846-65,846Command Area Development-8,648-8,648Minor Lift Schemes-4,360-4,360Land Acquisition and Resettlement-510-510Emergency Restoration Works15,28815,28815,288Subtotal-94,653-94,653Equipment-95-95Minor Lift Equipment-8,723-8,723Subtotal-8,818-8,818Subtotal-8,818-8,818
Major and Modulin Generics-00,040-00,040Command Area Development-8,648-8,648Minor Lift Schemes-4,360-4,360Land Acquisition and Resettlement-510-510Emergency Restoration Works15,28815,28815,288Subtotal-94,653-94,653Equipment-95-95Minor Lift Equipment-8,723-8,723Subtotal-8,818-8,818Specialist Services-8,818-8,818
Minor Lift Schemes-4,360-4,360Land Acquisition and Resettlement-510-510Emergency Restoration Works15,28815,28815,288Subtotal-94,653-94,653Equipment-95-95Minor Lift Equipment-8,723-8,723Subtotal-8,818-8,818Specialist Services-8,818-8,818
Land Acquisition and Resettlement-510-510Emergency Restoration Works15,28815,28815,288Subtotal-94,653-94,653Equipment-95-95Minor Lift Equipment-8,723-8,723Subtotal-8,818-8,818Specialist Services-8,818-8,818
Early Regulation and Resettion and Resetti
Subtotal - 94,653 - 94,653 Equipment - 95 - 95 Minor Lift Equipment - 8,723 - 8,723 Subtotal - 8,818 - 8,818
Equipment - 95 - 95 Equipment - 95 - 95 Minor Lift Equipment - 8,723 - 8,723 Subtotal - 8,818 - 8,818 Specialist Services - 8,818 - 8,818
Equipment - 95 - 95 Minor Lift Equipment - 8,723 - 8,723 Subtotal - 8,818 - 8,818 Specialist Services - 8,818 - 8,818
Minor Lift Equipment-8,723-8,723Subtotal-8,818-8,818Specialist Services
Subtotal-8,818-8,818Specialist Services
Specialist Services
PP Strengthening Services - 4 470 - 4 470
TA Consultants - 20.329 20.329
Studies 624 - 624
Survey and Investigation - 2.136 - 2.136
Subtotal 624 6.606 20.329 27.559
Irrigation Management Training 2.362 4.754 - 7.117
Agriculture and Livelihood Training - 4.710 - 4.710
Subtotal 2.362 9.464 - 11.827
Total Investment Costs 2.986 119.541 20.329 142.856
Recurrent Costs
Operational Costs 13,464 13,464
Total Recurrent Costs 13,464
Total BASELINE COSTS 2.986 119.541 33.793 156.320
Physical Contingencies 62 4.005 2.514 6.581
Price Contingencies 114 4,891 1,415 6,420
Total PROJECT COSTS 3,163 128,437 37,722 169,322
Interest During Implementation 1.828
Commitment Charges 412
171,562

L. Detailed Cost Estimates by Year for Project-2 (\$ '000)

				Base Cost	
	2015	2016	2017	2018	Total
(US\$ '000)					
Investment Costs					
Civil Works					
Major and Medium Schemes	17,155	17,226	17,404	14,062	65,846
Command Area Development	1,924	2,400	2,400	1,924	8,648
Minor Lift Schemes	1,163	1,163	1,163	872	4,360
Land Acquisition and Resettlement	510	-	-	-	510
Emergency Restoration Works	4,368	7,462	3,458	-	15,288
Subtotal	25,119	28,251	24,424	16,858	94,653
Equipment					
Equipment	95	-	-	-	95
Minor Lift Equipment	-	2,908	2,908	2,908	8,723
Subtotal	95	2,908	2,908	2,908	8,818
Specialist Services					
PP Strengthening Services	1,197	1,251	1,045	977	4,470
TA Consultants	5,468	7,195	4,642	3,025	20,329
Studies	312	312	-	-	624
Survey and Investigation	911	828	199	199	2,136
Subtotal	7,888	9,586	5,885	4,200	27,559
Training					
Irrigation Management Training	1,865	1,873	1,760	1,619	7,117
Agriculture and Livelihood Training	3,514	457	370	370	4,710
Subtotal	5,379	2,330	2,129	1,989	11,827
Total Investment Costs	38,481	43,074	35,346	25,955	142,856
Recurrent Costs	,		,		,
Operational Costs	3,600	3,374	3,368	3,122	13,464
Total Recurrent Costs	3,600	3,374	3,368	3,122	13,464
tal BASELINE COSTS	42,081	46,448	38,715	29,077	156,320
Physical Contingencies	1,595	2,108	1,625	1,253	6,581
Price Contingencies	482	1,564	2,133	2,242	6,421
tal PROJECT COSTS	44,158	50,120	42,472	32,572	169,322



M. Contract and Disbursement S-curve (Project-2)

N. Fund Flow Diagram



44. 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 and administration cell dealing with financial management with the assignment of dedicated account officer (in finance cadre) 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. Within this institutional setup, the following arrangements will be put into operation.

45. **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, Planning and Design (P&D) and the Additional Secretary (AS) 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.

46. **Verification of Expenditure and Auditing.** The dedicated financial unit will co-ordinate 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, receiving audit certificates, and furnishing it ADB through DEA.

A. Financial Management Assessment

47. **Institutional Arrangement:** DOWR of the State Government of Odisha is the executing agency for the project. The project is being executed through a PMU which is headed by the Chief Engineer (DOWR) -cum Project Director (PD). The project is implemented through 6 DOWR circle offices which are also engaged in activities other than ADB project work. These circle offices are under the responsibility of their respective Chief Engineers (CE) however, also undertake activities for the project which are reported through the circle CE to PD PMU.

48. **Fund Flow Arrangements:** Although, there is a satisfactory arrangement to transfer the proceeds of the loan to the executing agency through adequate budget provisioning. All payments are made through the state treasury system as there are no separate bank accounts at any locations. Funds are drawn from the State treasury as per requirement. Claims are prepared initially at the SIO level where expenditure is actually incurred. These are sent to PMU for verification with appropriate supports. The PMU verifies the same and sends them to CAAA for lodging the claim to ADB. It has been observed, that at the SIO level there is no system in place to keep track of fund receipts into the State treasury as and when ADB disburses its claim for the project. As a result total fund position of the project as on date cannot be confirmed easily by project staff.

49. **Staffing:** The PMU and all project locations have accounts staff (Division Accountant) from the Accountant General's office, of the state. These staff manage ADB and other State Government projects. The Finance Advisor position in the PMU is handled by an Accounts Officer who manages overall aspects of accounting and financial function including disbursements, establishment and other related matters. To provide better support to for financial management (FM) a chartered accountant will be recruited from the market to assist the FM team.

50. Financial Management Assessment Questionnaire is prepared and available upon request. The overall pre-mitigation risk is considered substantial. However, the inclusion of specific recommendations in the project design like recruitment of a chartered accountant as FM specialist in the PMU, is expected to bring FM risk down to an acceptable level.

Β. Disbursement

51. Disbursement of loan proceeds under the MFF will be in accordance with ADB's Loan Disbursement Handbook (2015, as amended from time to time)¹⁸ and the detailed arrangements agreed upon between the government and ADB.

52. The State Government of Odisha (SGO) has opted to pre-finance the expenditure under OIIAWMIP and seek reimbursement of eligible expenditure from ADB. The disbursement arrangements for the MFF will be on a reimbursement basis. Therefore, this FAM will not detail the procedures and requirements for maintenance of imprest Account with CAAA and the subaccounts by DOWR. However, the option for SGO to access this facility anytime during the MFF implementation period will continue to remain open and the procedures for the same may be accessed in ADB's Loan Disbursement Handbook available at www.adb.org.

53. **Types of Disbursement Arrangements.** Under the investment program and projects the following will apply:

Reimbursement procedure (with or without full supporting documents) where ADB pays (i) from the loan account to the borrower's account, or in some cases, to the project account for eligible expenditures which have been incurred and paid for by the project out of its budget allocation or its own resources.

Required actions prior to submission of withdrawal application includes but not limited¹⁹ to the 54. following:

- Authorized signatory letter from SGO authorizing signatories and authentication of their (i) signatures addressed to DEA, CAAA and ADB;
- Submission of Treasury Account details to DEA and CAAA for transfer of (ii) reimbursements from ADB to SGO against eligible expenditures under the project;

55. Statement of Expenditure (SOE) Procedure. The SOE procedure will be used to reimburse eligible expenditures not exceeding \$100,000 equivalent for any individual payment. For all individual payments exceeding \$100,000 equivalent, documented claim procedure²⁰ will be followed. Withdrawal applications for payments made to contractors/consultants in currencies other than Indian Rupees if any, will be submitted for reimbursement to CAAA-ADB will follow documented claim procedure and will be in the currency paid to contractors/consultants. Claims in the SOE sheets must carry on the corresponding Procurement Contract Summary Sheet (PCSS) number provided for each contract under the Program. SOE records should be maintained and made readily available for review by ADB's disbursement and review missions or upon ADB's request for submission of supporting documents on a sampling basis, and independent audit.

56. Before the submission of the first withdrawal application, the government or the EA should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal

¹⁸ Available at: http://www.adb.org/sites/default/files/loan-disbursement-handbook.pdf

¹⁹ Any additional requirements by Gol/CAAA enforced from time to time needs to be complied with by the State and executing agency.²⁰ All supporting approved invoices, bills, receipts of payment

applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person.

57. Withdrawal application forms and other loan financial information can be downloaded from ADB's Loan and Grant Financial Information System (LFIS/GFIS). Access to the LFIS/GFIS can be requested by submitting the requisite form.

58. **Minimum value per Withdrawal Application.** The minimum value per withdrawal application is US\$100,000, unless otherwise approved by ADB. PMU will consolidate expenditure claims from the project including SIOs, to meet this limit for reimbursement claims.

59. All disbursements under government financing will be carried out in accordance with regulations of Government of India relevant to co-financing of the projects financed by the Multilateral Financing Organizations.

C. Finance Accounting and Auditing Requirements

1. Accounting

60. 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. Financial statements for individual tranches shall not be consolidated.

61. **Book keeping, Accounting Records and Financials:** The project follows single entry book keeping system in cash basis. That means transactions are recorded as and when payments are made. The project maintains only cash books and other requisite registers at all the concerned divisions. The financial statements from the existing system are presently not well defined as to what are the components of the financial statements. The existing system also does not capture information on component wise (cost components) contributions from other financiers as per the project estimates or eg, how much of interest or commitment charge has been paid so far by the project. PMU officials shall be required to attend financial management capacity building workshops at INRM to enable them to prepare higher quality project financial statements.

62. **Accounting Policies and Procedures**: The PMU follows the State Government (OGFR)/PWD Account codes in cash basis. The project also follows Odisha Budget manuals.

2. Auditing

63. Detailed consolidated annual project financial statements (APFS) 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 6 months of the end of the fiscal year.

64. The PMU will:

- (i) maintain separate books and accounts relating to expenditure from all sources;
- (ii) prepare and submit audited project financial statements to ADB in the English language within 6 months of the end of the fiscal year;

- (iii) prepare Project financial statements which will include at a minimum, a statement of receipts and payments with accompanying notes and schedules. These shall be prepared to ensure maximum alignment to international accounting standards²¹ and Government of India financial regulations. Template financial statements agreed between the CAG, DEA and ADB as part of the standard TORs in September 2013 shall be used as a guide.
 - (iv) prepare and submit to ADB, annual contract awards and disbursement projections at least one month before the start of each calendar year;
 - (v) record in a transparent manner all funds received from the SGO and ADB;

65. **External Auditors arrangements:** Project financial statements shall be subject to audit by an independent auditor appointed by the CAG, and acceptable to ADB. The audit shall be conducted in accordance with the guidelines and procedures set out by the CAG of India. The annual audit report will include an audit opinion which covers (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan proceeds were used only for the purposes of the project or not; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project; (iv) use of the imprest fund procedure; and (v) the use of the statement of expenditure procedure certifying to the eligibility of those expenditures claimed under SOE procedures, and proper use of the SOE and imprest procedures in accordance with ADB's Loan Disbursement Handbook and the project documents. If internal control deficiencies come to the notice of the auditor, a management letter shall also be issued along with the Audit Report.

66. To ensure the timely submission of audited project financial statements, PMU shall formally request the CAG to include project audits in their yearly work plan through the DEA, at the time of loan negotiations. In addition, unaudited project financial statements should be submitted to for audit within 3 months of the end of the fiscal year.

67. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

68. The government and PMU have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited financial statements. ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the recipient, or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

69. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).²² After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website. The Audit Management Letter will not be disclosed.

²¹ Cash Basis International Public Sector Accounting Standards

²² Available from <u>http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications</u>

V. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting and Retroactive Financing

70. All advance contracting and retroactive financing will be undertaken in conformity with ADB's *Procurement Guidelines* (2015, as amended from time to time)²³ and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).²⁴ The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. The government and DOWR have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the Project.

71. Advance contracting for consulting services engagement and procurement of goods and civil works, and retroactive financing will be applied for the MFF. These arrangements have to be approved for Project 2 during the processing of the PFR for tranche 2. Total eligible expenditure under retroactive financing will not exceed an amount equivalent to 20% of the proposed amount for the respective loans under the MFF, and must have been incurred before effectiveness of the relevant loan, but not earlier than 12 months before the signing of the relevant legal agreements.

B. Procurement of Goods, Works and Consulting Services

72. All procurement of goods and works will be undertaken in accordance with ADB's *Procurement Guidelines.* All consulting services will be procured in accordance with ADB's *Guidelines on the Use of Consultants.*

73. **Procurement Plan.** The procurement plan for Project 2 is shown as Appendix 12. The procurement plan for Project 1 is in Appendix 13. The procurement plan indicates threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines. The procurement plan provides: (i) a list of goods, works, and consulting services contract packages that will be processed over the next 18 months with milestone dates for activities; (ii) the proposed methods for procurement of such contracts that are permitted under the respective loan agreements; and (iii) the related ADB review procedures. The procurement plan should be updated at least every 18 months (more frequently if necessary) and should cover the next 18 months of procurement activity. A delay in loan effectiveness, other start-up delays, and delays during implementation will require an unscheduled procurement plan update. ADB will review each updated procurement plan prior to its publication. When appropriate, this activity may be undertaken in the field by ADB missions working with DOWR.

1. Civil Works

74. Civil works contracts costing less than \$40 million will be procured through national competitive bidding (NCB). This will include all 67 civil works packages for main, distributary and minor canals (total value of approximately \$57.3 million) and 12 civil works packages (total value of approximately \$13.4 million) for restoration of embankments. ADB standard bidding documents with post qualification under the single-stage two-envelope system will be used.

²³ Available at: <u>http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf</u>

²⁴ Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <u>http://www.adb.org/documents/handbooks/project-implementation/</u>

75. The first 4 NCB civil works packages advertised from each of the 11 participating irrigation division will be subject to prior review by ADB. This means that ADB would give its prior review at each step of the procurement process, i.e., bid document, invitation for bids, bid evaluation report, and recommendation for award. After the first 4 bids are evaluated by an irrigation division, and the bid evaluations are deemed by ADB to be of high quality, subsequent packages may be subject to ADB's post review. For these, DOWR will submit documentation, evaluations, and recommendations to ADB for review but may proceed to award the contract without waiting for the outcome of the ADB review. The bid evaluation reports should be submitted for post review as soon as they are completed but no later than 1 month after their issuance. ADB will endeavor to complete its review within one month. If ADB does not complete its review within 6 months after receipt of the required documents, for any given contract, it is assumed there is no objection to the award of contract.

76. For simple civil works of low value costing less than \$100,000, shopping procedure may be followed. There are, however, currently no such simple civil works planned under Project 2.

77. Labor-oriented civil works for (i) sub-minor canals in the irrigation subprojects and (ii) installation of equipment and other minor works for minor lift irrigation schemes will be implemented by mobilizing the concerned WUAs through community participation in procurement. ADB's Project Administration Instructions on Community Participation 5.10 will be followed. DOWR engineers will prepare the detailed design for the works, including bill of quantities, and will ensure adequate capacity of each WUA before awarding each contract. The rates for labor and materials will follow the government's norms. The assigned DOWR engineer will supervise the works and administer the contract. Subsequent contracts may be awarded to WUAs after successful completion of the first contract. The same process was used in Project 1 and worked well. The following community contracts are planned under Project 2:

Type of Works	Number of WUA Contracts	Cost Estimate
Construction of sub-minor canals and associated infrastructure in Machhagaon	347	\$2,918,000
Construction of sub-minor canals and associated infrastructure in Pattamundai	410	\$3,262,000
Construction of sub-minor canals and associated infrastructure in HLC Range-1	270	\$2,060,000
Construction of sub-minor canals and associated infrastructure in Ramial	98	\$687,000
Construction of sub-minor canals and associated infrastructure in Kanjhari	65	\$481,000
Construction of sub-minor canals and associated infrastructure in Kansabahal	130	\$79,000
Installment of pump sets, pipe systems, and other minor works in MLI schemes	750	\$4,167,000

78. Force Account will be applicable only for emergent nature of work with the concurrence of DOWR to be met out of state government of Odisha funds and to be accounted for separately under the project.

2. Goods and Related Services

79. In procuring goods and related services, ICB procedures will be used if the estimated cost is at least \$3 million and NCB procedures if the cost is between \$100,000 and \$3 million.

80. All NCB goods packages will be subject to prior review by ADB. This means that ADB would give its prior review at each step of the procurement process, i.e., bid document, invitation for bids, bid evaluation report, and recommendation for award.

81. Shopping procedure may be followed if the estimated contract amount is less than \$100,000 for procuring low-value, readily available off-the-shelf goods. All goods packages using shopping method will be subject to post review by ADB. For these, DOWR will submit documentation, evaluations, and recommendations to ADB for review but may proceed to award the contract without waiting for the outcome of the ADB review. The bid evaluation reports should be submitted for post review as soon as they are completed but no later than 1 month after the contract is awarded. ADB will endeavor to complete its review within one month. If ADB does not complete its review within 6 months after receipt of the required documents, for any given contract, it is assumed there is no objection to the award of contract.

3. Consulting Services

82. Project 1 includes a package of institutional strengthening and project management consultants (ISPMC) to fill the capacity gaps in delivering the intended project outputs while institutionalizing the PIM process and supporting steps for IWRM (145 person-months [p-m] of international and 665 p-m of national consultants). DOWR's contract with ISMPC is for the entire duration of the MFF.

83. In addition to the ISPMC, teams of consultants will be engaged to assist DOWR in implementing Project 2. All consultants will be recruited in accordance with ADB's Guidelines on the Use of Consultants.

IWRM Program Support Consultants (1 international expert for 18 person months and 3 84. national experts for a total of 96 person months) will be recruited using the individual consultant selection (ICS) method. They will enhance the technical capacity of OWPO in the implementation of the Project 2 IWRM Roadmap, with the target of the endorsement of the Baitarani RBO proposed BWRMP by the State Water Resources Board (SWRB) by June 2017. Consultants would provide expertise in river basin planning/management, water resource management (water demand), GIS, social scientist (community consultation / awareness raising; community participation), water guality/environmental scientist, agriculture, economist and watershed conservation. The broad terms of reference for the team are (i) to prepare the draft BWRMP by Dec 2016 for State Water Resources Board (SWRB) endorsement); (ii) revise the BWRMP and facilitate its endorsement for implementation by June 2017, and (iii) mobilize the Baitarani River Basin Organization (RBO). Specific activities would include, among others, (i) awareness raising and strengthening of the RBO and SWRB; (ii) assessing the need for and any benefit of a water allocation and licensing system; (iii) improving the hydrological database; (iv) fostering an increased understanding of environmental flows; (v) determining how to best finance water resources management; and (vi) developing increased capacity of OWPO). All activities should be in coordination with other ongoing programs within OPWO (e.g. AUSAID, e-Water-)

85. **Construction Supervision and Management (CSM)** consultants will be engaged as a firm using QCBS method. These national consultants (441 person months with 837 support staff person months) will assist the PMU to supervise and manage civil works contracts in 4 major and 3 medium irrigation subprojects. The consulting firm will establish a head office and 7 sub-project offices during construction to assist the PMU and SIO Managers to carry out all the duties normally associated with supervision and management of daily construction activities and environmental monitoring. The

overall duties of the Consultant site supervision teams are (i) to assist SIO Manager in contract administration and in monitoring and supervising the daily construction works of the project; (ii) provide a project monitoring service/system by adopting industry standard project management and quality assurance systems, methods and facilities for effective planning, scheduling, work programming with time and cost controls, (iii) identify and assess the critical issues/delay factors and formulate/recommend corrective to the construction contractor and the SIO/PMU; (iv) ensure that the construction work is accomplished in accordance with the technical specifications and other contract provisions; and (v) monitor the implementation of environmental management plans.

MLI schemes Implementation Consultants. One package of national consultants (831 86. person-months each) will be engaged as a firm using QCBS method. They will assist the PMU and SIOs to implement 750 MLI schemes. The MLI schemes consultant team will comprise: (i) a planning group (an engineer, a monitoring and evaluation expert, and three mobile teams each comprising an agriculture and irrigation specialist); and (ii) 3 field-based development groups (PIM specialist, agriculture extension specialist, irrigation engineer/ works inspector and NGO support staff). The planning group will be physically located in Bhubaneswar in the PMU, while the development groups (both consultants and field support staff) will be based in SIO offices / OLIC offices²⁵ in those districts where MLI schemes are being developed. Staff will be periodically moved as scheme district concentrations change. Each of the three SIO offices will handle about 150-250 MLI schemes at a time. This will vary depending upon operational districts which will be decided by PMU. The consultant will be engaged in: (i) preparation activities including reconnaissance and screening for MLI schemes selection, funding applications, appraisal and signing of agreements; and (ii) construction and PP / farmer support activities. The field/SIO-based consultancy will primarily be involved in the construction and PP / farmer support phases working together with OLIC staff in offices located in / near to the OLIC district based division offices.

87. **MIS Development, Implementation and Support Consultants.** One package of national consulting services will be engaged using QCBS method for development, implementation, training, and user support of web-based MIS with appropriate IT and web standards through review and adaptation of existing MIS design at PMU as "model module" for further enterprise-wise replication and integration. QCBS will be used because of the large size and complexity of the package. The aim is the establishment of physical and institutional information technology based program management links within and amongst PMU/DOWR by (i) development of IT/MIS infrastructure (hardware and software), (ii) networking or linking infrastructure to ensure connectivity and basic services across the department; and (iii) capacity building to strengthen technical and managerial skills; as well as (iv) completion of development and implementation of the IT/MIS integration as "model module" at the PMU. Duration of the services is estimated at 36 months, and two (2) packages are tentatively planned: (i) system definition, planning and software development; and (ii) system integration to establish the communications and physical backbone infrastructure. The selection methods will be determined in consultation with ADB once the terms of reference are prepared.

88. **PP Strengthening**. PP strengthening support will be recruited as three packages: (i) 7 Team Leaders cum PIM Coordinators and 7 Agriculture Marketing Managers will be engaged as individuals using ICS method; (ii) 75 technical services consultants will be recruited as a firm using QCBS method; and (iii) an accounting support agency will be recruited as a firm using QCBS method. QCBS will be used for the accountancy firm. All are the above are national consulting services for supporting PP strengthening, WUA-level participatory micro planning, and agriculture and livelihoods program delivery. The objective of the PP strengthening consultants is to facilitate formation,

²⁵ For improved team work it is essential that the SIO offices are located in the same building / adjacent to the OLIC offices (SIO office/ logistic/ infrastructure maintained by PMU).

mobilization and institutional strengthening of the WUAs in selected irrigation subprojects including planning, scheduling, implementing and monitoring, rehabilitation, construction, O&M and turning over to PPs the minor and sub-minor canal works and CAD works with on farm water management (OFWM). OFWM trainings include equitable water distribution, agriculture support, associated post-harvest operations (e.g. marketing and processing), livelihood enhancement of the users, and monitoring and reporting on the participation of women and economically vulnerable sectors of the community. The government will recruit from the communities community organizers (COs) and community resource persons (CRPs) to support the consultants. The consultants, COs, and CRPs will be organized into 7 subproject-specific Support Service Teams (SST), with the PIM coordinators serving as team leaders for each. The accountancy firm will support strengthening of PPs in bookkeeping and accounting.

89. **PMU Accountancy Support.** National individual consultants will be engaged using the ICS method to support and enhance the accounting and financial management functions of the PMU. These include a (i) financial management specialist (24 person-months, half-time) with adequate qualification, such as chartered accountant credentials; and (ii) 2 accountancy assistants (96 person months). They will together strengthen the PMU to integrate a financial management and monitoring system into the Project's MIS (being developed). This will include software integration into all accounting functions (i.e., using the Tally software to maintain and monitor accounts).

90. **CSO for Resettlement**. Implementation of the resettlement plans requires the assistance of a civil society organization (CSO) using QCBS method. See paragraph 103.

VI. SAFEGUARDS

91. **Indigenous Peoples.** Orissa has a relatively high indigenous population (22%) compared with other states. Under the OIIAWMIP, the Indigenous Peoples Development Framework (IPDF) will be the basis for developing indigenous peoples (IP) development plans for schemes having project impacts on affected indigenous people. Projects 1 and 2 are categorized B for IPs in accordance with ADB Safeguards Policy Statement (2009).

Regarding the Project1, three medium schemes were found to have high indigenous 92. 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.²⁶ 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. The SC/ST households are culturally and economically integrated with the mainstream population and that the subprojects will not cause any differential impacts on these communities. These communities will benefit from their participation through water user associations and greater access to on and off-farm employment opportunities through grant financing.²⁷ Project 1 has demonstrated that there is a high representation of indigenous peoples on WUAs in medium subprojects and their inclusion in decision making on subproject development. The investment program will not have any adverse impact on the ST population as per the SPS. However

²⁶ Indigenous peoples specific actions are in Appendix 12 of the Periodic Financing Request Report.

²⁷ Japan Fund for Poverty Reduction Grant 9134-IND: Capacity Building and Livelihoods Enhancement of Poor Water Users.

The IP planning framework is in Appendix 11 and the specific actions for IPs is in Appendix 12.

the project will be categorized as "B" for the IP issue and in case any ST households are found to be adversely impacted the mitigation measures would be implemented through provision in the Resettlement Plans.

93. During project preparation phase (through public meetings and consultations) it was confirmed that the ST households are not maintaining any specific social, economic, political, linguistic, customs or is maintaining any separate institutions which is distinct from the dominant society and culture. The impact on the ST population is insignificant and shall be addressed through the provisions provided in the RF and mitigation measures have been provisioned in the RP.

94. The main area requiring support during project implementation is inclusiveness and to ensure IPs are part of : (i) decision making processes related to irrigation scheme development; (ii) capacity building activities to support project awareness, facilitate skills development and provide opportunities for improving livelihoods and (iii) involvement with the WUA.

95. Livelihood enhancement activities are best implemented through a targeted intervention using grant financing. Project-1 experience demonstrates that the vast majority of efforts are entailed in overall PP strengthening. The staff resources available for vulnerable group are limited to 2 experts (from PPSU and ISPMC). The vulnerable groups are also a vast and diverse group - not only ST but including scheduled caste and other landless, marginal farmers and women. The \$2 million JFPR grant (JFPR9134-IND: Capacity Building and Livelihood Enhancement of Poor Water Users) will undertake livelihood interventions on medium irrigation schemes in the Project-1 and 2 areas. It has been under implementation since November 2011.

96. **Resettlement.** The MFF will only involve the renovation of the existing irrigation infrastructure, except for MCII scheme where the irrigation system will be expanded with minor canals. For the purpose of OIIAWMIP, a resettlement framework (RF) has been prepared following the Government's and OSG's laws and regulations, and ADB's SPS. Projects 1 and 2 are categorized A for involuntary resettlement.

97. 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.

98. For Project 1, an RP has been prepared for the MCII and about 70% of land acquisition (totaling 45 ha) has been completed. Due diligence conducted during Project 2 preparation for the sub-project shows that all land was acquired as per the prevailing laws and ADB's policy at the time of approval, and there are no outstanding complaints. The irrigation scheme is to be modernized under Project 2 but acquisition was completed in advance under Project 1 in compliance with ADB's Safeguard policy and Project 2 does not entail any land acquisition.

99. The proposed Project 2 is classified as category A for involuntary resettlement in accordance with ADB's Safeguard Policy Statement (SPS) 2009 Resettlement plans for Macchagaon, Pattamundai and HLC Range-1 (major) subprojects were prepared and submitted by the Government, which were disclosed in accordance with ADB's SPS. The main impact will be loss of assets (residential, commercial and common property structures) and livelihoods of non-titleholders on either side of the existing canal embankments. There is no acquisition of land due to implementation of

sub-projects under project 2. For all affected subprojects there will be compensation for loss of structures and income restoration assistance.

100. As agreed upon, the RP implementation cost will be borne by the EA and the livelihood assistance cost will be borne out of the OIIAWMIP loan fund for RP implementation. The DoWR has agreed to implement the RP. The Principal Secretary of DoWR will approve the required budget and funds are allocated by the government for the implementation of the RP. The amount of money spent for the RP implementation under the loan will later be sought to be reimbursed by ADB.

101. For resettlement planning and successful implementation of RP there will be a set of institutions involved at various levels and stages of the project. In addition to PMU, at each subproject level there will be a Social and Environment Implementation unit (SEIU). The role of SEIU will be to implement the RP with assistance from Civil Society Organizations (CSO) to ensure the status of affected households is be at least as well-off, if not better-off, than they would have been in the absence of the project. Under the supervision of the PMU R&R Officer and the SEIU's Resettlement Implementation Officer, an implementing CSO will be engaged by the EA of OIIAWMIP, which will play a key role in the RP implementation. The project related grievances at the subproject level. A Grievance Redress Committee (GRC) will be constituted at SEIU level comprising of the Project Director, PMU Resettlement Officer, resettlement specialist of the project management consultants, representative from local CSOs, elected representative from Municipality / Panchayat as observers, representatives of affected persons including vulnerable groups and women in the committee.

102. RP implementation for the subproject will be closely monitored by the EA. The monitoring mechanism will have a two-tier system i.e. Internal Monitoring and External Monitoring. Internal project monitoring and evaluation will be carried out by PMU/SIO and the CSO, covering the implementation progress as well as any updates of the RPs with the progress of the detailed design. As per the SPS 2009, for the subprojects with significant resettlement impacts (Category A), the EA will appoint qualified and experienced external experts who will verify the monitoring information and also advise on safeguard compliance issues, and if any significant involuntary resettlement issues are identified, a corrective action plan will be prepared to address such issues. The external monitor will submit its reports biannually to ADB through PMU.

103. **Environment.** The MFF has an environmental assessment and review framework (EARF) 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 SPS. 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.

104. 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. For Project-2, IEEs were prepared for the seven subprojects which are also classified as environmental category B.

105. Overall, the OIIAWMP 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,²⁸ (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. GENDER AND SOCIAL DIMENSIONS

106. 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 Project will provide measures to promote the interests of women and will ensure gender equity in governance and decision-making processes. The project will organize pre-election awareness campaign for active participation of women in PPs. The gender and development (GAD) strategy includes various steps to enhance women's access to information, participation in irrigation management institutions and ability to protect their interests and improve their livelihoods. The Orissa Pani Panchayat (Amendment) Act 2008 promotes representation of 33% women in WUA executive committees. WUAs will have a female representation of 33% women on all committees. A PP Women Collective in each of the 7 subprojects will address (i) the needs of women titleholders and WUA members; (ii) women farm laborers; (iii) developing and protecting access to irrigation water for alternative uses such as home gardens, livestock, and domestic consumption; and (iv) creation of capacity development and livelihood programs targeting women.

107. Women subcommittee members will be encouraged to attend the training offered through the participatory irrigation management unit for WUA and 33% of the training slots will be initially reserved for women. For general training offered to all WUA members, 50% of the slots will initially be reserved for women WUA members. Women heads of households will receive priority in services provided to farmers through the Project. In all activities supported through project funds, it will be stipulated that women will receive equal pay for equal work and will be part of contractual obligations. The Project will require that PIM Unit staff have at least 30% women contracted through project funds by year 3 of the project and 20% initially. The PIM unit staff will have at least 20% women trainers (in the first year to increase to 30% no later than year 3 of the Project. Project Steering Committee with participation from Department of Women and Child Development, Odisha to provide strategic guidance on gender mainstreaming activities of projects will be mobilized.

108. The project will support preparation of gender policy for DOWR in line with in line with National Women's Policy 2001 and Odisha State Policy for Girls and Women-2014 and establishment of gender budget cell at DOWR. 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 project implementation. Furthermore the Gender Action Plan (GAP) will support the gender mainstreaming activities of the project to ensure (i) The Orissa Pani Panchayat (Amendment) Act 2008 is implemented resulting in 33% participation of women in Executive Committee of WUAs (ii) 33% women participation is ensured in WUA subcommittees, (iii) PP Women Collective in each of the 7 sub-projects are formed and functional, (iv) ensure 30% employment for women in opportunities generated by the project and O&M works, (v) Project steering committee with participation from

²⁸ For major and medium-sized schemes, water balance was assessed to reconfirm the overall water availability with the updated hydrological data.

DOWR and Department of Women and Child Development, Odisha is mobilized and functional (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 (ix) provide women with training in crop and horticulture production and processing, (x) DOWR staff is sensitized about the gender concerns and mainstreaming gender issues.

GENDER ACTION PLAN FOR TRANCHE 2

Activity Indicators/Targets			Time Frame		
Output 1. State and water user institutions strengthened for water resources and irrigation management					
Activity 1.1 Implement the Orissa Pani Panchayat Act (2002), the Orissa Pani Panchayat Rules (2003) and the Orissa Pani Panchayat (Amendment) Act 2008 resulting in increased access of women to representation and participation, decision- making, governance and livelihood security	 Participation of Women in Pani Panchayats/WUA is increased in 3 medium subprojects - Kansbahal, Ramial and Kanjhari (Target: 33 % women by 2018) (Baseline – Kansabahal: 3.8%, Ramial: 0% and Kanjhari: 0%) 169 WUAs for major and medium, and 1,400 WUAs for MLI have enrolled women (Target: 30% women by 2018) (Baseline: 0%) 75% of at least 169 WUAs have been re-elected with increased representation of women in executive committees and all subcommittees (Target: 33% women by 2018) (Baseline: 0%) 	PMU	Year 1-3		
Activity 1.2 Form PP Women Collective to address i) the needs of women titleholders and PP members; (ii) women farm laborers; (iii) developing and protecting access to irrigation water for alternative uses such as home gardens, livestock, and domestic consumption; and (iv) capacity development and livelihood programs targeting women	 One PP Women Collective is formed in each of the 7 sub-projects; HLC Range 1, Patamundai, Machegaon, MCII (Mahanadi Chitropptla Island Irrigation), Kansbahal, Ramial and Kanjhari (Target: 100% women PP Members in each sub-project) 	SIO and PMC	Year 1-3		
Activity 1.3 Organize pre-election awareness campaign on women participation themes for participation of women in PPs	• At-least 2 awareness campaigns organized in each sub-project area before election (Target: Overall 50% women participants)	PMU and PMC	Year 1-2		
Activity 1.4 Include women in capacity building activities of PP members through PIM/CAD Directorate	• At least 2 capacity building programs for PP members per year in each sub- project area (Target: 33% women in Year 1 and 50% women in Year 3)	SIO and PMC	Year 1-3		
Activity 1.5 Gender concerns/issues in PIM are adequately addressed	• DOWR Gender policy is prepared in line with National Policy for the Empowerment of Women 2001 and Odisha State Policy for Girls and Women-2014, and is approved and adopted by DOWR; and Gender Budget cell in DOWR is established to focus on gender-based analysis and an equality-oriented evaluation of the distribution of resources at DOWR	PMU	Year 3		
Activity 1.6 Ensure women's equitable participation in all processes related to preparing SIP & PP level Micro Plans	 Women participate in SIPs & WUA level micro plan meetings in each sub- project area (Target: 30% women) 	SIO	Year 1-3		
Activity 1.7 Develop an advocacy brief gender and social inclusion in WUA along with best state practices to enable gender responsive WUA norms	 Advocacy brief prepared and disseminated in regional language at all sub- project area 	PMC	Year 1-3		
Activity 1.8 Provide services to farmers through project such as (i) support women in their home-based post-harvest production, value addition and marketing activities; (ii) improve processing of agricultural produce and diversify to high value vegetable production; and (iii) provide women with training in crop and horticulture production and processing	 Women farmers / heads of households are identified and prioritized for services provided by project (Target: All women farmers/heads of households in sub-project area) (Baseline: To be established within 3 months of the commencement of project) 	SIO	Year 1-3		
Output 2. Irrigation system infrastructure modernized and m	anaged				
Activity 2.1 Train WUA members on O&M of irrigation system infrastructure	 At least 169 WUA's O&M and Water management Sub-committee Members at 7 sub-project area are trained on O&M of irrigation system infrastructure (Target: Overall 33% women WUA members) 	SIO, PMU	Year 1-3		
Activity 2.2 Ensure equal employment opportunities for women in the project activities (skilled and unskilled)	Number of women employed across all project sub-activities in both skilled and unskilled categories (Target: 30% women)	PMU	Year 1-3		
Activity 2.3 Ensure that all bidding documents include a clause	• All bidding documents include relevant clauses on gender and core labor	PMU, PMC	Year 1-3		

requiring contractors to adopt targets for the employment of women laborers and provision of core labor standards (incl. equal wages for work of equal value)	standards (including equal wages for work of equal value) (Target: 100% - All bidding documents)		
Activity 2.4 Orient PP Office Bearers and contractors on the implementation of the clause elaborating actions related to gender and core labor standards	 All PP Office Bearers and engaged contractors oriented on provisions related to implementation, monitoring and regular reporting of gender and core labor standards with focus on GOI/GoO legislations and regulations²⁹ (At-least two workshops organized for PP Office Bearers and Contractors) (Target: 100% - All PP Office Bearers and all Contractors) 	PMC	Year 1-2
Output 3. Project management systems effective			
Activity 3.1 Develop MIS with social and gender indicators	 MIS with social and gender established and operational Data disaggregated by sex, ethnicity and vulnerability levels is collected and reported every six-months 	PMU, PMC, SIO	Year 1
Activity 3. 2 Ensure Participation of women in all project related implementation activities	 Women are employed/contracted as PIM Unit Staff (Target: 20% women in year 1, 30% women in Year 3) and Women trainers are employed/contracted by PIM Unit (Target: 20% women in year 1, 30% women in Year 3) Women are prioritized to fill vacant and new positions (under PIM/CAD Directorate) (Target: 20% women in year 1, 30% women in Year 3) 	PMU	Year 1-3
Activity 3.3 Gender-sensitive training course/modules in place for DOWR staff	 Gender-sensitive training course/module for training of DOWR staff is prepared and annual gender training³⁰ is organized for DOWR Staff and orientation on gender issues in irrigation sector and gender sensitive policies, schemes and legislations is provided (Target: All Staff of DOWR) 	PMU and PMC	Year 1-3
Activity 3. 4 Project steering committee with participation from DOWR and Department of Women and Child Development, Government of Odisha is mobilized and functional	• The Directorate of Women and Child Development is a member of the project Steering Committee and Steering Committee Meetings are organized every six-months	PMU	Year 1-3
Activity 3.5 GAP Monitoring and Reporting	 Gender Focal Point in PMU and GAP Coordinators at SIO are designated/identified and are assigned the responsibility of quarterly progress reporting of GAP and Gender Specialist in PPSU is appointed/recruited Vulnerable Group (including SC and ST) and Gender Specialist is appointed for 36 person-months at PMC for implementation and monitoring of GAP GAP implementation plan aligned with GAP activities with project outputs is prepared and operationalized and Component-wise annual plan and budget for gender-related activities is prepared and integrated with overall annual plan of the project GAP progress update is prepared and reported (Target: Every quarter GAP update is prepared/reported) 	PMU, PMC and SIO	Year 1-3

CAD = Command Area Development; DOWR = Department of Water Resources, Government of Odisha; GAP = gender action plan; GOI = Government of India; GoO = Government of Odisha; LIP = lift irrigation point; O&M = Operations and Maintenance; PIM = participatory irrigation management; PMU = project management unit; PMC = project management consultants; PP = pani panchayat; MIS = management information system; PPSU = pani panchayat support unit; SC = scheduled caste; ST = scheduled tribe; SIO = Sub-project implementation office; SIP = sub project implementation plans; WUA = water user's association.

²⁹ Core labor standards, Contract Labor Regulation and Abolition Act 1970, the Regulation of Employment and Condition of Services Act 1996), the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.

³⁰ Including orientation on Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.

VIII. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
 Impact 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 Institutionalization of effective mechanisms to put into operation PIM-based agriculture growth 	 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 	 State and district statistics on agriculture, incomes, and HDIs Baseline data and follow on BME reports Annual report of MOWR and DOWR 	 Assumptions Stable political and local security conditions Damage from natural calamities are rehabilitated and managed Risks International terms of trade of agriculture products turns adverse
Outcome 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	 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) (Specific targets will be shown in each SIP of each scheme.) 	 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 	 Assumptions 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 Risks Extraordinary climates such as droughts and cyclones
2. Improved institutional performance of irrigation service delivery (with PIM) and water resources management (with IWRM)	 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 	 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 	 Assumptions (Same as above) Beneficiary willingness to pay for set water tariffs Risks Local or internal conflicts threatening WUA performance
Outputs A. Productive and Sustain- able Irrigated Agriculture Management Systems 1. Participatory Planning and WUA strengthening (i) Participatory scheme planning with feasibility studies and subproject implementation plan (SIP)	 16 major and medium, and 1,400 MLI subprojects appraised with SIPs with clear output targets and programs. 	 Prepared appraisal reports Project progress reports Consultants' reports 	 Assumptions Participatory process is duly followed by all. Capacity strengthening and quality control are

A. Design and Monitoring Framework for the Facility

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
(ii) WUA-level micro plans	• For major and medium schemes WUA level micro- plans prepared and endorsed.	ADB review missions	effective with qualified consultants engaged. • Beneficiaries support collective action.
(iii) Strengthened WUAs: Viable WUAs set up to become effective community organization ready to receive investment support and to enhance agriculture production	 450 WUAs for major and medium, and 1,400 WUAs for MLI are strengthened with: 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 	 Project MIS Project progress and completion reports Consultants' reports ADB review missions WUA constitution and its rules Signed implementation agreements 	 Assumptions (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	 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 	 Project MIS Project progress and completion reports Consultants' reports ADB review missions Third party inspectors' report 	 Assumptions (Same as above) WUA are willing to extend CAD and conjunctive use with beneficiary contribution
3. Agriculture Development and Livelihood Enhance- ment: Stipulated services in SIPs and micro plans provided, and targets set therein are achieved	 WUAs achieve plan targets in cropping pattern and intensity, inputs, yield levels, etc. WUAs establish linkages for collective input delivery, ex- tension and product marketing Livelihood targets as set out in micro plans are achieved Trained women groups account for 33% of total 	• (Same as above)	 Assumptions (Same as above) WUA members are willing to adopt modern agriculture practices Risks Natural calamities Volatile price reduction of agriculture products
4. Sustainable O&M Systems Established: Irrigation schemes operated and maintained on a sustainable basis	 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 	 (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 (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 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 	 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) 	 Policy document Policy review reports Updated state water plans Basin development plans Refined WUA Act and Rules Project progress reports 	 Assumptions 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
basins		ADB review missions DOWP appual report	
(iii) WUA Act and Rule refined for more sustainable and inclusive PIM	 WUA Act and Rule revised (2008) with stronger WUA institutional continuity and head-tail representation by Refined act and rule made operational (2010) 		
 DOWR Institutional Setup, Structure, Skill Mix, and Business Processes Strengthened (i) Institutional development vision and strategy refined (ii) Permanent PIM directorate established (iii) Quality control cell established (iv) DOWR capacity develop- ment plan (CDP) refined (v) Water and Land Manage- ment Institute (WALMI) reforms with autonomy 	 Vision and strategy document (2009) PIM directorate set up, staff deployed, and made opera- tional 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 form market (2008) 	 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 (Same as above) DOWR leadership dynamic and support the change process Staff level support for necessary reforms
 Systems to Support Sustainable O&M Fund allocation following Financial Commission (FC) Water rates revised to meet the allocation needs Collection improved with WUA involvement Land records improved providing WUA-specific data for collection/demand Scheme MIS for O&M performance monitoring and planning DOWR establishes linkage between water rate collection and allocation Pilot delegation of water tariff collection and retention by WUAs 	 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) 	 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 • (Same as above)
 4. Progress of Actions towards Operationalizing IWRM (i) Appropriate IWRM functions and institutional arrangements defined (ii) Institutions established to operationalize IWRM (iii) Participatory RBO established with decision support systems (DSS) 	 Institutional arrangements clarified for IWRM functions (2009) Establishment of IWRM institutions (2012) RBO set up and made operational with effective DSS (2012) 	 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 • (Same as above)

Design Summary	Performance Targets/	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 	 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) 	 Detailed operational guidelines Consultants reports Special study reports including the third party Project progress reports ADB review missions DOWR annual report 	 Assumptions Sufficient counterpart funding Engagement of qualified consultants and NGOs
 Training/Capacity Development: Capacities of project institutions are strengthened through training (for Project management, PIM, IWRM, & agriculture development) 	 Capacity Development Plan (CDP) is prepared and implemented (2009) Project institutions are fully operational through project management support (2009) 	 CDP CDP implementation report (by consultants) Project progress reports ADB review missions DOWR annual report 	 Assumptions Effectiveness of training and trainers Retention of the developed capacities Engagement of qualified consultants and NGOs
Activities with Milestones		Inputs	
 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. 		 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 	
 2.2 Support for preparing PS/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. 		 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 	
 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 2009. 		 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 	
5.2 Inception mission within 200 2012, and regular review mis	8, mid-term review mission in ssions	Total: \$236.4 million	consultants

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.

B. Monitoring

109. **Project performance monitoring.** DOWR will establish a simplified project monitoring system (including an excel spreadsheet based management information system) within three months of the effectiveness Project 2. This will be based 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 for the Program as well as for the Project 2. It is recommended that the database may be held within the PIM-CAD Directorate for sustainability of data and future reporting and references.

110. Baseline data is available for Projects 1 and 2 which will be used for the database. Whilst this has been challenging to establish under Project 1, it is an essential requirement for Project 2 and periodic collection of field data, use of the database and reporting must be established within the first 6 months of the project effectiveness.

111. 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 2 to evaluate the progress of roadmap actions, performance of the Program institutions, and of all process and output indicators, and future implementation plans.

Compliance and Safeguard monitoring. Monitoring of compliance (including the 112. monitoring of policy, legal, financial, economic, and other covenants) and safeguard issues (including the monitoring of social and poverty action plans), will be undertaken by the PMU and reported in the MIS database. The main aim will be for the PMU to ensure that the Project is implemented with due concern for safeguards and quality and specifically to ensure that these issues are adequately addressed to the requirements of State government of Orissa and ADB. This will include: (i) environmental quality monitoring (as referred to in the IEE and EARF); (ii) gender mainstreaming; (iii) potential resettlement impacts like compensation for loss of income and livelihood restoration; and (iii) guality of work necessary to ensure sustainable outputs. The monitoring mechanism will have a two-tier system at the EA level i.e. internal Monitoring and external Monitoring. Internal project monitoring and evaluation will be carried out by PMU/SIO and the CSO. As per the SPS 2009, for the subprojects with significant resettlement impacts (Category A), the EA has to appoint gualified and experienced external experts who will verify the monitoring information. External Monitor will verify the monitoring information and also advise on safeguard compliance issues, and if any significant involuntary resettlement issues are identified, a corrective action plan will be prepared to address such issues. The external monitor will submit its reports biannually to ADB through PMU.

113. **Gender and social dimensions monitoring.** Status of the implementation of the Gender Action Plan will be discussed at each ADB review mission apart from being integrated into quarterly progress reports. GAP implementation progress updates (in a table format) will be included in the project quarterly progress reports). Overall responsibility for monitoring and reporting on GAP implementation will be with the PMU assisted by PPSU Gender Specialist and

Vulnerable Group (including SC and ST) and Gender Specialist at ISPMC. A management information system (MIS) will be established accordingly at Project-1 start up to ensure data is stored and managed well for monitoring. The program GAP sets out the gender monitoring indicators and targets for each project component. Further, all data on staffing and recruitment, participation, consultation, wages, training, safeguards implementation and compensation, and impacts will be sex disaggregated. GAP Implementation Progress Update format is attached in Appendix 15.

C. Evaluation

114. The DOWR will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions; (c) updated procurement plan and (d) updated implementation plan for next 12 months; and (iii) a project completion report within 6 months of physical completion of the Project. To ensure projects continue to be both viable and sustainable, project accounts and the executing agency annual financial statements, together with the associated auditor's report, should be adequately reviewed.

115. The report will cover the relevant indicators as specified in MIS database, 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 16. 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, SGO will submit to ADB a project completion report. Within three months of the ADB a program completion report.

D. Reporting

116. PMU will provide ADB with: (i) QPRs in a format consistent with ADB's PPMS; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions; (c) midterm report 2 years after effectiveness of Project 2; (c) updated procurement plan; (d) updated implementation plan for next 12 months; and (e) a PCR within 6 months of physical completion of Project 2. To ensure projects continue to be both viable and sustainable, project financial statements and the executing agency's audited financial statements, together with the associated auditor's report, should be adequately reviewed.

E. Stakeholder Communication Strategy

117. A comprehensive stakeholder analysis and strategy has been prepared for the Project which has a strong theme of participation in the WUA strengthening activities. The information, education and communications activities include the main tools for communication and program awareness raising are tabulated below:

Written	Verbal	Visual
Education / Training Material	Folk Theatre / Folk Art Form	Film / Electronic Media Campaign
Pamphlet / Brochure / Newsletter /	Public Meeting / Campaign /	Display / Poster/ Wall
Written	Verbal	Visual
---------------------------------------	-----------------------------	-------------------
Presentation	Public Briefing	chalkings
Website / Blog / Group Email / Social	Groups Discussion /	Exhibition / Fair
Network Sites	Stakeholder Interview /	
	Personal Contact	
Study Report / Case Study / Working	Workshop / Seminar /	
Paper / Technical Note	Consultation Meeting	
Press Release / Advertisement	Media Briefing	
Site Announcement Sign	Site Visit / Exposure Visit	
Letter / Email / Memo / Notice		
Policy / Legislation / Government		
Order		
Agreement / Contract / Memoranda of		
Understanding		
Action Taken Report		

118. Specifically, the strategy will be two-pronged: (i) at headquarters: DOWR for road map related activities, specifically IWRM interventions and (ii) PIM-CAD through PIM-CAD Directorate and PMU focusing on WU strengthening. Overall there will be a project website to will disseminate information regarding the program objectives, progress and any events etc. The IWRM activities will develop a comprehensive communications strategy as part of the IWRM road map and this will be followed; and (ii) at subproject level communications will be rigorous as part of the social mobilization process and will include, workshop, training, focus group discussions etc.

119. Public notification of subproject milestones and safeguards, as well as progress towards these milestones and measures taken to impose safeguards will be posted on DOWR, and will be displayed prominently in hard copy at a central location within the subproject.

IX. ANTICORRUPTION POLICY

120. The Government, State, DOWR, and implementing agencies are advised of ADB's Anticorruption Policy (1998, as amended to date). Consistent with its commitment to good governance, accountability and transparency, implementation of the Projects under the Facility shall adhere to ADB's Anticorruption Policy. ADB reserves the right to review and examine, directly or through its agents, any alleged corrupt, fraudulent, collusive, or coercive practices relating to the Projects under the Facility. In this regard, investigation of Government officials, if any would be requested by ADB to be undertaken by the Government. To support these efforts, relevant provisions of ADB's Anticorruption Policy are included in the Loan Regulations, Loan Agreement and the bidding documents. In particular, all contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the project executing agency and implementing agencies, and all contractors, suppliers, consultants, and other service providers as they relate to Projects under the Facility. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the Projects.

121. The government will ensure that (i) DOWR conducts periodic monitoring inspections on all contractors' activities related to fund withdrawals and settlements; and (ii) all contracts financed by ADB in connection with the project include provisions specifying the right of ADB to

audit and examine the records and accounts of DOWR and all contractors, suppliers, consultants and other service providers as they relate to the project.

122. ADB's Anticorruption Policy designates the Office of Anticorruption and Integrity (OAI) as the point of contact to report allegations of fraud or corruption among ADB-financed projects or its staff. OAI is responsible for all matters related to allegations of fraud and corruption. For a more detailed explanation refer to the Anticorruption Policy and Procedures. Anyone coming across evidence of corruption associated with the project may contact the Anticorruption Unit by telephone, facsimile, mail, or email at the following numbers/addresses:

by email at integrity@adb.org or anticorruption@adb.org by phone at +63 2 632 5004 by fax to+6326362152 by mail at the following address (Please mark correspondence Strictly Confidential):

Office of Anticorruption and Integrity Asian Development Bank 6 ADB Avenue Mandaluyong City 1550 Metro Manila, Philippines

X. ACCOUNTABILITY MECHANISM

123. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.³¹

XI. RECORD OF FAM CHANGES

124. The first version of the FAM was prepared and agreed upon at loan negotiations for the MFF. All revisions/updates during the course of implementation will be retained in this Section to provide a chronological history of changes to implementation arrangements recorded in the FAM.

FAM approved during loan negotiations of the MFF Revision during preparation of Project 2 August 2008 June 2015

³¹ For further information see: <u>http://www.adb.org/Accountability-Mechanism/default.asp</u>.

POLICY AND INSTITUTIONAL ACTIONS

	Key Issues and Actions	Actions by	Time Frame	Performance Indicators
A. Overall Policy a	and Plan Framework			
1. State Water Pol	licy			
a. Finalize the po	blicy (revising the policy adopted in 1994)	OSG	Mar 2007	Policy adopted in March 2007
b. SWRB activate the policy to p	ed to initiate and guide the actions specified in ut the policy principles into operation	OSG	Mar 2008	Actions specified in the policy initiated
2. State Water Pla	in			
Expand the state plan	ate plan with the river basin plans, building on approved in 2004	DOWR	Dec 2018	Basin plans for the four river basins prepared in consultation with stakeholders
B. Participatory Irr	rigation Management			
1. Organizations 1-1.Department of	Water Resources			
a. Establish mult additional sec	idisciplinary PIM–CAD directorate headed by retary-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 DO	OWR setup into directorates of irrigation and of	OSG DOWR	Dec 2007	DOWR offices realigned (IWRM to include water planning, tariff, hydrology, and groundwater)
c. Initiate organiz formulate insti	zational change management process to tuional vision and strategy	DOWR	Started in Mar 2008	Vision and strategy adopted by mid-2009; reinvigorate under Project 2 and provide revised report for change management
d. Issue staff inst reflect it in the	tructions on the client orientation to WUAs, and staff performance evaluation system	DOWR	Dec 2008	Staff attitudes on working relations improved to take WUAs as partners
e. Start implement including design	nting a capacity-development plan for PIM gn skills for structures and O&M arrangements	DOWR	Dec 2008	Capacity-development plan adopted, training started and capacity improved
f-1. Rationalize no f-2. Train existing support staff, a	ntechnical field staff with natural attrition policy. nontechnical staff as canal operators and WUA 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 impr monitoring and	oved MIS for scheme-wise O&M performance	DOWR	March 2015 (framework)	Data collection and entry systems in place and reports produced and distributed to managers
h-1. Establish qual and initiate thi	ity control cell to engage third-party consultants rd-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 o participants in	quality monitoring by engaging WUAs as monitoring	DOWR	Starting Apr 2009	Construction quality ensured with WUA engagement in quality monitoring
h-3. Implement and internal audit v records in rela	nual full financial audit of all offices through wing of DOWR inspecting all transaction ation to the OIIAWMIP	DOWR	Starting Apr 2009	Efficiency of internal financial management enhanced with reduced audit observations
i. Prepare DOWR ge	ender policy	DOWR	2015-2017	DOWR Gender policy is prepared in line with National Policy for the Empowerment of Women 2001 and Odisha State Policy for Girls and

Key Issues and Actions	Actions by	Time Frame	Performance Indicators
			Women-2014, and is approved and adopted by DOWR
 1-2.Water and Land Management Institute 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 outside OSG and WUA representatives Appointment of qualified director, with greater autonomy 	OSG DOWR	Ongoing since Dec 2007 Apr. 2008 (completed)	A full-functioning and revitalized board in place 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 overlay 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 b. To implement the following in OIIAWMIP: Participation of WUA and higher-level committees in the 	OSG DOWR	Feb 2008 (Cabinet approved) Dec 2008 (PP Act); June 2018 (PP Rules) Apr 2009 (to start)	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%) Planning and implementation recognizes WUA
 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. 			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
Irrigation Management Transfer			
a. Establish information, communication, and education strateg and plan, and start its implementation	y DOWR	Commence 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 2013 (in OIIAWMIP)	WUA's water distribution improved with increased irrigated area, cropping of high value low water-use crops, etc. In progress on medium subprojects.
d. Extend the irrigation management transfer to distributary canal levels with good WUA performance		Dec 2013	

	Key Issues and Actions	Actions by	Time Frame	Performance Indicators
4.	Sustainable Operation and Maintenance			
4-1.	. Operation and Maintenance Fund Allocation and Revenue			
	Targets			
а.	To allocate O&M fund following the Finance Commission	Finance	FY2006 (12th	Annual allocation reflecting the level
		Department	FC completed)	recommended by the Finance Commission
b.	To revise water tariff levels to meet the O&M fund allocation:	OSG	Mar 2017	Water tariff levels set to fully recover the O&M
	to increase industrial water tariff following FY2006 increase			fund allocation
с.	Undertake institutional assessment and establish a regulatory	OSG/	Dec 2017	Regulatory organization set up, and water rates
	authority or commission for water tariff fixing	DOWR		defined with a set of standards and guidelines
4-2.	. Reducing Operation and Maintenance Revenue Gaps			
а.	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	DOWR/	Starting 2009	Reduced gap (40% at present) in irrigated area
	Revenue Department to reduce the present wide gaps, using	Revenue	(OSG order)	assessed by DOWR and certified by the
	the MIS	Department		Revenue Department
С.	Prepare and put into operation guidelines for scheme-wise	DOWR	Dec 2016	Improved water rate collection through
	O&M fund allocation with performance-based criteria			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	Revenue	Dec 2016	Revenue Department to provide data to
	water rate demand and collection to WUAs and DOWR	Department		introduce the system of allocating irrigation
-	Change in irrigation rules as necessary to effect the above			water and O&M funds with direct link to the
	with the instruction to the tariff collectors		D 0017	water rate collected
e.	Introduce performance bonus or penalty in DOWR's grant	OSG/	Dec 2017	Performance-based provision of grant
4.0	System to WUAS	DOWR		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)	Commission norm (Rs120/ha)
b.	Joint decision making on scheme-wise O&M plan with WUAs,	DOWR	Starting Jan	Decision making on O&M that substantially
	with providing fund to top up grant to WUAs and local		2009	reflects WUA views
	resource mobilization by WUAs			
C. I	ntegrated Water Resources Management			
а.	Assess appropriate IWRM functions and institutions (e.g., an	DOWR/	Dec 2010	Improved planning, regulation, and coordination
	authority or commission) including water tariff fixation,	SWRB		mechanisms for water resources management
	allocation, entitlements, and other regulatory functions			operational
b.	Undertake studies for appropriate legislation of the above	DOWR	Jun 2009	Institution roles with respect to policy, regulation,
	organization and functions		(pilot to start)	and service delivery defined
С.	Undertake studies to pursue appropriate environmental	DOWR	Jun 2009 (to	Improved planning, coordination, and conflict
	regulation, and prepare an action plan		start)	resolution, and management within basins
d.	Strengthen database and decision support systems	DOWR	Jun 2009 (to	Improved database and DSS contributing to
			start)	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 WUAs.

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.

2. 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.

3. Strengthening 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 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.¹

¹ 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.

To meet the increased capacity development need of the WUAs of the state and DoWR staff, WALMI's infrastructure need to be upgraded with state-of-the-art technology and provision is made in the project in the training, survey and investigation, studies and civil works components.

4. 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 to participate in training. 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 an appropriate example river basin such as the Murray Darling Basin in Australia to provide a better understanding of River Basin Organizations.

5. **Capacity Building for DOWR and Project Specific Partner Institutions**2

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.

² Partner institutions include the Departments of Agriculture, Fisheries, Child and Women's Affairs, Scheduled Caste and Scheduled Tribe.

- The Safeguards Staff of PMU will regularly participate in the capacity building programme organised by INRM Delhi and other institutions working on the issues of resettlement.
- The PMU will also organise the visits to the other Category A project under implementation to gain experience about the best practices and challenges during RP implementation.
- Provide the participants of the District Level Coordination Committee with an overview of the Project and it 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.

Corporate change related training will be included to assist DOWR with the institutional 9. 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.³

The Project will provide formal training to the DOWR IWRM Directorate and related 10. 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.

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		

Table A2.1. T	raining Summary	for DOWR and	Partner Agencies
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Participatory irrigation management

³ The corporate MIS system is to be developed and established during Project implementation.

Training Module	Indicative Content	Participants	Resource Persons
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 headquarters and field staff from the CAD / PIM Directorate.	PMU to organize
Operation and Mainte	nance 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
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

Training Module	Indicative Content	Participants	Resource Persons
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 Trainin	ng		
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
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 Panchayats

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.

The delivery of training will be timed to coincide with specific development phases of the 13. 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 Newsletter: initial issue to provide	Support Services Team	All potential Pani Panchayat members	
orientation to the Project	TA Team		
Water Management Drama	TA Team working with drama groups contracted by the PMU		
PP Act Training Training in Micro-plan preparation PP Management Orientation Course	Support Services Team	Chak and Executive Committees of the Pani Panchayat	
Orientation to Irrigation System Principles MIS Orientation	SIO manager and supporting engineering staff MIS Expert	PP Executive Committee	

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

Capacity Strengthening Activity	Responsibility	Participants
Construction Observation Training PP Financial Management	SIO; TA Team to assist Support Services Team	PP O&M subcommittee Chak and Executive
Environmental Training Gender Training		Committees of the Pani Panchayat
PP Management Roles and Responsibilities		
Agriculture Training		Selected members of the PP General Body
Fisheries Training		

Agriculture Marketing		
Constructing and rehabilitating	Support Services Team	PP O&M Committee
minors and sub-minors		
Exchange Visits to better	SIO to arrange	PP Executive Committee
functioning PPs	-	

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	
Monitoring water delivery to PPs	SIO	
On-farm Water Management	Support Services Team	PP Members

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	TA Team
Arrangements	
PP Act, Rules, and Management	WALMI
Irrigation System Familiarization	SIO Engineering Staff
O&M Requirements	_

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.

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-l	<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	All 4 river basins	Objective: Renovation of about 650 existing very minor

Table A4.1. Project–1 Scheme Profile

irrigation	north of	lift irrigation schemes (average NIA of 22ha)							
schemes	Mahanadi Biver	Main scope: WIIA strengthening infrastructure							
Conomico	basin	renovation handover.	agı	riculture,	facility	O&M	training	and	

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

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).

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.

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 filed 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 multidisciplinary 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 Summary	Performance Targets/	Data Sources/	Assumptions and Risks		
 Impact 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 2. Initial institutionalization of effective mechanisms to put into operation PIM-based agriculture growth 	 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 	 State and district statistics on agriculture, incomes, and HDIs Baseline data and follow on BME reports Annual report of MOWR and DOWR 	 Assumptions Stable political and local security conditions Damage from natural calamities are rehabilitated and managed Risks International terms of trade of agriculture products turns adverse 		
Outcome 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	 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) (Specific targets will be shown in each SIP of each scheme.) 	 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 	 Assumptions 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 Risks Extraordinary climates such as droughts and cyclones 		
2. Improved institutional performance of irrigation service delivery (with PIM) and water resources management (with IWRM)	 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 	 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 	 Assumptions (Same as above) Beneficiary willingness to pay for set water tariffs Risks Local or internal conflicts threatening WUA performance 		
OutputsA. Productive and Sustain- able Irrigated Agriculture Management Systems1. Participatory Planning and WUA strengthening(i) Participatory scheme planning with feasibility studies and subproject implementation plan (SIP)(ii) WUA-level micro plans	 For all the major & medium sub projects up to 3rd tranche, and 650 MLI (for 1st tranche) subprojects appraised with SIPs with clear output targets and programs. For major and medium schemes WUA level micro- 	 Prepared appraisal reports Project progress reports Consultants' reports ADB review missions 	 Assumptions Participatory process is duly followed by all. Capacity strengthening and quality control are effective with qualified consultants engaged. Beneficiaries support 		

DESIGN AND MONITORING FRAMEWORK (PROJECT 1)

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
	plans prepared and endorsed.		collective action.
(iii) Strengthened WUAs: Viable WUAs set up to become effective community organization ready to receive investment support and to enhance agriculture production	 160 WUAs for major and medium, and 650 WUAs for MLI are strengthened with: 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 	 Project MIS Project progress and completion reports Consultants' reports ADB review missions WUA constitution and its rules Signed implementation agreements 	 Assumptions (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	 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 	 Project MIS Project progress and completion reports Consultants' reports ADB review missions Third party inspectors' report 	 Assumptions (Same as above) WUA are willing to extend CAD and conjunctive use with beneficiary contribution
 Agriculture Development and Livelihood Enhance- ment: Stipulated services in SIPs and micro plans provided, and targets set therein are achieved 	 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 	• (Same as above)	 Assumptions (Same as above) WUA members are willing to adopt modern agriculture practices Risks Natural calamities Volatile price reduction of agriculture products
4. Sustainable O&M Systems Established: Irrigation schemes operated and maintained on a sustainable basis	 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 	 (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 (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 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 	 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 	 Policy document Policy review reports Updated state water plans Basin development plans Refined WUA Act and Rules Project progress reports 	 Assumptions Political support to sustain and proceed with reforms Active stakeholder support and participation Effective capacity development support through qualified

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks		
with development plans for the four northern river basins	participation (2012)	ADB review missionsDOWR annual report	consultants engaged		
(iii) WUA Act and Rule refined for more sustainable and inclusive PIM	 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) 				
 DOWR Institutional Setup, Structure, Skill Mix, and Business Processes Strengthened (i) Institutional development vision and strategy refined (ii) Permanent PIM directorate established (iii) Quality control cell established (iv) DOWR capacity develop- ment plan (CDP) refined (v) Water and Land Manage- ment Institute (WALMI) reforms with autonomy 	 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 form market (2008) 	 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 (Same as above) DOWR leadership dynamic and support the change process Staff level support for necessary reforms 		
 Systems to Support Sustainable O&M Fund allocation following Financial Commission (FC) Water rates revised to meet the allocation needs Collection improved with WUA involvement Land records improved providing WUA-specific data for collection/demand Scheme MIS for O&M performance monitoring and planning DOWR establishes linkage between water rate collection and allocation DOWR delegation of water tariff collection and retention by WUAs 	 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) 	 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 • (Same as above)		
 4. Progress of Actions towards Operationalizing IWRM (i) Appropriate IWRM functions and institutional arrangements defined (ii) Institutions established to operationalize IWRM (iii) Participatory RBO established with decision support systems (DSS) 	 Institutional arrangements clarified for IWRM functions (2009) Establishment of IWRM institutions (2012) RBO set up and made operational with effective DSS (2012) 	 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 • (Same as above)		

Design Summary	Performance Targets/	Data Sources/	Assumptions and Risks			
 5. Project Management System Established and Made Fully Operational DOWR offices Line agencies Local governments WUAs NGOs Private providers 	 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) 	 Detailed operational guidelines Consultants reports Special study reports including the third party Project progress reports ADB review missions DOWR annual report 	 Assumptions 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) Capacity Development Plan (CDP) is prepared and started to be implemented (2009) Project institutions are fully operational through project management support (2009) 		 CDP CDP implementation report (by consultants) Project progress reports ADB review missions DOWR annual report 	 Assumptions Effectiveness of training and trainers Retention of the developed capacities Engagement of qualified consultants and NGOs 			
Activities with Milestones		Inputs				
 1.1 Establishment of DOWR PIN 2007, recruitment of consult. 1.2 Preparation of all project-relation including project implementation. 1.3 Finalize FS/SIP for all major tranche by 2011, and 650 m 1.4 Implementation of actions for development between 2008. 2. By Consultants and NGOs 	A Directorate, PMU and SIOs by ants and NGOs by 2008. ated guidelines and manuals ation plan by mid-2008. medium schemes up to 3 rd inor lift schemes by 2011. r policy and institutional -13	 Incremental staff, operating, and other implementation expenses Training (through support organizations) Mobilization of counterpart fund 				
 2.1 Capacity development and puntil 2013. 2.2 Support for preparing FS/SII project arrangements and in 2.3 Completion of training for tra 3. By WUAs/ Beneficiaries 3.1 Information campaign, mem FS/SIP preparation, and upf 3.2 Participation in design, cons civil work implementation by 	Project management activities Ps by 2011, operationalization of stitutional actions by 2013. unche-1 schemes by 2013. ber enrollment, participation in ront cash contribution by 2013. truction monitoring, and simple 2013.	 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 				
 3.3 Self-sustain O&M of transfer 4. By Support Organizations 4.1 FS/SIP preparation and NGG 4.2 Implement resettlement plant 4.3 Detailed design and construt 4.4 Provision of follow-up support 5. By ADB 5.1 Project approval in 2008. 5.2 Inception mission within 200 mission in mid-2010, and resetting 	rred facilities by 2013. O training by 2011. Is by 2011. ction completed by 2013. rt until 2013. 8, tranch-1 mid-term review gular review missions	 NGO/CO support to set up (about 810 person-year, p Training and capacity built Monitoring and evaluation Staff resources and staff or 	o and strengthen 450 WUAs preferably 20% women) ding of support organizations 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.

DESCRIPTION OF PROJECT-2

A. Impact and Outcome

1. The expected impact is "economic growth, including agricultural growth, in Odisha is sustainable, broad-based and more inclusive (12th Five-Year Plan: 2012-2017). The outcome will be increased productivity of agriculture in selected river basins in Odisha.

Table A5.1. Project 2 Scheme Profiles						
Scheme Name	River Basin	Objective and Main Scope				
4- Major Schemes						
Machhagaon	Mahanadi delta	<u>Objective</u> : Renovation and modernization (designed irrigation area (CCA = 34870 ha); <u>Main scope</u> : Formation and strengthening of 30 out of total 77 WUAs; infrastructure improvement; 52.4 km main canals; 187.5 km distributaries, and 33 nos of minor canal systems); command area development (CAD) and agriculture support				
Pattamundai	Mahanadi delta	<u>Objective</u> : Renovation and modernization with CCA 32,693 ha; <u>Main scope</u> : Strengthening of 30 out of total 59 WUAs; infrastructure improvement (80.5 km main canals; 79.5 km distributary and 37 nos of minor canal systems), and WUA CAD and agriculture support				
HLC-Range1	Mahanadi delta	<u>Objective</u> : Renovation and modernization with CCA =14,000 ha; <u>Main scope</u> : Formation and Strengthening of 32 WUAs; infrastructure improvement (53.1 km main canals; reservoir, 59.6 km distributaries and 22 nos of minor canal systems), and WUA CAD and agriculture support				
Mahanadi Chitrotpala (MCII)	Mahanadi delta	<u>Objective</u> : Extension of the ayacut by 5930 ha for completed scheme to achieve full potential (13,300 ha). <u>Main scope</u> : Strengthening 31 WUAs				
3 Medium Schemes						
Kansabahal	Brahmani	<u>Objective</u> : Renovation and modernization with CCA = 4730 ha); <u>Main Scope</u> : Formation and Strengthening of 9 WUAs; infrastructure improvement (63.3 km distributaries and 66 km minor canal systems), and WUA CAD and agriculture support				
Ramial	Brahmani	<u>Objective</u> : Renovation and modernization with CCA = 6128 ha; <u>Main Scope</u> : Formation and strengthening of 15 WUAs; infrastructure improvement (63.2 km distributaries and 55.06 km minor canal systems), and WUA CAD and agriculture support)				
Kanjhari	Baitrani	<u>Objective</u> : Renovation and modernization with CCA = 9,740 ha; <u>Main Scope</u> : Strengthening of 22 WUAs;, infrastructure improvement (36.2 km main canals; 7.1				

km distributaries and 126.1 km minor canal systems), and WUA CAD and agriculture support

CCA: culturable command area

B. Outputs

2. **Output 1: State Institutions Strengthened for Water Resources Management.** Project 2 will continue strengthening institutional capacities of the DOWR, PIM-CAD Directorate and SIOs to establish self-sustaining mechanisms for improved irrigation system performance. This will include: (i) establishment of systems for quantitative water use in the Baitrani river basin; and (ii) re-electing 169 WUAs in accordance with the revised PP Rules 2003 with at least 33% women in executive committees for decision making.¹ Overall performance and achievements will be measured through WUA satisfaction surveys at the subproject level. The output will also support IWRM activities in accordance with the sector road map. Specific activities will be operationalizing the Baitarani RBO and strengthening Odisha Water Planning Organization in river basin modelling.

3. **Output 2: Irrigation system and associated infrastructure modernized and managed.** This output will include: (i) modernization of irrigation infrastructure on 4 major and 3 medium subprojects to improve 108,091 ha of irrigated area; (ii) rehabilitation of 750 MLI schemes; (iii) field channels and distribution structures to benefit 54,045 ha; and (iv) restoration of about 57 km of saline embankments in 4 coastal divisions (Aul, Puri, Khurda, Nimapara).

4. The project will also include (i) continued support to the PMU within DOWR; and (ii) provision of technical expertise from specialist services, including the ongoing institutional strengthening and project management consulting services which is for the duration of the MFF. Other services will include for MLI schemes implementation, construction management and supervision consultants, support services teams for WUA strengthening and IWRM technical support. The main activities to be undertaken include (i) implementing resettlement plans; (ii) establishing MIS for Project 2; (iii) recruiting implementation support consultants for construction supervision, MLI schemes and IWRM; and (iv) meeting annual disbursement projections.

¹ The specific training subjects include participatory planning, WUA development, design and construction management, quality control, O&M, PIM, resettlement, environmental management, and support services.

DESIGN AND MONITORING FRAMEWORK FOR PROJECT 2

Impacts the Project is aligned with:

Economic growth, including agricultural growth, in Odisha is sustainable, broad-based and more inclusive (12th Five-Year Plan: 2012-2017*).

Project Results Chain	Performance Indicators with Targets and Baselines	Data Sources or Reporting Mechanisms	Risks
Outcome Productivity of agriculture in selected river basins in Odisha increased.	 By 2019, a. Cropping intensity increased to 180% (FY2014 baseline: 160%) b. Production of high-yielding varieties rice increased to 3.8 t/ha (FY2014 baseline: 2.8 t/ha) 	Department of Agriculture annual report	Projections of climate change parameters do not accurately represent actual climate-related hazards.
Outputs 1. Water resources and irrigation management of state and water user institutions strengthened.	By September 2018, 1a. Systems for quantitative water use in 169 WUAs in the project areaestablished (2015 baseline: 0) 1b. PP rules of 2003 updated (baseline: not applicable) 1c. Elections held in at least 75% of 169 participating WUAs, and 33% of executive committees are female (2015 baseline: 42)	 1a. DOWR annual report 1b. State government order 1c. CAD-PIM directorate annual report 	Political, community and stakeholder support to proceed with reforms may not be sustained.
 Irrigation system and associated infrastructure modernized and managed. 	 (2015 baselines: 0) By September 2018, 2a. 7 irrigation systems' infrastructure upgraded 2b. 50% of the total 108,091 ha command area has upgraded on-farm distribution system 2c. Asset management plans for 7 irrigation subprojects endorsed and implemented by DOWR 2d. 169 WUAs prepare and implement O&M plans, with 33% women included in training 2e. 57 km of coastal embankments restored 	 2a. Contract completion certificates 2b. CAD-PIM Directorate annual report 2c. CAD-PIM Directorate annual report 2d. CAD-PIM Directorate annual report 2e. Contractcompletion certificates 	

Key Activities with Milestones

Output 1: State and water user institutions strengthened for water resources and irrigation management

- 1.1 Draft vision and strategy for change management prepared (Feb Dec 2014)
- 1.2 Undertake assessments and review lessons learned from other experiences in developing water policy (Sep 2014–Sep 2015)
- 1.3 169 WUAs under Tranche 2 subprojects form sub-committees for planning, works, water management and audit (Jan 2016 Dec 2017)
- 1.4 Develop Baitarani river basin management plan with stakeholder participation (completed by Feb 2015–Sept 2016)
- 1.5 Hold elections for 169 WUAs Tranche 2 subprojects (March 2015–Sep 2017)

Output 2: Irrigation system infrastructure modernized and managed

- 2.1 Commence civil works for first 34 (out of 79) packages for main and distribution canals (Jan 2014–July 2015)
- 2.2 Commence civil works for 25 out of 79 packages for main and distribution canals (Apr-Dec 2015)
- 2.3 Commence civil works for 20 minor canal packages(Apr 2015–Dec 2015)
- 2.4 Commence civil works implementation of 15(out of 79) packages for main and distribution canals (Apr 2015–Jun 2015)
- 2.5 Commence civil works for 64 out of 79 packages for main and distribution canals (Dec 2015-Apr 2016)
- 2.6 Commence implementation of batch I of 250 out of 750 MLIP, batch II of 250 MLIP, batch III of 250 (Sep 2015-Sep 2017)
- 2.7 Commence implementation of sub-minor canals (Jan 2016-Jun2018)
- 2.8 Transfer O&M to WUAs (Jun 2017–Jun 2018)
- 2.9 Complete civil works for Tranche 2 irrigation and minor lift irrigation subprojects complete (Jun2018) Restore embankments (Dec 2015–Jun 2017)

Project Management Activities

Complete recruitment of construction supervision consultants (Sep 2015).

Implement resettlement plans for 3 subprojects (Jun 2015-Jun 2016)

Recruit consulting services for construction supervision, minor lift irrigation project and IWRM (May 2014-Jun 2015)

Establish MIS (Sept 2015-Jun 2017)

Prepare project completion report for (Jul-Aug 2018)

Inputs

ADB: \$120 million Government of Odisha: \$47.78 million

Assumptions for Partner Financing

Not Applicable

ADB = Asian Development Bank, CAD = command area development, DOWR = Department of Water Resources, FY = fiscal year, ha = hectare, IWRM = integrated water resources management, MIS = management information system, O&M = operation and maintenance, PIM = participatory irrigation management, PP = pani panchayat, PPMS = project performance management system, t = ton, WUA = water user association.

* Odisha Five-Year Plan 2012-2017, Planning and Co-ordination Department, Government of Odisha Source: Asian Development Bank.

Name	Unit	Quantity	Unit Rate		Sub-Projects							Remarks	
			(INR)										
				Machhagaon	Pattamundai	HLC R1	MCII	Jajpur	Khanjari	Ramial	Kansbahal	All Sub	
												projects	
Command Area (NIA)	ha			34870	32693	14000	5930	0	9740	6128	4730	108091	
Command Area (NIA) under Tr 2 PPs	ha			15000	15000	14700	13260	0	9300	9600	4610	81470	
DoWR Divisions	No			1	2	2	2	0	1	1	1	10	
Total Pani Panchayats	No			77	59	32	31	0	22	15	9	245	
Pani Panchayats to be taken in Tr 2	No			30	30	32	31	0	22	15	9	169	
SSTs	No			3	3	3	3	0	2	2	1	17	1 SST for
													10 PPs
COs	No			15	15	16	16	0	11	8	5	86	1 CO for
													2 PPs
Community Resources Person (CRPs)	No			60	60	64	62	0	44	30	18	338	2 CRPs
													for 1 PP
Implementation Period	Year			3	3	3	3	0	3	3	3	3	

SUMMARY OF STAFFING REQUIREMENTS FOR WUA STRENGTHENING

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;
 - (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

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.

(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.
- (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.

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.

SUBPROJECT IMPLEMENTATION PROCEDURE AND ARRANGEMENTS

Figure A9: Implementation Procedure

Feasibility Studies and Subproject Implementation Plan Preparation	
Confirmation of Candidate Subproject Selection 🔶 Feasibility Studies and Subproject Implementation P	lan
(ii) Existing major, medium, or MLI scheme in the set (i) Field confirmation of the issues on the left	
geographical area requiring renovation (ii) Initial formulation of ad hoc WUA	
(iii) Technical feasibility with insignificant risks (iii) Data collection on physical, socioeconomic, and	
(iv) Reliable water availability, insignificant negative institutional setting	
impacts on downstream users and ecosystems (iv) Problem assessment on agriculture, infrastructure, a	and
(v) EIRR greater than 12%, robustness against risks irrigation and water management	
(vi) Marginal and small farmers constituting more than (v) Inventory of existing and planned programs	
50% beneficiary households and land areas (vi) Participatory rapid rural appraisal at village	
(vii) No major environmental issues (vii) Identification of priority investment requirements for	using
(viii)No major social and land-related issues like on water and associated interventions	
acquisition of Commercial, residential and (viii) Feasibility studies of identified interventions	
proprietary assets or any gender disparity. (ix) Formulation of SIP specifying input and output target	ets
(ix) Beneficiaries support overall subproject concept, (x) Associated safeguard and other assessments	
and agree on contribution for 5% of minor works, (xi) Presentation of feasibility study and SIP and endors	ement
10% of CAD, and 20% of MLI works by WUA	
Approval of Feasibility Studies and Inclusion In	the
MFF Subprojects (Infough FFR)	
(See footnote 1 for main facilities requiring early implem	nentation)
	icination)
WUA Micro Plan (Major and Medium-Sized WUA Beneficiary Mobilization	
Schemes) ¹	
WUA Micro Plan Preparation During Micro Plan Preparation	
(i) WUA institutional development plan prepared, with (i) WUA working group established to work with S	IP
full land and household records team for micro plan preparation	
(ii) Infrastructure development plan (including CAD (ii) Information campaign on the project and its	
layouts and conjunctive use promotion), and water requirements	
management improvement plan (iii) Endorsement of draft micro plan by WUA	
(iii) Agriculture and livelihood enhancement plan, After Micro Plan Approval	
prepared for synergy with other ongoing programs (i) Start implementing WUA institutional developm	ent
(iv) Environmental and social safeguards plans (as plan with facilitation by NGOs	
required) (ii) Membership enrollment over 70%	
(v) Endorsement of draft WUA micro plan by WUA (iii) Election, and executive and subcommittee form	nation
Approval by SIO with support of the (iv) Participate in and endorse detailed design and	
consultants beneficiary contribution targets	
(v) Achievement of set beneficiary contribution targ	gets
Full achievements of the targets in (ii)–(v)	
confirmed by SIO	
Ĺ	
WUA Implementation Agreement Signing	
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	
\square	

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, and
- completion of compensation, 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

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

- 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

Infrastructure Completion and O&M

WUA Managed (minor) Facilities

- Preparation of O&M plan by WUA with trained project staff with the consultant O&M specialist
 (ii) The special 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
- Joint decision making on system O&M, including seasonal operation plans, maintenance plans with joint walk-throughs, and resource mobilization plans
- 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.

Subproject	Position	Staffing
HQ	PIM Deputy Subproject	
	Manager (Major & Medium	
	Schemes)	1
MCII	Superintending Engineer	1
	Executive Engineer	1
	Assistant Engineer	5
	Junior Engineer	15
Machagaon	Superintending Engineer	1
	Executive Engineer	2
	Assistant Engineer	4
	Junior Engineer	12
Pattamundai	Executive Engineer	1
	Assistant Engineer	4
	Junior Engineer	12
HLC RI	Executive Engineer	1
	Assistant Engineer	4
	Junior Engineer	12
Kansbahal	Executive Engineer	1
	Assistant Engineer	1
	Junior Engineer	9
Ramiala	Executive Engineer	1
	Assistant Engineer	1
	Junior Engineer	9
Kanjhari	Executive Engineer	1
_	Assistant Engineer	1
	Junior Engineer	9
Engineering Staffing Summary	Superintending Engineer	2
	Executive Engineer	9
	Assistant Engineer	20
	Junior Engineer	78
	Total	109
Services Support Team	PIM Coordinator (subproject I	1
	PIM Specialist	1
	Agriculture Extension Specia	1
	Water Management and CAD	1

SUBPROJECT IMPLEMENTATION OFFICE STAFFING

SPECIFIC SUBPROJECT IMPLEMENTATION PROCEDURES

- (i) <u>WUA Micro Planning</u>: For major and medium schemes,¹ 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.² The micro plan will be endorsed by WUA general assembly.
- (ii) <u>WUA Strengthening</u>: 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) <u>Detailed Design</u>: 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) <u>Tendering and Implementation of Civil Works</u>: 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.³
- (v) <u>Agriculture, Allied Sector, and Livelihood Enhancement Support</u>: 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

¹ For minor lift schemes, the WUA plan is prepared at the time of feasibility studies.

² As a matter of principle, SIO will pursue mobilizing existing State programs for the delivery of services.

³ 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 are development (CAD) channel outlets, which are the sole responsibility of farmers.

support team members.⁴ The SIOs will seek regular organization of district coordination committee meetings to support this end, and pursue that WUAs establish (a) sustaining 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 s 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) <u>Subproject O&M</u>: 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.

⁴ The activities will be initiated upon signing of the implementation agreement, although primarily provided upon operation of the improved canals.

PROCUREMENT PLAN (PROJECT 2)

Basic Data						
Project Name: Orissa Integrated Irrigated Agriculture and Water Management Investment Program - Project 2						
Project Number: 38411-043	Approval Number:					
Country: India	Executing Agency: Water Resources Department, Government of Orissa					
Project Procurement Classification:	Implementing Agency:					
Project Procurement Risk:	N/A					
Project Financing Amount: US\$ 171,660,000 ADB Financing: US\$ 120,000,000 Cofinancing (ADB Administered): Non-ADB Financing: US\$ 51,560,000	Project Closing Date: 17 September 2018					
Date of First Procurement Plan: 15 April 2015	Date of this Procurement Plan: 3 June 2015					

A. Methods, Thresholds, Review and 18-Month Procurement Plan

1. Procurement and Consulting Methods and Thresholds

Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works						
Method	Threshold	Comments				
International Competitive Bidding for Goods	US\$ 3,000,000 and Above					
National Competitive Bidding for Goods	Between US\$ 100,001 and US\$ 2,999,999	The first 4 bids prepared by each division will be subject to ADB's prior review. Post review may be used subsequently, subject to demonstration of high quality bid evaluations.				
Shopping for Goods	Up to US\$ 100,000	DOWR will issue a public request for quotations				
International Competitive Bidding for Works	US\$ 40,000,000 and Above					
National Competitive Bidding for Works	Between US\$ 100,001 and US\$ 39,999,999	The first 4 bids prepared by each division will be subject to ADB's prior review. Post review may be used subsequently, subject to demonstration of high quality bid evaluations.				
Shopping for Works	Up to US\$ 100,000	DOWR will issue a public request for quotations				
Community Participation in Procurement for Works	Up to US\$ 10,000					

Consulting Services					
Method	Comments				
Consultant's Qualification Selection for Consulting Firm					
Fixed Budget Selection for Consulting Firm					
Least-Cost Selection for Consulting Firm					
Quality- and Cost-Based Selection for Consulting Firm					
Quality-Based Selection for Consulting Firm					
Single Source Selection for Consulting Firm					
Individual Consultants Selection for Individual Consultant					

2. Goods and Works Contracts Estimated to Cost \$1 Million or More

The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

				Review		Advertisemen	
Package	General Description	Estimated	Procurement	(Prior/	Bidding	t Dete	Comments
Number		value	Methoa	Post)	FIOCEGUIE	(quarter/year)	
CW-NCB- AED-03	Restoration of existing Khairinashi Saline Embankment from RD 00m to 5.654 Km in Mahakalapada block, Kendrapara district.	1,700,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small
	Postoration of oviating	1 959 000 00	NCP	Prior	1605	01/2015	Works Broqualification of
AED-05	Garadpur Iswarpur Saline embankment from RD 00 to 14.00 Km in Rajkanika Block, Kendrapara District.	1,830,000.00	NGB	FIIOI	132		Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- HLC-2	REM of main canal including lining (10.41.km to 26.585km) and renovation and construction of associated structures	1,027,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- HLC-3	REM of main canal including lining (26.585km to 41.072 km) and renovation and construction of associate structures	1,167,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- KAN-02	REM of left main canal from RD 0 km to 5.67 km, right main canal, selective lining and provision of system control and other structures.	1,100,000.00	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- KAN-1	REM of left main canal, from RD 5.67 km to Tail, selective lining and provision of system	1,067,000.00	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: Y

	control and other structures.						Domestic Preference Applicable: N Bidding Document: Small
CW-NCB- KHD-02	Restoration to existing Saline gherry from Khairabandha to Chandraput in Chilika block, Khurda district.	1,006,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding
CW-NCB- KNJ-1	REM of left main canal, selective lining including improvement/ modernisation of associated structures of Kanjhari irrigation system.	1,580,000.00	NCB	Prior	1S2E	Q4 / 2014	Document: Small Works Prequalification of Bidders: N Domestic Preference Applicable: N Bidding
CW-NCB- KNJ-2	REM of right main canal, selective lining including improvement/ modernisation of associated structures of Kanjhari irrigation system.	1,490,000.00	NCB	Prior	1S2E	Q4 / 2014	Document: Small Works Prequalification of Bidders: N Domestic Preference Applicable: N Bidding
CW-NCB- MAC-1	REM of Machhagaon main canal including lining (0.0 km to 14.60 km) and renovation and construction of associated structures	1,355,000.00	NCB	Prior	1S2E	Q1 / 2015	Document: Small Works Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small
CW-NCB- MAC-2	REM of Machhagaon main canal including lining (14.60 km to 29.20 km) and renovation and construction of associated structures	1,280,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- MAC-3	REM of Machhagaon main canal including lining (29.20 km to 52.425 km) and renovation and construction of associated structures	1,498,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N
							Bidding Document: Small Works
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CW-NCB- NID-02	Restoration of existing Serei- Bandala Saline embankment from RD 00 to 3.50 km in	1,322,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Astaranga block, Puri District.						Preference Applicable: N Bidding
							Document: Small Works
CW-NCB- NID-03	Restoration of existing Jharling Belanga Saline embankment from RD 22.00 to 29.100 Km in	1,801,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Astaranga block, Puri District.						Domestic Preference Applicable: N
							Bidding Document: Small Works
CW-NCB- PAT-14	REM of Distributaries canals D-8 (RD 0.00 to 2.00 Km) & D-11 of Pattamundai Canal	1,167,000.00	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Domestic
	selective lining and repair to canal embankment roads						Preference Applicable: N
							Document: Small Works
CW-NCB- PAT-15	REM of Distributaries canals D-8 (RD 2.00 to 19.8 Km) & D-11 of Pattamundai Canal	1,043,000.00	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Domestic
	selective lining and repair to canal embankment roads						Preference Applicable: N
							Document: Small Works
CW-NCB- PAT-16	REM of Distributaries canals D-12 & D-15 of Pattamundai Canal including structures,	1,015,000.00	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N
	selective lining and repair to canal embankment roads						Preference Applicable: N
							Bidding Document: Small Works
CW-NCB- PAT-2	REM of Pattamundai main canal including lining (9.25km to 15.077 km) and	1,003,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	renovation and construction of associated structures						Domestic Preference Applicable: N
							Bidding Document: Small Works

CW-NCB- PAT-3	REM of Pattamundai main canal including lining (15.077.km to	1,084,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	23.024 km) and renovation and construction of associated structures						Domestic Preference Applicable: N
							Bidding Document: Small Works
CW-NCB- PAT-6	REM of Pattamundai main canal including lining (RD 37.94 km to	1,166,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	construction of associated structures						Domestic Preference Applicable: N
							Bidding Document: Small Works
CW-NCB- PAT-7	REM of Pattamundai main canal including lining (RD 46.60 km to	1,053,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	renovation and construction of associated structures						Domestic Preference Applicable: N
							Bidding Document: Small Works
CW-NCB- RML-03	REM of right main canal, selective lining and Batagaon Distributaries canals of	1,097,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Ramial irrigation sub- project including structures						Preference Applicable: N
							Bidding Document: Small Works
CW-NCB- RML-4	REM of Khanjuria, Kanpura and Kandhara Distributaries canals of Ramial irrigation sub-	1,080,000.00	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	project including structure						Domestic Preference Applicable: N
							Bidding Document: Small Works
GOODS- MIS-1	Equipment for MIS	1,583,000.00	NCB	Prior	1S1E	Q3 / 2015	Prequalification of Bidders: N
							Domestic Preference Applicable: N
							Bidding Document: Goods
GOODS- MIS-2	Equipment for MIS	1,583,000.00	NCB	Prior	1S1E	Q3 / 2015	Prequalification of Bidders: N
							Domestic

			Preference Applicable: N
			Bidding Document: Goods

3. Consulting Services Contracts Estimated to Cost \$100,000 or More

The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior/ Post)	Advertisement Date (guarter/year)	Type of Proposal	Comments
CS-1	Construction Management & Supervision Consultancy services	2,365,000.00	QCBS	Prior	Q1 / 2014	FTP	Assignment: National
							Ratio: 90:10
							under evaluation RFP to be issued by May 2015
CS-2	Minor lift irrigation implementation support services	3,178,000.00	QCBS	Prior	Q1 / 2015	FTP	Assignment: National Quality-Cost Ratio: 90:10
							Comments: EOI under evaluation RFP to be issued by May 2015
CS-4	IWRM Consulting Services (4 Individuals)	1,200,000.00	ICS	Prior	Q3 / 2015		Assignment: International
							Expertise: integerated water resources management
							Comments: 1 international expert and 3 national experts
CS-5	PP Strengthening Support Package 1 (7 PIM Coordinators and 7 Agricultural Marketing	532,019.00	ICS	Prior	Q2 / 2015		Assignment: National
	Managers)						Expertise: PIM and Agricultural Marketing
							Comments: 14 contracts
CS-6	PP Strengthening Support Package 2 (Technical Services)	2,211,886.00	QCBS	Prior	Q1 / 2015	FTP	Assignment: National
							Comments: 18 teams of technical, field-

							based consultants
CS-9	PP Strengthening Support Strengthening Support Package 3 (Accountancy)	153,808.00	QCBS	Prior	Q4 / 2015	STP	Assignment: National

4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

The following table lists smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

Goods and V	Norks							
Package Number	General Description	Estimated Value	Number of Contract s	Procurement Method	Review (Prior/ Post)	Bidding Procedure	Advertisemen t Date (quarter/year)	Comments
CW-NCB- AED-04	Restoration of existing Sunity Saline Embankment from RD 5.080 Km to	893,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- AED-06	Restoration to existing bank protection work (adjacent to Road) from RD 0.240 Km to 0.612 Km at Gualigaon in Rajkanika block, Kendrapara District.	642,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- HLC-1	REM of main canal including lining (0.00.km to 10.410 km) and renovation and construction of associated structures	908,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- HLC-4	REM of Distributaries No-1 of HLC Range-I Canal including structures, selective lining and repair to canal embankment roads.	717,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- HLC-5	REM of Distributaries No-6 and 7 1/4 of HLC Range-I Canal including structures,	667,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference

	selective lining and repair to canal embankment roads.							Applicable: N Bidding Document: Small Works
CW-NCB- HLC-6	REM of Distributaries No-9 and 14 of HLC Range-I Canal including structures, selective lining and	683,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference
	repair to canal embankment roads.							Bidding Document: Small Works
CW-NCB- HLC-7	REM of minor canals of HLC Range-I canal system including improvement/ modernisation of structures and selective lining.	580,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small
CW-NCB- HLC-8	REM of minor canals of HLC Range-I canal system including improvement/ modernisation of structures and selective lining.	585,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small
CW-NCB- HLC-9	REM of minor canals of HLC Range-I canal system including improvement/ modernisation of structures and selective lining	555,000.00	1	NCB	Prior	1S2E	Q4 / 2015	Works Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- KAN-3	REM of minor canals of Kansabahal irrigation sub-project including improvement/ modernisation of structures.	600,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- KHD-01	Restoration to existing Saline Gherry Block-III from RD 1.80 Km to RD 7.80 Km at Bhusundapur in Tangi Block, Khurda district.	701,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding

								Document: Small Works
CW-NCB- KNJ-3	REM of minor canals of Kanjhari irrigation sub-project including improvement/ modernisation of associated structures of Kanjhari irrigation system.	920,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small
CW-NCB-	REM of minor	600,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification
MAC-10	Machhagaon canal system including structures, selective lining and repair to canal embankment roads							Domestic Preference Applicable: N Bidding
0141105				105		1005	00/00/5	Works
CW-NCB- MAC-11	REM of minor canals of Machhagaon canal system including structures, selective lining and repair to canal embankment roads.	590,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N
								Bidding Document: Small Works
CW-NCB- MAC-12	REM of minor canals of Machhagaon canal system including structures, selective lining and repair	620,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small
CW-NCB- MAC-4	REM of Distributaries No 2, 19, and Bhagalpur Distributaries canals of Machhagaon Canal including structures, selective lining and repair to canal embankment roads	765,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Works Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- MAC-5	REM of Distributaries No. 7 and 19A of Machhagaon Canal including structures, selective lining and repair to canal embankment roads.	787,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB-	REM of	902,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification

MAC-6	Distributaries No. 8, 10 and 10H of Machhagaon Canal including structures, selective lining and repair to canal embankment roads.							of Bidders: N Domestic Preference Applicable: N Bidding
		0.47.000.00		NOD	Drie	1005	01/0015	Works
MAC-7	Distributaries No. 16,13,13C,15,15A of Machhagaon Canal including structures, selective lining and repair to canal embankment roads.	947,000.00	1	NCB	Prior	152E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- MAC-8	REM of minor canals of Machhagaon canal system including structures, selective lining and repair to canal embankment roads.	585,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- MAC-9	REM of minor canals of Machhagaon canal system including structures, selective lining and repair to canal embankment roads.	580,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- MCI-1	Construction of CRBC (15.20 km to 18015 km) and construction of associated structures	717,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- MCI-10	Construction of Minor and Sub- minor canals of PLBC (0.km to 15.00 km) and construction of associated structures	629,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- MCI-11	Construction of Minor and Sub- minor canals of PLBC (15.00.km to 25.18 km) and construction of	471,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N

	associated							
	structures							Bidding Document: Small Works
CW-NCB- MCI-2	Construction of CRBC (18.015 km to 20.875 km) and construction of associated structures	729,100.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N
				NOD		1005	00/0015	Document: Small Works
MCI-3	Construction of CRBC (20.875 km to 23.490 km) and construction of associated structures	666,700.00	1	NCB	Prior	152E	Q2 / 2015	Domestic Preference Applicable: N Bidding Document: Small
								Works
CW-NCB- MCI-4	Construction of Minor and Sub- minor canals of CRBC (7.0 km to 15.20 km) and construction of associated structures	930,500.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N
								Document: Small Works
CW-NCB- MCI-5	Construction of PLBC (15 km to 20.25 km) and construction of associated structures	765,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N
								Document: Small Works
CW-NCB- MCI-6	Construction of PLBC (20.25 km to 25.18 km) and construction of associated structures	878,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N
								Bidding Document: Small Works
CW-NCB- MCI-7	Construction of Minor and Sub- minor canals of CRBC (7.00 km to 15.20 km) and construction of associated structures	834,700.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works

CW-NCB- MCI-8	Construction of Minor and Sub-	625,400.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N
	CRBC (15.20 km to 21.44 km) and construction of associated							Domestic Preference Applicable: N
	structures							Bidding Document: Small Works
CW-NCB- MCI-9	Construction of Minor and Sub- minor canals of	614,900.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N
	27.14 km) and construction of associated structures							Domestic Preference Applicable: N
								Bidding Document: Small Works
CW-NCB- PAT-04	Rehabilitation,Exten sion and modernization of	955,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Main Canal of Pattamundai Canal System From RD 23.024 Km to 28.851 Km including all							Domestic Preference Applicable: N
	Siruciures.							Bidding Document: Small Works
CW-NCB- PAT-05	Rehabilitation,Exten sion and modernization of Main Canal of	977,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Pattamundai Canal System From RD 28.851 Km to 37.940 Km							Preference Applicable: N
	including all structures.							Bidding Document: Small Works
CW-NCB- PAT-08	Rehabilitation,Exten sion and modernization of	997,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Pattamundai Canal System From RD 54.033 Km to							Domestic Preference Applicable: N
	61.045 Km including all structures.							Bidding Document: Small Works
CW-NCB- PAT-09	Rehabilitation,Exten sion and modernization of	836,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Main Canal of Pattamundai Canal System From RD 61.045 Km to 65.540 Km							Domestic Preference Applicable: N
	including all structures							Bidding Document: Small Works
CW-NCB-	BEM of	941.000.00	11	NCB	Prior	1S2F	Q1 / 2015	Pregualification

PAT-1	Pattamundai main							of Bidders: N
	canal including lining (00 km to 9.25 km) and renovation and construction of							Domestic Preference Applicable: N
	structures							Bidding Document: Small Works
CW-NCB- PAT-10	Rehabilitation,Exten sion and modernization of Main Canal of	892,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Pattamundai Canal System From RD 65.540 Km to 69.							Preference Applicable: N
014 110 5						1005	0.1.100.15	Bidding Document: Small Works
PAT-11	Rehabilitation,Exten sion and modernization of Main Canal of Pattamundai Canal	838,000.00	1	NCB	Prior	152E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference
	69.500 Km to 75.720 Km including all structures.							Bidding Document: Small Works
CW-NCB- PAT-12	Rehabilitation,Exten sion and modernization of Main Canal of	886,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N
	Pattamundai Canal System From RD 75.720 Km to 80.500 Km							Preference Applicable: N
	including all structures.	045 000 00		NOT		1005	00 / 0015	Bidding Document: Small Works
CW-NCB- PAT-13	REM of Distributaries canals D-2 and D-7 of Pattamundai Canal	915,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N
	including structures, selective lining and repair to canal							Domestic Preference Applicable: N
	embankment loads.							Bidding Document: Small Works
CW-NCB- PAT-17	REM of Distributaries canals D-16 of Pattamundai Canal	872,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N
	including structures, selective lining and repair to canal embankment roads.							Domestic Preference Applicable: N
		700.000.00		NOT		1005	00/0015	Bidding Document: Small Works
CW-NCB- PAT-18	HEM of Distributaries canals of Gobari Extension from BD 0.00 to 3.9	720,000.00		NCB	Prior	152E	Q2 / 2015	Prequalification of Bidders: N
	Km of Pattamundai							Domestic Preference

	Canal including structures, selective lining and repair to canal embankment roads.							Applicable: N Bidding Document: Small Works
CW-NCB- PAT-19	REM of Distributaries canals of Gobari Extension from RD 3.9 to 8.6 Km of Pattamundai Canal including structures, selective lining and repair to canal embankment roads.	743,000.00	1	NCB	Prior	1S2E	Q2 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- PAT-20	REM of minor canals between of Pattamundai Canal canal system including improvement/ modernisation of structures	580,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- PAT-21	REM of minor canals between of Pattamundai Canal canal system including improvement/ modernisation of structures	520,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- PAT-22	REM of minor canals between of Pattamundai Canal canal system including improvement/ modernisation of structures.	550,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- PAT-23	REM of minor canals between of Pattamundai Canal canal system including improvement/ modernisation of structures.	560,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- PAT-24	REM of minor canals between of Pattamundai Canal canal system including improvement/ modernisation of structures.	540,000.00	1	NCB	Prior	1S2E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding

								Document: Small Works
CW-NCB- PID-01	Restoration to existing Paikarapur Saline Gherry from RD 00 to 12.80 Km in Krushnaprasad block, Puri District.	989,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding
								Document: Small Works
CW-NCB- PID-02	Restoration to existing Krushnaprasad Saline Gherry from RD 5.80 to 30.27 Km in Krushnaprasad block, Puri District.	831,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small
CW-NCB- PID-05	Restoration to existing Titipo Saline Gherry from RD 00 TO 7.10 Km in Krushnaprasad block, Puri District.	983,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Works Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- PID-06	Restoration to existing Nuapada Saline Gherry from RD 00 Km to 4.80 Km in Krushnaprasad Block, Puri District.	647,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- RML-1	REM of left main canal, selective lining including improvement/ modernisation of structures. (RD 00 to 10 km)	912,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- RML-2	REM of left main canal, selective lining including improvement/ modernisation of structures. (RD 10km to tail)	930,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Small Works
CW-NCB- RML-5	REM of minor canals of Ramial irrigation sub-project	420,000.00	1	NCB	Prior	1S2E	Q1 / 2015	Prequalification of Bidders: N

CSO for Resettlement Plan implementation

	including improvement/ modernisation of structures.							Domestic Preference Applicable: N Bidding Document: Small Works
GOODS- DoWR- Equipment 1	Purchase of Computer and Audiovisual equipment for PP strengthening	91,000.00	3	SHOPPING	Post		Q4 / 2015	Wond
GOODS- DoWR- Equipment 2	Office refurbishment & extension of DOWR	50,000.00	10	SHOPPING	Post		Q4 / 2015	
GOODS- MLI-01	Lift irrigation equipment (pump sets & distributions pipes)	3,867,000.00	11	NCB	Prior	1S1E	Q3 / 2015	Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Goods Comments: Prior review for 1st package
GOODS- MLI-2	Lift irrigation equipment (pump sets & distributions pipes)	300,000.00	3	SHOPPING	Post		Q3 / 2015	Comments: Prior review for 1st package
WORKS- WUAs	Community contract to WUAs	13,654,000.0	0 Multiple	Community Participation			Q4/ 2016	Comments: See para 78 of the FAM
Consulting S	Services							
Package Number	General Description	Estimated Value	Number of Contracts	Recruitment Method	Review (Prior/ Post)	Advertisemer Date (quarter/year)	nt Type of Proposal	Comments
CS-10	Resettlement Independent Monitor	6,000.00	1	ICS	Prior	Q2/2015		Assignment: National Expertise: Resettlement
CS-7	PMU Accountancy Support Services (3 Individuals)	8,000.00	3	ICS	Prior	Q1 / 2015		Assignment: National Expertise: financial management and accountancy
CS-8	CSO for Resettlement Plan	48,000.00	1	QCBS	Prior	Q2 / 2015	BTP	Assignment: National

Comments:

B. Indicative List of Packages Required Under the Project

The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

Goods and Works										
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Review (Prior/Post)	Bidding Procedure	Comments			
None										

Consulting Services										
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitmen t Method	Review (Prior/Post)	Type of Proposal	Comments			
CS-3	MIS Development & Implementation Services	8,568,000.00	1	QCBS	Prior	FTP	Assignment: National Comments: As per revised guidelines			

PROCUREMENT PLAN (PROJECT 1)

Basic Data									
Project Name: ORISSA Integrated Irrigated Agricultur	e & Water Management Investment Program - Project 1								
Project Number: 38411-023	Approval Number: 2444/8240								
Country: India	Executing Agency: Water Resources Department,								
	Government of Orissa								
Project Financing Amount: US\$ 66,400,000	Implementing Agency:								
ADB Financing: US\$ 16,500,000	N/A								
Cofinancing (ADB Administered): US\$ 30,000,000									
Non-ADB Financing: US\$ 19,900,000									
Date of First Procurement Plan: 26 September	Date of this Procurement Plan: 25 March 2014								
2008									

A. Methods, Thresholds, Review and 18-Month Procurement Plan

1. Procurement and Consulting Methods and Thresholds

Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works									
Method	Threshold	Comments							
National Competitive Bidding for Goods	Between US\$ 100,001 and US\$	Prior review							
Direct Contracting for Goods	Up to US\$ 99,999								
Shopping for Goods	Up to US\$ 100,000	Post review							
National Competitive Bidding for Works	Between US\$ 100,001 and US\$ 10,000,000	Prior review							
Shopping for Works	Up to US\$ 100,000	Post review							
Community Participation in Procurement for Works	Up to US\$ 10,000								

Consulting Services						
Method	Comments					
Consultant's Qualification Selection for Consulting Firm						
Least-Cost Selection for Consulting Firm						
Quality- and Cost-Based Selection for Consulting Firm						
Single Source Selection for Consulting Firm						
Single Source Selection for Individual Consultant						

2. Goods and Works Contracts Estimated to Cost \$1 Million or More

The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Procurement Method	Review (Prior/ Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
MLI-1 to MLI-14	Procurement of lift irrigation equipment including pump sets and distribution pipes	4,180,000.00	NCB	Prior	1S1E	Q4 / 2010	Prequalification of Bidders: N Bidding Document: Goods

MLI- Various	Installment of pumps sets and pipe systems, and other minor works	2,790,000.00	NCB	Prior	1S1E	Q4 / 2010	Prequalification of Bidders: N Bidding Document: Large Works
Various T1	Construction of sub- minor canals and associated structures of Talanda system	1,490,000.00	NCB	Prior	1S1E	Q3 / 2008	Prequalification of Bidders: N Bidding Document: Large Works
							Comments: After WUA formation and minor canal planning). SAER to confirm bidding document/procedur e and advert date

3. Consulting Services Contracts Estimated to Cost \$100,000 or More

The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior/ Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
CS-2.2	Minor Lift irrigation implementation support services (Package 2)	400,000.00	QCBS	Prior	Q4 / 2010	STP	Assignment: International
							Quality-Cost Ratio: 80:20
CS-5	Survey and Design of Project 2 subprojects	810,000.00	CQS	Post	Q4 / 2010	STP	Assignment: National
							Comments: 7 packages
TRA- Various	Training by resource persons	130,000.00	SSS	Prior	Q4 / 2010	FTP	Assignment: National

4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

Goods and Works										
Package Number	General Description	Estimated Value	Number of Contracts	Procurement Method	Review (Prior/ Post)	Bidding Procedure	Advertiseme nt Date (quarter/year)	Comments		
DOWR-1	Purchase of laboratory	240,000.00	1	NCB	Prior	1S1E	Q4 / 2010	Prequalification of Bidders: N		

	equipment for quality control cells							Bidding Document: Goods
DOWR- Various 01	Office refurbishment and extension of DOWR	570,000.00	1	NCB	Prior	1S1E	Q1 / 2009	Prequalification of Bidders: N Bidding Document: Large Works
DOWR- Various 02	Purchase of equipment and furniture of existing establishments	500,000.00	5	SHOPPING	Post		Q4 / 2010	Prequalification of Bidders: N
Various- G1	Construction of Minor and Sub- minor canals and associated structures of Gohira Irrigation system	580,000.00	1	NCB	Prior	1S1E	Q4 / 2010	Prequalification of Bidders: N Bidding Document: Large Works Comments: After WUA formation and minor canal plnning
Various- R1	Construction of sub minor canals and associated structures of Remal irrigation system	640,000.00	1	NCB	Prior	1S1E	Q4 / 2010	Prequalification of Bidders: N Bidding Document: Large Works Comments: After WUA formation and minor canal plnning
Various-S1	Construction of sub-minor canals and associated structure of Sunei irrigation system	970,000.00	1	NCB	Prior	1S1E	Q4 / 2010	Prequalification of Bidders: N Bidding Document: Large Works Comments: After WUA formation and minor canal planning

Consulting Services									
Package Number	General Description	Estimated Value	Number of Contracts	Recruitment Method	Review (Prior/ Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments	
None									

B. Indicative List of Packages Required Under the Project

The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

Goods and Works									
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Review (Prior/Post)	Bidding Procedure	Comments		
None									

Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Review (Prior/Post)	Type of Proposal	Comments
None							

C. List of Awarded and On-going, and Completed Contracts

The following tables list the awarded and on-going contracts, and completed contracts.

1. Awarded and Ongoing Contracts

Goods and V	Vorks						
Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Comments
CW-NCB- G1 (Reach1)	Rehabilitation of left main canal and Tentalabahal Distributary (from RD 00 to 2475 m)	589,000.00	463,757.00	NCB	Q3 / 2008	08-APR-11	
CW-NCB- G1 (Reach2A& B	Rehabilitation of left main canal and Tentalabahal Distributary (from RD 2475 m to RD 22350 m))	1,350,000.00	1,195,997.00	NCB	Q3 / 2009	17-AUG-11	
CW-NCB- G2 (Rch1,2A& B	Rehabilitation of right main canal including selective lining and structures (excluding minor)	2,140,000.00	1,381,556.00	NCB	Q2 / 2008	08-APR-11	
CW-NCB- G3	Rehabilitation of minor canals of Gohira irrigation project including improvements / modernization of structures of Gohira irrigation system	464,000.00	396,643.00	NCB	Q4 / 2010	24-NOV-12	
CW-NCB- R1	Repair main dam, spillway and other associated structures,	2,018,000.00	1,043,122.00	NCB	Q2 / 2008	19-APR-11	

	Rehabilitation of the left Main Canal, Right Main Canal, selective lining and provision of system control structures (excluding minor)						
CW-NCB- R2	Rehabilitation of minor canals of Remal irrigation projects including improvement / modernization of structures and selective lining	590,000.00	408,101.00	NCB	Q4 / 2010	15-OCT-12	
CW-NCB- S-1	Repair of dam, spillway and gate hoists, Rehabilitation of Bisol main canal, Kaptipada and Berhampur distributary canals including sections of lining and structures (excluding Minor)	2,170,000.00	1,867,016.00	NCB	Q2 / 2008	03-AUG-09	
CW-NCB- S-2(A)-(C)	Rehabilitation of (10) minor canals of Sunei irrigation projects including improvement/mo dernization of structures and selective lining	1,612,000.00	1,220,750.00	NCB	Q2 / 2010	03-FEB-12	
CW-NCB- T1(A)-(B)	Rehabilitation of main canal including lining (Km 11.75 km to 41.953 km) and renovation and construction of associated structures	3,981,000.00	3,412,751.00	NCB	Q2 / 2008	13-JUL-10	
CW-NCB- T2	Rehabilitation of main canal including lining (Km 41.953 km to 78.77 km) and renovation and construction of associated structures	4,110,000.00	2,799,556.00	NCB	Q2 / 2008	10-SEP-10	
CW-NCB- T3(A)-(C)	Rehabilitation of Distributary No 12 RD 0.00 km to tail; and Distributary Nos. 12G, 12G1, 13, 13C, 14, 14A and 14B of Taladanda Canal	5,138,000.00	2,496,718.00	NCB	Q3 / 2008	03-AUG-11	

CW-NCB-	Rehabilitation of	3,160,000.00	2,597,167.00	NCB	Q4 / 2010	25-SEP-12	
T4(A)-(C)	minor canalsof						
	Taladanda canal						
	system from						
	11.75 to 79.02						
	km including						
	structures,						
	selective lining						
	and repair to						
	canal						
	embankment						
	roads						

Package Number	General Description	Estimated Value	Contract Value	Recruitment Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Comments	
CS-1	Institutional strengthening and project managment support	8,690,000.00	3,580,761.00	QCBS	Q1 / 2008	04-JUN-09		
CS-2.1	Minor lift irrigation implementation support services	830,000.00	558,048.00	QCBS	Q1 / 2008	24-DEC-09		
CS-3	Survey and Design of Subminor Canals in Sunei irrigation Scheme	90,000.00	46,973.00	SSS	Q4 / 2010	24-OCT-11		
CS-4	Survey and Design of Talandanda Subminor Canals	70,000.00	37,248.00	CQS	Q4 / 2010	28-JUN-12		
CS-6	Social mobilization support for Gohira subproject	91,000.00	91,000.00	SSS	Q4 / 2010	06-AUG-12		
NGO-RP	Resettlement plan implementation support for MCII scheme	100,000.00	100,000.00	CQS	Q4 / 2010	20-APR-11		
NGO-WUA (4 packages)	Social Mobilization Support for Taladanda subproject	800,000.00	800,000.00	CQS	Q4 / 2010	08-NOV-11		
NGO- WUA2-A	Social mobilization support for Sunei and Remal subprojects	360,000.00	360,000.00	CQS	Q4 / 2010	25-MAR-11		
WALMI	Training and action research programs	100,000.00	100,000.00	SSS	Q4 / 2010	04-JUN-09		

CONSULTING SERVICES TERMS OF REFERENCE

I. ISPMC SERVICES – UPDATE FOR VULNERABLE GROUP (INCLUDING SC AND ST) AND GENDER SPECIALIST (DOMESTIC, 36 P-M)

1. The Vulnerable Group and Gender Specialist will assist with planning and delivering programs aimed at women and disadvantaged persons or vulnerable groups within the subproject areas as well as developing and promoting women's involvement in the pani panchayats/ water user associations. The specialist will have an advance degree in social sciences and will have at least 10 years' experience in managing gender and social development programs. The consultant will have demonstrable experience of using appropriate computer software/programs. Specific activities will include:

- Assist the PMU to comply with the gender action plan (GAP) for OIIAWMIP Tranche 2, Indigenous Peoples Development Framework (IPDP) for the OIIAWMIP and indigenous peoples development plans (IPDPs) from most marginalized groups of society or specific actions (IPSAs) for individual subprojects, and relevant policies of the Government and the OSG;
- Assist appropriate management systems are in place at PMU, SIO, and PP levels to address impacts on women, indigenous peoples and other vulnerable groups with specific focus to girls/women, with necessary training provided;
- Assist PMU and concerned SIOs to implement and monitor and assist in setting up systems and procedures for quarterly reporting of GAP;
- Assist PMU and the concerned SIOs to implement the relevant IPDP or IPSA, with necessary monitoring and reporting arrangements;
- Assist PMU to refine gender targets or activities, and prepare detailed GAP implementation plans to align with GAP activities with project outputs;
- Prepare a component-wise annual plan and budget for gender-related activities and integrate these in the overall annual plan of the project;
- Assist in development of gender capacity-building plan;
- Assist PMU, PIU to plan, design and deliver training and orientation project staff on gender issues in irrigation management sector and explain GAP objectives or requirements;
- Provide social and gender inputs for training at the institutional and community levels;
- Maintain oversight of GAP implementation, identify constraints, and prepare strategies to overcome them;
- Assist PIM Specialist in developing a sex-disaggregated project monitoring and evaluation system (PPMS); identify baseline data needs, and ensure collection of sex-disaggregated data;
- Assist PMU and SIOs to form PPs with appropriate representation of women in the project area.
- Assist PIM specialist on capacity building of WUA members on O&M of agriculture infrastructure.
- Support the PIM specialists to incorporate social and gender dimensions in preparing the relevant training programs for the Project staff, NGOs, and support organizations; community; and in undertaking pilot strengthening of PPs.
- Monitoring GAP implementation progress on regularly basis with field visits and quarterly reporting of progress and results;

- Work with the SIO and support services teams to define development needs and priorities with a specific focus to women within the PPs and support the identification of appropriate programs for women to address those needs and priorities.
- Work with the Training and Capacity Development Specialist to prepare relevant training materials to implement the social development and participation strategy, and manage resettlement and indigenous peoples issues primarily safe guarding legal and social rights of women in implementing the sub-project and ensure adequate participation of women in all training and capacity building programs
- Ensure that small earthwork contracts during construction of field channels are awarded to disadvantaged members, especially local women of the community and develop guideline to ensure that small earthwork contracts during construction of field channels are awarded to disadvantaged members of the community specially communities having large number of women headed households.
- Orient contractors on employing female laborers in construction work towards compliance of regulations related to equal pay for equal value of work.
- Assist with the planning and provide support to the implementation of programs, especially designed for empowerment of women from indigenous and landless people, developed to utilize the Japan Fund for Poverty Reduction (JFPR)

II. CONSTRUCTION MANAGEMENT AND SUPERVISION CONSULTANTS - PACKAGE – CS 1.

A. Overall Duties and Responsibilities of the Consultant

The consultant shall assist the PMU staff and Project Managers to carry out all the duties normally associated with supervision and management of construction activities. This will include but is not limited to checking contractors' insurances/ guarantees/ bonds and the review of contractors' progress.

The Consultant and the assigned supervision team will be at site as their duty station. The overall duties of the Consultant and the site supervision team are to assist Project Manager in contract administration and in monitoring and supervising the daily Construction Works of the project. Other duties and responsibilities of the Consultant include:

- (a) Assistance to Project Manager to approve the contractor's work program; the setting out of the works; the Contractors' key personnel, materials and sources of materials.
- (b) Provide Project Monitoring Services by adopting the standard project management software (e.g. MS Project) and other appropriate software tools to ensure effective planning, scheduling, and work programming with time and cost controls. The Consultant shall identify the critical activities, delay matrix and recommend corrective actions both to the construction contractor and the SIO/PMU.
- (c) Ensure that the construction work is accomplished in accordance with the technical specifications and other provisions of the Contract Documents.
- (d) To identify construction problems and delays and recommend to the Project Manager for actions to expedite progress if the Works fall behind schedule;

- (e) To advise the Project Manager on all matters relating to compensation events and disputes of the Contractor and to make recommendations thereon, including the possible recourse to arbitration.
- (f) To prepare a Construction Supervision and Quality Control Manual outlining routines and procedures to be applied in contract management, construction supervision and administration.
- (g) To check all quantity measurements and calculations required for payment purposes and ensure that all measurements and calculations are carried out in a manner and at the frequencies specified in the contract documents.
- (h) To supervise the Contractor in all matters concerning safety and care of the works (including the erection of temporary directional and advisory signage) and, if required, to request the Contractor to provide any necessary lights, guards, fencing, and watchmen;
- (i) To monitor and check the day-to-day quality control and quantity measurements of the works carried out under the Contract and countersign the monthly payment certificates when the quality of the works is satisfactory and the quantities are correct. The Consultant shall draw the Engineer's attention to any instances of non-conformance of the Contractor's works with the technical specifications;
- (j) To carry out such duties under the terms of the Contract, this may from time to time be directed in writing by the Project Manager.
- (k) To monitor that contractor is complying with the stipulated conditions of contract agreement related to environmental and social aspects and submit monthly/quarterly report on the compliance to PMU

B. DETAILED SCOPE OF WORK

B.1 CONSTRUCTION SUPERVISION AND CONTRACT MANAGEMENT

- Work as the Engineer or Employer's Representative within the context of the Conditions of Contract
- Study the technical specifications that are provided by PMU as a part of the contract documents, designs and drawings of various components for the canal works.
- Review and recommend for approval the contractor's detailed work program, method statement for construction and commissioning, availability and ensuring the adequacy of contractors' inputs in terms of materials, equipment, construction machinery and human resources in accordance with the provisions contained in the work specifications / general conditions of contract / particular conditions of contract.
- Assist Project Manager's representative in recording Initial ground levels taken in presence of the authorized representative of the construction contractor. The Consultant shall check and verify the governing ground levels and data relating to the site and its interface with the designs and drawings provided for implementation and give an expert opinion with regard to reaching a solution in case there are significant variations in these levels and data.
- Check and evaluate the contractor's mobilization on site with respect to machinery and personnel related to the project construction as per the provisions of the contract and their suitability and acceptability on site within the framework of the work and advice the Project Manager for granting permission to start the work.

- Assist Project Manager's representative to set out on the ground the alignment of the Canal, location of the Canal structures and other works as per the standard engineering practices based on the dimensions and data provided in the approved construction drawings.
- The Consultant shall supervise the works that are executed by the construction contractor on a day-to-day basis through a team of site engineers and ensure that all the works are executed as per the technical specifications and in consonance with the work program approved by the SIO.
- Monitor and enforce, as detailed in the Contractor's Safety Manual, the measures established to ensure safety of the workers, other project personnel, the general public and works
- Monitor compliance by the contractor of the stipulated conditions related to environment and social aspects
- Assist the Project Manager in fulfilling his obligations as specified in the contract within the specified timeframe.
- Assist Project Manager in efficient contract management, the time control, quality control and cost control clauses of the Contract shall be scrupulously monitored. The consultant shall assist the Project Manager in periodic inspection of works.
- Assist Project Manager's representatives to write daily site diary which shall record all events pertaining to the administration of the Contract, requests from and orders given to the Contractor, and any other information which may at a later date be of assistance in resolving queries concerning execution of the works;
- Preparing Construction and Operation Monthly Progress Reports in agreed formats for each sub-project in suitable project monitoring software, including physical and financial progress, reports on variations, time-extensions, problems and issues etc.
- Regularly monitoring physical and financial progress against the milestones as per the Contracts so as to ensure completion on time;
- Basing on "Request for Inspection" made by the contractor, the consultant shall assist the Project Manager or his representative in inspecting the work.
- Assist Project Engineer in checking all quantity measurements and calculations required for payment purposes and ensure that all measurements and calculations are carried out in a manner and at the frequencies specified in the contract documents;
- Assist Project Manager's representatives in evaluating and processing contractors' requests for interim payment
- To identify construction problems and delays and recommend to the Project Manager actions to expedite progress if the Works fall behind schedule;
- Assist Project Manager to interpret and apply various provisions of the contract documents with respect to the Contractor's conformance and compliance with his contractual obligations in general and with respect to compensation events leading to time extension, variations, additional compensation or payment of extra cost and disputes raised by the Contractor in particular and recommending appropriate decisions;
- To prepare detailed recommendations to the Project Manager for contract change orders and addenda, as necessary, to ensure the best possible technical results are achieved with the available funds;

- To advise the Contractor to carry out all such works or to do such things as may be necessary in his opinion to avoid or to reduce the risk of any emergency affecting the safety of life or of the works or of adjoining property.
- To assist the Project Manager with the execution of the Taking Over by the Employer from the Contractor of each Contract and preparing lists of deficiencies which need to be corrected.
- Assist Project Manager in checking the As-Built drawings of structures that are submitted by the contractor on completion of work.
- Assist Project Manager in preparation of completion report of the work.
- Any other work that is needed for application of state-of-the-art technology for Construction Management and transfer of technology to SIO/PMU staff.
- Examine, evaluate and submit a report to the Project Manager on evaluation of the Technical Bid presented by the construction contractors in response to the Notice Inviting Tenders (NIT) issued by the PMU/SIO, as per the evaluation criteria contained in the bid document.
- Examine, evaluate and submit a report to the Project Manager on evaluation of the Price Bid presented by the construction contractors whose Technical Bids are declared to be significantly responsive to the bid documents and are opened for price evaluation. Compare the prices quoted by the construction contractor with PMU Schedule of Rates (SOR) / prevailing market rates through a process of rate analysis wherever required and give an opinion about the reasonability and workability of the price quoted by the contractor.

B.2. QUALITY ASSURANCE & CONTROL

- Review and recommend to the Project Manager for approval of the contractor's detailed Quality assurance & control plan for different component of work in accordance with contract provision.
- Consultant shall ensure a system for the quality assurance of the works. The system of control of quality of materials and completed works shall include sampling methods and acceptance criteria. The sampling methods and the acceptance criteria shall be based on the Technical Specification provided in contract documents, and the recommendations of the relevant latest BIS codes, PMU's quality manual and other relevant publications and international practices.
- Review the suitability of sources of materials and their quality on the basis of inspection, test results and/or manufacturer's certificates.
- To check Contractor's field laboratory to conduct different quality control tests, calibration of equipment as per standard frequency specified in relevant BIS / specification and impart training to Contractor' personnel to conduct different tests.
- The Consultant shall witness contractor's concrete mix design and ensure that cement content should be minimum possible / optimum for various grade of concrete prescribed as per IS 456-2000.
- The Consultant shall undertake random representative sample checks as instructed by the Project Manager, independently for quality control in presence of representative of contractor and Project Manager. The Consultant shall use laboratories of PMU/ Field Lab of Contractor / Lab of Engineering colleges / Govt. approved Laboratory performing desired tests which is better suited for timely quality control of work. The Consultant shall have full access to witness /

supervise all the tests in contractor's laboratory during contract implementation period.

- The Consultant shall check all the records required to be maintained as per quality assurance plan of contractors periodically.
- The Consultant shall review curing arrangement to ensure profuse curing be done in accordance with construction contract specifications.
- The Consultant shall also furnish the summary of QC test results of all material of construction in each activity of work and O.K. cards as prescribed by the PMU and furnish a QC certificate (regarding quality of material, workmanship and performance) and issue no objection certificate for payment of contractor's invoices.
- The Consultant shall supervise the works that are executed by the construction contractor through a team of site engineers and ensure that all the works are executed as per the specifications and in consonance with the quality assurance plan approved by the PMU.
- The Consultant shall assist Project Manager's representative in checking and approving the reinforcement bar bending schedules given by the contractor as per the designs and drawings approved by the PMU. Concreting shall be allowed only after the bar bending schedules and the resultant reinforcement placed in the structure is approved.
- If the Consultant considers any item of work is substandard or unacceptable, he shall inform the Project Manager and the contractor for any rectification required in writing immediately with full justification thereof.
- To perform all other duties not covered above to ensure that high quality construction is achieved and delivered to the "Owner".

C. SPECIFIC TERMS OF REFERENCE:

C.1. Team Leader/Construction Management Specialist

The Team Leader will need to be a professionally qualified graduate chartered civil engineer with not less than fifteen years' experience in (i) designing (ii) project management and (iii) contract management in major projects in the field of Water Resources development. The Team Leader shall be solely responsible for the construction supervision and management of the civil works of the sub-projects of the Program. He/she shall also be responsible for overseeing the implementation of due diligence aspects into contractual agreements under the project. He will report directly to the PMU Project Director. The Team leader should be competent in planning, designing, contractual management, resolving problems, quality maintenance, budgeting and financial control, progress monitoring, international procurement procedures, communication skills and documentation. The specific tasks include:

- (i) Assist the Chief Engineer-cum-Project Director and other staff in the day-today management of construction works and related activities.
- (ii) Assist the Chief Engineer-cum-Project Director and other staff in planning, control and management of the teams' work.
- (iii) Assist in monitoring progress, evaluating results and identification and resolution of constraints.
- (iv) Prepare reports including inception, monthly, end of season and final reports.
- (v) Assist in developing a construction management system for the works; Provide

(vi) Assist in developing Quality assurance & control plan.

C.2 CONSTRUCTION MANAGEMENT ENGINEER

The Construction Management Engineers shall be senior graduate engineers with not less than twelve years of experience in managing and supervising construction works within the water sector. The tasks will be to assist Project Manager in performing the following activities:

- (i) Review and approve the construction methodology and schedule submitted by the contractor;
- (ii) Implement a construction management system for the works;
- (iii) Check contractors' setting out;
- (iv) Taking measurements for the purpose of certifying payments and claims;
- (v) Quantity control of the materials and works;
- (vi) Coordination with the relevant authorities on site during construction;
- (vii) Keep daily records of all aspects of their supervision works;
- (viii) Approve the materials and equipment brought by the contractor;
- (ix) Prepare and implement any minor adjustment required to the drawings and plans;
- (x) Monitor the environmental impact during construction;
- (xi) Check monthly measurement of work and certify payment;
- (xii) Ensure co-ordination between contracts and contractors, that the authorities and the public are continually informed and consulted on the works program;
- (xiii) Ensure that complaints from the public and other stakeholders are attended to expeditiously and take the necessary action to resolve any conflicts arising;
- (xiv) Ensure that any dispute arising with day to day work is resolved at site level;
- (xv) Advise Project Manager on claims, disputes and defect corrections certification;
- (xvi) Report progress, trends which are likely outcome of contracts and other information required to the PMU;
- (xvii) Ensure that comprehensive records of the construction works are maintained; and
- (xviii) Supervise commissioning on completion and that as built records and that appropriate operation and maintenance manuals are prepared.
- (xix) Any other duties assigned by Team Leader/ Chief Engineer-cum-Project Director, relevant to the investment Program.
- (xx) Provide assistance to the Project Managers for total performance of the contract including compliance to all conditions of contract contained in the NCB contract that is awarded by PMU to the construction contractor.
- (xxi) In case of disputes relating to interpretation of general conditions of contract, conditions of particular applications, work specifications as well as the billing by the contractor and payment by Project Manager, the Consultant shall prepare necessary brief with required documentation for consideration at the level of the Adjudicator, if invoked by the contractor, and make presentations before him.
- (xxii) The Consultant shall also provide technical support to the PMU for resolution of the disputes.

C.3 QUALITY CONTROL ENGINEER

The Quality Control Engineers shall be senior civil graduate engineers with not less than twelve years of experience in managing and supervising construction works within the water sector. The tasks will be to assist Project Manager in performing the following activities:

- (i) Review and approval of the contractor's detailed Quality assurance & control plan for different component of work in accordance with contract provision;
- (ii) Supervision and monitoring the Contractor's activity to ensure satisfactorily standards, quality assurance, control of workmanship and progress;
- (iii) Review the suitability of sources of materials and their quality on the basis of inspection, test results and/or manufacturer's certificates;
- (iv) Check Contractor's field laboratory to conduct different quality control tests, calibration of equipment as per standard frequency specified in relevant BIS / specification and impart training to Contractor' personnel to conduct different tests;
- (v) The QC Engineer shall check all the records required to be maintained by the contractor as per quality assurance plan periodically;
- (vi) Assist Project Manager's representative in checking and approving the reinforcement bar bending schedules given by the contractor as per the designs and drawings approved by the PMU;
- (vii) Check contractor's concrete mix design and ensure that cement content should be minimum possible / optimum for various grade of concrete prescribed as per IS 456-2000;
- (viii) To perform all other duties not covered above to ensure that high quality construction is achieved and delivered to the "Owner".

C.4 RESIDENT ENGINEERS

The Resident Engineers shall be civil graduate engineers with not less than seven years of experience in managing and supervising construction works within the water sector. The tasks will be to assist Construction Management Engineer and Project Manager in performing the following activities:

- (i) Check contractors' setting out;
- (ii) Taking measurements for the purpose of certifying payments and claims;
- (iii) Quantity control of the materials and works;
- (iv) Coordination with the relevant authorities on site during construction;
- (v) Keep daily records of all aspects of their supervision works;
- (vi) Approve the materials and equipment brought by the contractor;
- (vii) Prepare and implement any minor adjustment required to the drawings and plans;
- (viii) Monitor the environmental and social impacts during construction and submit monthly reports;
- (ix) Check monthly measurement of work and certify payment;
- (x) Ensure co-ordination between authorities and contractors, that the authorities and the public are continually informed and consulted on the works program;
- (xi) Ensure that complaints from the public and other stakeholders are attended to expeditiously and take the necessary action to resolve any conflicts arising;
- (xii) Ensure that any dispute arising with day to day work is resolved at site level;
- (xiii) Advise Project Manager on claims, disputes and defect corrections certification;
- (xiv) Report progress, trends which are likely outcome of contracts and other information required to the PMU;

- (xv) Ensure that comprehensive records of the construction works and testing are maintained; and
- (xvi) Supervise commissioning on completion and that as built records and that appropriate operation and maintenance manuals are prepared.
- (xvii) Any other duties assigned by Team Leader/ Chief Engineer-cum-Project Director, relevant to the investment Program.

D. ENVIRONMENTAL SAFEGUARDS COMPLIANCE

The consultant will check and ensure that the contractors have adequately adhered to the following elements;

• Adherence to Social safeguards Policy of Government of Odisha and ADB;

• Compliance with the Environmental Management Plan (EMP) of the Sub-project during construction.

D.1. ENVIRONMENTAL MANAGEMENT PLAN (EMP) IMPLEMENTATION

SCOPE OF WORK:

- Assist SIOs in the implementation of EMP as defined in the Initial Environmental Examination (IEEs) Reports;
- Assist PMU in training the site inspectors and associated staff on EMP implementation aspects, including monitoring schedules and formats, and reporting, by CSM assigned Safety Officers and Environmental Coordinator;
- Ensure systematic implementation of Environmental Management Plan (EMP) using environmental parameters and formats which have been developed by the project, as referenced in Subproject Initial Environmental Evaluation (IEEs);
 - Identify the locations of environmental monitoring with assistance from PMU Environmental Specialist as needed;
- Undertake scheduled sampling/testing as part of environmental monitoring (i.e. carrying out testing of surface water, ground water, silt, soil, and noise as applicable) as stipulated in EMP of each sub projects in consultation with the concerned SIO Manager;
 - The environmental testing and monitoring shall be as per the suggested frequency as detailed in the IEE Chapter 8 section Environmental monitoring Plan and the test reports shall be submitted to SIO/ Executive Engineer on a monthly basis —as part of monthly reporting on EMP
- Assist the SIOs for ensuring the civil works contractors comply with all the regulatory and statutory requirements of Government and ADB safeguards Policy as described in the IEEs and EMP of subprojects
- Ensure monitoring reporting by Contractors (in the format attached) is submitted to SIO/ Executive Engineer on a monthly basis.

• Assist the PMU and ISPMC Environment Specialist during field visits and for undertaking reviews of status and progress of EMP implementation

E. STAFFING LEVELS AND EXPECTED DURATION

The table in Sec 7.2 shows project staffing requirements. It has been estimated that the Consultant shall provide 2 Resident Engineers each at Pattamundai and Machhagaon major irrigation sub-project site and one Resident Engineer each in balance sub-projects; provide one Construction Management Engineer(CME) and one Quality Control Engineer(QCE) each at Machhagaon and Pattamundai; one CME and one QCE for MCII and HLC Range-I sub-projects and one CME and one QCE for all the 3 medium irrigation sub-projects; provide Team Leader/Construction Management Specialist at Project office at Bhubaneswar. Man months shown for the staff are provisional and changes can be recommended by the Consultant at the time of proposal submission.

CVs of proposed staff shall be provided with the Consultant's submission to the RFP. Staff complement shall be presented both in tabular and bar chart format indicating the estimated staff months of each category of staff for the PMU/DOWR's evaluation of technical / financial proposals.

E.1 Duty Station for Site Supervision Team

Duty station for the site supervision team will be on site with visits as required to the PMU/DOWR offices in Bhubaneswar for progress meetings and supervision discussions as required by PMU/DOWR. The consultant will be required to make arrangements for accommodation of their site supervision team personnel at their duty station nearby the construction site. The accommodation and operating costs should include all required travel fares, office supplies, vehicle rental, and all arrangements and costs for the team to be self-sufficient at the duty station site (Consultants Subproject office).

E.2. Consultant's Key Professional and Support Staff:

The consultant shall deploy and put in place on site, the following key professional staff (input durations are provisional):

SL No.	Position	Qualification	Experience	Input months
1	Team Leader/	B.E. (Civil)	15 years plus as a Team	33
	Construction		Leader in infrastructure	
	Management Specialist		projects with experience in	
			construction planning &	
			management and contract	
			management.	
2	Construction	B.E. (Civil)	12 years plus as a site	96

Table 2 - Consultant's Key Professional

SL No.	Position	Qualification	Experience	Input months
	Management Engineer (4 nos.)		engineer in water resources/ infrastructure projects with experience in managing and supervising construction works.	
3	Quality Control Engineer (4 nos.)	B.E. (Civil)	12 years plus as a site engineer having experience in quality assurance of irrigation, water resources and/or major infrastructure projects.	96
4	Resident Engineers (two each for 2 major projects Machhagaon and Pattamundai, one for each 2 major project MCII and HLC-I and 3 for 3 medium projects and MCII) 9 positions	B.E. (Civil)	7 years plus as a site Engineer in civil engineering infrastructure projects.	216
			Total	441

E.3. Other Support Staff

The consultant should also provide approximately (i) 168 person months of Quality control Assistants time, (ii) 168 person-months of quantity survey attendant's time, (iii) 201 p-m for CAD 8 operators; (iv) 33 p-m for office manager, (v) 33 person months of Accountant's time and (vi) 234 person months of 9 office attendant's time. Total inputs are 837 p-m.

F. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES:

F.1. Progress reporting:

The Consultant shall prepare and submit monthly reports of the works, fully describing them by relevant progress of the works and indicating the problem areas and actions required to overcome authority. The Consultant shall also prepare and submit End-of-the season report at the end of each working season describing the progress of the works package wise and indicating the problem areas and actions required to overcome authority. The Consultant shall also prepare completion overcome authority. The Consultant shall also prepare and submit progress of the works package wise and indicating the problem areas and actions required to overcome authority. The Consultant shall also prepare and submit Package Completion Report on completion of works of a civil work package.

Within one month of mobilization, the Consultant shall prepare and submit Inception Report describing the working methodology and work program for the services. The Consultant will prepare and submit Final Report of the Services on completion of the Services.

F.2. SCHEDULE OF REPORTING AND DELIVERABLES:

The Consultant is responsible for providing information and reports on the on-going activities and progress of work. The consultant is required to submit, for each sub-project, the following reports to the Project Manager/ Chief Engineer-cum-Project Director in English. All reports should be submitted as required below and in an electronic and hard copy format. All reports should contain an executive summary not exceeding two pages.

- (i) Inception report in 5 copies plus a soft copy, one month after the issue of letter of commencement of work. This report should include the related work arrangements, the staff deployment schedule and details of programme of works.
- (ii) Quality Assurance Plan in 5 copies plus a soft copy one months after the commencement of work. The report should include type and nature of QC tests to be conducted, place of testing, acceptance criteria, frequency of tests, standard observation sheets and documentation based on approved construction tender documents.
- (iii) Project Completion Reports on completion of a package in 5 copies plus a soft copy;
- (iv) Reports in 5 copies plus a soft copy at monthly intervals and at the end of each construction season, summarizing financial situation of all work and contracts, progress achieved, difficulties encountered and issue to be resolved.
- (v) Monthly Reports of the EMP implementation monitoring using the monitoring check list and report format signed prepared by CSM consultants with all the relevant documentation, including reported irregularities or non-compliances and recommendations for any corrective action proposed.
 - The reporting system starts with the CSM consultants inspecting/monitoring the civil works sites and construction contractor activities, the main sources which may impose anticipated environmental impact as per the EMP check list (tables of Chapter 8 of IEE). The CSM consultants will report on a monthly basis to SIO / Executive Engineer in the reporting format provided in the IEEs
- (vi) On-going Inventory of Records of Environmental monitoring test results as per the suggested frequency—which may be attached to the Monthly Reports
- (vii) On-site Records of site inspections and monitoring activities retained/filed in CSM offices and SIOs for review and audit based on performance indicators developed by the project, as may be required by PMU/ADB.

Table 3 - Deliverables and Payment Schedule

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Deliverables Contents limeline % Payment	Deliverables	Contents	Timeline	% Payment
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On submission and acceptance of Inception Report including Quality Assurance Plan (5 copies plus a soft copy)	The report should include the work arrangements, staff deployment schedule and programme of works. The Quality Assurance plan should include type and nature of QC tests to be conducted, place of testing, acceptance criteria, frequency of tests, standard observation sheets and documentation based on approved construction tender documents.	Within one month after the issue of letter of commencement of work.	5% of the Contract price
On submission and acceptance of Resource Based Work plan of Civil work Packages (5 copies plus a soft copy)	Construction Work plan for each contract. Should indicate resources required for completing the work in time with acceptable quality.	Within one month after the issue of letter of commencement of work.	5% of the Contract price
On submission and acceptance of Monthly Monitoring Report (5 copies plus a soft copy)	The report should include civil works contract wise analysis of physical and financial progress achieved, difficulties encountered and issue to be resolved. The report should also include monthly Environmental monitoring report in the reporting format provided in respective IEEs.	10 th of succeeding month	80% of the monthly Invoice
End of Construction season monitoring report (5 copies plus a soft copy}	The report should include civil works contract wise analysis of physical and financial progress achieved, revision of work plan if needed, difficulties encountered and issue to be resolved.	31 st July of each year	Payment is linked to Final Report
Financial Year ending report	The report should include civil works contract wise analysis of physical and financial progress achieved, difficulties encountered and issue to be resolved.	30 th April of each year	Payment is linked to Final Report
Contract Completion Reports (5 copies plus a soft copy)	As per standard format acceptable to ADB	Within one month of completion of any contract	Payment is linked to Final Report
On submission and acceptance of Final	It should include summary of all above reports, difficulties	End of the contract period	10% of the

Report	encountered in implementation	Contract price
(5 copies plus a soft	of civil works and lessons	-
copy}	learnt.	

F.3. Review & Coordination Meetings:

Monthly review and coordination meetings shall be held with the Consultant's team leader and expert / specialist team members and representative of contractors shall be held with the Project Manager/ Superintending Engineer to review the construction works.

A Quarterly review and co-ordination meeting with the Consultant's team leader & expert specialist team members and contractors shall be held with the Chief Engineer-cum-Project Director, PMU at Bhubaneswar in order to review implementation and progress of the assignment. During the meeting the Consultant shall also provide a video recording encompassing all major components of the project and appraise about the program during the quarter through a Microsoft Power Point / Multimedia presentation. All the suggestions comments that are made during such meetings shall be implemented by the Consultant and construction Contractors.

G. Consultant's Office and Equipment:

The Consultant shall be responsible for operating and maintaining one Program office and 7 sub-project offices including all office equipment, supplies and communications and transport at suitable locations in the Project area for efficient and coordinated performance of its Services.

All the Key Personnel shall be deployed at these offices as specified in the Staffing Schedule. The authorized officials of PMU may visit the Consultant's Offices any time during office hours for inspection and interaction with the Consultant's Personnel. It is not expected of the Consultant to carry out the operations from the Head/Home Office.

The Consultant shall mobilize and demobilize its Professional Personnel and Support Personnel with the prior concurrence of Chief Engineer-cum-Project Director, PMU and shall maintain the time sheet/ attendance sheet of all Personnel. These time sheets/ attendance sheets shall be made available to the Authority as and when asked for and a copy of such record shall be submitted to the Authority at the end of each calendar month countersigned by the respective EEs.

After completion of Program the equipment and other items purchased under Program shall be handed over to the PMU.

III. MINOR LIFT IRRIGATION POINTS IMPLEMENTATION CONSULTANTS - PACKAGE – CS 2.

A. OBJECTIVE(S) OF THE ASSIGNMENT

The assignment aims at the revival of defunct and improvisation of partially operating schemes with PP / farmers' involvement in planning & implementation through the Consultancy's two years engagement period. The scheme development phases and activities / milestones are tabulated at Table-1. The Consultancy will complete implementation of 750 MLI schemes in the districts of Bhadrak, Balasore, Keonjhar, Mayurbhanj, Sundargarh and Jharsuguda which will be finalised after receipt of list of subprojects from OLIC.

A 24-month cycle for revival of defunct schemes with PP / farmer involvement in planning & implementation is proposed. The scheme development phases and activities / milestones are given below. For improvement of functional schemes fast tracking may be possible.

Scheme		Activity / Milestone		Remarks
Development				
Phase				
Ν	Descriptio	Nr	Description	
Ι	Preparation Phase (9 months)	1	Reconnaissance Report : field visit and check of elimination criteria. If these appear to be satisfied farmers invited to submit a Funding Application.	2 page reconnaissance report prepared by MLIPC with assistance by / guidance from PMU staff (refer elimination criteria)
		2	Farmers prepare a Funding Application comprising the following statements signed by PPs / farmer representatives: (i) list of major demands and request for funding; (ii) sketch of requested distribution pipe layout and approximate length; (iii) list of all landowners in command area and tenure arrangements; (iv) simple O&M and cropping plan which does not include rabi paddy rice; (v) outline of PP / farmer security arrangements proposed for pump and LT line.	For schemes recommended for screening (feasibility) the PP / farmers will be required to submit the Funding Application before proceeding to next step. Funding Application to be attached to Odisha Lift Irrigation Corporation (OLIC) reconnaissance report and forwarded to PMU (lift irrigation cell).
		3	Work Plan : Reconnaissance Reports & Funding Applications Reviewed by PMU, and schemes selected for appraisal.	PMU will select likely schemes located and clump them together for efficiency of implementation.

Table - 1: Scheme Developmen	t Phases and Activities/Milestones.
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	Scheme		Activity / Milestone	Remarks
Development			-	
	Phase			
Ν	Descriptio	Nr	Description	
		4	Draft & Final Appraisal Report to be prepared using prescribed format: screening criteria to be met. Field visit made by PMU lift cell to check validity of PP / farmer statements and to finalise report. The Go – No Go decision will be made by the PMU.	Appraisal Report prepared by Consultant mobile team and finalised by PMU lift irrigation cell, to include Go – No Go decision based on number of points allocated.
		5	PP formed / reformed and up-front contribution deposited into PP Bank Account.	Up-front contribution to be reviewed semi annually by the PMU.
		6	 Signing of Agreements: (i) Power Agreement between electricity distribution company and PP for commitments for supply of power and payment of charges. PP to make deposit to Distribution Company. (ii) PP Development Agreement signed between PP and OLIC, and countersigned by PMU (lift cell). This Agreement will be effective only if the PP has deposited its up-front contribution into its bank account. 	Unless both agreements are in place, development shall not proceed to Phase II: Construction.
II	Constructio n Phase (6 months)	1	Pump testing to confirm sustainable discharge and pump required.	TW scheme only
		2	Detailed design including (i) walkthrough with PP of pipe distribution system, and confirmation of command area; (ii) quantities and cost estimate.	OLIC will complete the detailed design which will be submitted to the PMU for approval / comment.
		3	Construction Agreement between Dam Safety Division (MP) and PP for construction works, endorsed PMU.	Agreement will only become valid after endorsement by the PMU.
		4	Excavation, connection and backfilling of PVC pipe distribution system.	These activities run concurrently
		5	Installation / rehabilitation of pumping system, including pump, control panel, foundation, etc	
		6	Power line installation and re-connection to grid, complete with transformer and meter.	
		7	Earthen channel distribution system	By farmers / PP
Scheme Development Phase			Activity / Milestone	Remarks
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Ν	Descriptio	Nr	Description	
		8	Commissioning	Adjustment of control valves, command area of each outlet delineated, etc
Ш	PP Farmer Support (9 months).	1	Training needs assessment	These activities may run
		2	O&M Training	concurrently, each with
		3	PP strengthening & monitoring	preferably two visits.
		4	Records & Book keeping. Also independent financial audit.	
	overlap with Phase II: Constructio	5	Agricultural extension: crop management, water management and crop diversification.	

B. SCOPE OF SERVICES, TASKS (COMPONENTS) AND EXPECTED DELIVERABLES

B.1 SCOPE AND TASKS UNDER THE SERVICES:

The consultancy services are required to assist the PMU and OLIC develop implementation of minor lift irrigation schemes over a Two years period in accordance with the process, criteria and arrangements detailed below. The consultancy services will in particular strengthen reporting and M&E, preparatory activities with focus on PP development and selection of schemes meeting project criteria, quality construction and effective post construction support. During two years contract period it is expected that all activities will be completed in 750 sub-projects (in the districts of Bhadrak, Balasore, Keonjhar, Mayurbhanj, Sundargarh and Jharsuguda)

B.2 PROCESS OF DELIVERY BY THE CONSULTANCY SERVICES:

- List of LIPs to be undertaken under the scheme are obtained from OLIC. The schemes are checked against for standardized selection Criteria. PPs of selected LIPs are mobilized for the norms and provisions of the scheme. Mobilized PPs have to resolve and sign a funding application to PMU agreeing to conditions of the scheme. After that PMU shall prepare appraisal reports.
- An up-front cash contribution by the PP prior to signing of the PP Development Agreement. This will involve placing funds in an interest bearing Pani Panchayat account at the rate of Rs 200/ha command; a total of Rs 4,000 for a typical 20 ha command area.¹

¹ The upfront cash contribution shall be reviewed annually by the PMU, and should be about 10% of the pump and associated pumping infrastructure cost.

- Ensuring a reliable energy supply is of high priority for most LIPs, most of which will require one or more of the following: new, dedicated LT line not more than 0.2km in length with poles, transformer and power meter. The PP and the Project will contribute to this cost, which will typically be in the range Rs 200,000 to Rs 300,000. The PP's share will be 2% and will be deposited with the electrical Distribution Company at the time of signing a Power Agreement. The Project and/or Distribution Company will pay the balance. The PP deposit will be retained by the Distribution Company for 3 years and then released following satisfactory payment of power bills.
- The PP will make a labour (or cash) contribution equivalent to typically 20%² of the schemes development cost by implementing the civil works, including pipe excavation and back filling, and simple structures. The PP will levy a water charge on its members to cover scheme O&M and eventual scheme replacement costs.
- PP / farmer active involvement in scheme preparation and development, including preparation and submission of statements prior to consideration of the scheme by the PMU, walkthrough report of pipe layout before design, and implementing civil works under a community / direct appointment contract with the PMU.

B.3 CRITERIA FOR DELIVERY BY THE CONSULTANCY SERVICES

a. SELECTION CRITERIA

All schemes will satisfy the following elimination criteria assessed by a reconnaissance visit. The elimination criteria comprise:

- Not a new scheme, but either a defunct or partially operating scheme.
- Water to be available with no significant adverse effect on other users, and of acceptable quality: salinity less than 1.5dS/m and sodium hazard SAR < 10.

• Soils: suited to irrigated agriculture with stone content in root zone not exceeding 15%.

• Land form: slopes not more than 5% and no significant earthmoving volume required.

- Command area between 10ha and 40ha.
- Social : land tenure not obviously skewed (see below); no widespread tenant farming; no sharecroppers.
- Submission of a Funding Application by the PP complete with required statements, indicating PP / farmer interest and commitment.
- Power available for scheme: project will assist in securing a dedicated power line providing the length required is not more than 1 km.

b. APPRAISAL REPORT

The Appraisal Report will comprise the following main sections: (i) Salient Features; (ii) Natural Resources; (iii) Subproject Description & Infrastructure; (iv) Social & Agricultural Assessment; (v) PP Assessment; (iv) Proposed Sub-project; (iv) Costs; (v) Go-No Go Decision & (vi) Implementation.

² The labour contribution will depend on the works required, with a greater percentage contribution for schemes where the focus in on the distribution system and a smaller percentage contribution where the focus is on pumping plant and power.

The Final Appraisal Report will be prepared by MLIP Consultants and submitted to the PMU. The PMU lift irrigation cell will complete the report³ with outline design and check that the screening criteria are met in addition to the elimination criteria:

- Social and PP: (i) no ongoing problems/ disputes between PP and electricity distribution company; (ii) no severe internal disputes including beneficiary farmer dissatisfaction with PP office bearers; (iii) no external disputes with surrounding communities concerning land and water rights; (iv) relatively equal land distribution : the largest 20% of landowners shall not own more than 70% of the command area land ;
- **Technical**: cost estimate includes for (i) PVC distribution systems to provide equitable coverage to whole command area, with all farmers getting equitable access to pumped water; (ii) schemes with hume concrete pipe distributions systems: these cannot be easily repaired and project will replace with new PVC delivery and distribution pipe systems. Also, for river lift schemes, bank to be stable and not prone to erosion, or flooding and sand casting;
- **Economic**: cost per ha (excluding cost of levelling fields) not be more than (i) US\$450/ha for operable schemes to be improved; and (ii) US\$900/ha for defunct schemes to be revived. Full economic analysis required if this cost is exceeded. EIRR where calculated not to be less than 12%. Above cost ceiling is applied on average of all schemes and may be reviewed by PMU; and
- **Environmental**: (i) sustainable use of water; (ii) possible measures to prevent build up of soil salinity; and (iii) no significant re-settlement impacts.

The Go-No Go decision for the LIP will assist to identify schemes most likely to be successful to be included in the Project pipeline of schemes to be developed. For transparent decision making the decision matrix outlined in Table - 2 will be used.

Nr	Criteria	Max Number of Points	Remarks
1	Social	20	High score for schemes with equitable land owning and farmers keen for scheme development and likely to cooperate in scheme O&M
2	PP	10	Max score for existing PP which is representative of farmers. Where no PP has been formed half score. Where PP has been formed but is dominated by a few

Table - 2: Go - No Go Decision Matrix

³ Given the large number (1,400) of Appraisal Reports to be prepared, it is suggested that report preparation could be speeded up by data first be entered into an *excel* spreadsheet which, using macros, will then generate the bulk of the report in *word*.

Nr	Criteria	Max Number of Points	Remarks
			individuals no score.
	Agriculture	20	High score for schemes already cultivating high value crops (e.g. vegetables). No points for paddy-paddy; or paddy-gram cropping pattern.
3	Power supply and infrastructure	20	High score for scheme where power and infrastructure solution is relatively straight forward.
4	Economic	20	Max score if unit development cost within limits specified. Half max score if this is not the case. Scheme rejected if EIRR is less than 12%.
5	Environmental	10	Max score if no adverse environmental impact. Otherwise scheme is rejected.
	Total	100	

The LIPs will be ranked according to their total score as follows:

- Excellent: 81 to 100
- Average: 51 to 80
- Poor: 0 to 50

LIPs scoring less than 51 points will not be included in the Project. Notwithstanding the total score, the LIP will be rejected if elimination criteria apply.

c. PP FORMATION / REFORMATION

A significant number of PPs on schemes included in the Project for development will need to be reformed for properly representation of all beneficiaries, including minority groups and women.

d. LEGAL AGREEMENTS

(i) **A PP Agreement** under the 2002 Pani Panchayat Act transfers ownership of the (infrastructure) assets and O&M responsibilities to the PP⁴. The PP Agreement requires the PP to enter into a power agreement with the electricity Distribution Company and levy water charges on its members for O&M, while OLIC/project undertakes to provide training in pump operation and maintenance. For many of the LIPs included in the Project, there may already be a valid PP Agreement in place signed between the PP and OLIC. Whether or not a PP agreement is in

⁴ PPs committee members are elected every 3-year. The implication is that PP agreement is only valid for 3-years.

place, it will be augmented for project purposes by a PP Development Agreement.

- (ii) The PP Development Agreement will be signed between the PP on the one hand and OLIC and the PMU (lift irrigation cell) on the other. The Agreement will become effective when: (i) a Power Agreement is in place; and (ii) the PP has made its upfront deposit into its bank account.
- (iii) In addition to the normal clauses in a PP Agreement, under the PP Development Agreement the Project (PMU and OLIC), will undertake:
 - To proceed to detailed design of the scheme with intention to proceed to full implementation.
 - To meet construction costs excluding the PP contribution (see below).
 - To provide support for scheme construction and O&M.
 - To support the PP in its activities including book keeping and dispute resolution.
- (iv) The PP meanwhile will undertake to reach General Body agreement to:
 - Member and O&M tariffs (water charges).
 - Scheme operation including rotation of pumped supplies in both Kharif and Rabi.
 - Scheme maintenance particularly of M&E equipment, and appointment of a pump operator / scheme manager.
 - Records / accounts to be kept.
 - The PP Cost Contribution in which farmer beneficiaries will provide (i) labour for pipeline excavation, connection & backfilling; (ii) to construct (unlined) field channels from pipe outlets; and (iii) to level fields ready for irrigation.
 - Arrangements for security of electricity transmission line and equipment.

e. POWER AGREEMENT

Except for schemes where power supply is satisfactory and metered, the project will support steps to provide a dedicated line, transformer and meter to each of the LIPs. To this end discussions will be held with the concerned electricity Distribution Company culminating with a Power Agreement wherein the Company agrees to install the required power improvements, with the PP undertaking to make full and timely payment of power charges as well as taking steps to ensure safety (from theft) of the installed power infrastructure and equipment. The project will bear a proportion of the cost for power, and the PP will be required to make a security deposit to Distribution Company. The Power Agreement will be between the PP and the Distribution Company⁵.

⁵ A variation of this is for the Project to secure power equipment from elsewhere, particularly where there is a clear cost advantage in doing so.

f. IMPLEMENTATION PLAN

Out of the 1,400 lift irrigation schemes, 650 are rehabilitated under Tranche 1 and the balance 750 will be improved under the Project in tranche 2 (total 1400 schemes over an 8-year period as shown in Table -3). The present assignment of the Consulting Services will facilitate the implementation of 750 MLI Sub-Projects in the districts of Bhadrak, Balasore, Keonjhar, Mayurbhanj, Sundargarh and Jharsuguda. In Tranche-2 The Consultant will assist PMU in developing a typical schedule for scheme development.

Table -	3: Lift	Irrigation	Scheme	Implen	entation	Plan
Table -	J. LIII	ingation	Scheme	IIIIpicii	iciliation	i iaii

Project Year	Number of Lift Schemes Initiated	Number of Lift Schemes Active ⁶	Number of SIOs	Implemented During Tranche	Remarks
1	100	100	1	1	Completed.
II	100	200	1-2		
	200	400	2-3		Completed.
IV -V	250	650	2-3		
Total Tr 1	650	650			
VI	250	250	3	2	To be
VII	250	500	3		by the present
VIII	250	750	3		consultants
Total Tr 2	750	750			
Total	1,400				

g. BROAD DIVISION OF RESPONSIBILITIES

The broad allocation of responsibilities for LIP development between OLIC, PMU and the PPs / farmers is given in Table - 4. The PMU is supported in its activities by consultant's staff, as well as a senior engineer seconded to the PMU lift irrigation cell from OLIC.

Table - 4: PMU – OLIC – PP Responsibilities for LIP Development Assisted by Consultants

Scheme	Activity / Milestone	Institution with Prime
Development		
Phase		

⁶ The implementation period for rehabilitation of a lift irrigation scheme is 2 years. Consequently during each year the number of lift irrigation scheme active under the project are those continuing from the previous year and those included in that year.

Nr	Description	Nr	Description	Responsibility
1	Preparation	1	Reconnaissance Report	MLIPIC (support from PMU
	Phase (9	2	Funding Application	PP / farmers (support from
	months)			MLIPIC)
	,	3	Work Plan/ schedule	PMU (MLIPIC to support)
		4	Draft Appraisal Report	MLIPIC (to be finalised by
		5	Final Appraisal Report including	PMU Lift Irrigation Cell).
			Go – No Go decision	
		6	PP formed / reformed	PP, OLIC, MLIPIC (to
		7	i)Power Agreement	PP & Distribution Company
			ii)Development Agreement	PP, OLIC, MLIPIC (to
				support) & PMU
П	Constructio	1	Detailed design including	MLIPIC (PMU to check &
	n (6		walkover & pump testing of TW	approve)
	months)	2	Construction Agreement	PP & Dam Safety Division
		3	Implementation of Power supply	Distribution Company, PP &
			& construction of pumping	MLIPIC (PMU to monitor)
			arrangement & pipe distribution	
			system	
		4	Earthen channel distribution	PP / farmers (PMU/MLIPIC
		5	Commissioning	PP & MLIPIC (PMU/MLIPIC
				to monitor)
III	PP / Farmer	1	Training needs assessment	PP& PMU (MLIPIC support)
	Support (9	2	O&M Training	PP& MLIPIC / PMU
	months).	3	PP strengthening & monitoring	PP & MLIPIC / PMU
		4	Records & Book keeping	PP& MLIPIC / PMU
		5	Agricultural extension	PP, MLIPIC & PMU

h. LOCATION AND SELECTION OF LIPS

(i) The MLI Sub-Projects totalling 750 nos. that will be considered in the Project - 2 are located in the districts of Bhadrak, Balasore, Keonjhar, Mayurbhanj, Sundargarh and Jharsuguda. The average design command area of these schemes is about 22 ha. The MLI Sub-Projects to be implemented are to be selected and submitted to PMU by OLIC Ltd. for improvisation of partially operating and revival of defunct LI Sub-Projects.

B.4. INSTITUTIONAL ARRANGEMENTS

(i) GENERAL

In order to support MLIP planning, implementation, supervision and monitoring of rehabilitation and improvement of minor lift irrigation schemes, a Minor Lift Irrigation Cell (MLIC)

has been constituted in the Project Management Unit (PMU) in the CAD/PIM Directorate of the DOWR. The MLIC will work under the overall supervision of the Project Director of PMU with the guidance of international consultant team for institutional strengthening and project management (ISPM) as well as implementation support by MLIPIC.

a. The MLIC will comprise: (i) a Planning Group (an agriculture economist/engineer, a monitoring and evaluation expert, and two mobile teams each comprising an agriculture and irrigation specialist); and (ii) Development Groups (PIM specialist, agriculture extension specialist, irrigation engineer/ works inspector and NGO support staff). The proposed staffing is given in Table - 5.

Number	Staff Position	Transfer /
		Recruitment
Planning (Preparation	ן אר Group	
	,	
4 Nr	1 Lift Irrigation Executive Engineer, 3	Transfer (from
	ALS	
3 Nr	SIO Manager	Engaged as part of
(depending upon no	(Sub-project Implementation Office	services package.
of SIO offices)	Manager), 1 AE per district and 1 JE per	
	district.	
1 Nr	MLIPI Team Coordinator/Agro-	Engaged as part of the consulting
		services package.
1 Nr	Monitoring and Evaluation Specialist	
Up to 9 Teams each	Mobile teams consisting of one	
	Irrigation Specialist to assist OLIC	
	undertake feasibility assessments of	
	initial reconnaissance to final appraisal	
Development Group	report.	
Nr of Development	PIM Training Coordinator – 2 nos	Engaged as part of
	Irrigation Engineer / Works Inspector – 2 nos	services package.
	Agriculture Dev Specialist-2	

Table - 5: Lift Irrigation Cell Staff Composition

Number	Staff Position	Transfer / Recruitment
25 Nr	Community Organiser : 25 x 3 = 75	Engaged as part of the consulting
		services package.

b. The Planning group (except the mobile teams) will be physically located in Bhubaneswar in the PMU, while the Development Groups staff and mobile teams, will be based in SIO offices / OLIC offices⁷ in those districts where LIPs are being developed. Staff will be periodically moved as scheme district concentrations change.

c. The number of SIO offices will be three, with each office handling about 150 to 300 LIPs at a time. This will vary depending upon operational districts which will be around 2 for each SIO.

d. The number of development support staff to each SIO will be such that: (i) each Community Organiser (CO) works with about 10-15 PPs or about 220- 330 ha; These COs will support all stages of project development, planning, implementation, focusing on PP strengthening, O&M and agriculture and water management development activities (except in reconnaissance go-no-go stage).

(ii) **PREPARATION PHASE ACTIVITIES**

- a. Preparatory activities, including reconnaissance (selection/ elimination), funding applications, appraisal and signing of agreements, will be supported by the PMU Lift Irrigation Cell mobile teams.
- b. Each mobile team consists of an agriculture specialist and a MLI specialist. It is expected that a single field appraisal will be completed in 1-day. Allowing one day for travel, each team will undertake appraisal of preferably five schemes per week. In preparing each scheme several scheme-visits (3-4) would be required, so in one year (say 50 weeks), one team could complete preparatory activities for 70-80 -schemes. The number of mobile teams would therefore vary from one to two (or three).

(iii) CONSTRUCTION AND PP / FARMER SUPPORT PHASE ACTIVITIES

- a. Field SIO based staff will primarily become involved in the Phase II: Construction and Phase III: PP & Farmer Support, phases working together with OLIC staff in offices located in / near to the OLIC district based division offices.
- b. RESPONSIBILITIES OF THESE STAFF INCLUDE:
 - Supporting & checking detailed designs before submission to PMU for approval.
 - Support and checking quantity and quality of construction.
 - PP Strengthening activities including book keeping, dispute resolution, management of PP affairs.

⁷ For improved team work it is essential that the SIO offices are located in the same building / adjacent to the OLIC offices (SIO office/ logistic/ infrastructure maintained by PMU).

- Development of operation & maintenance plans with broad-based PP/farmer agreement.
- Agricultural extension and water management.

(iv) PROCUREMENT ARRANGEMENTS FOR GOODS

- a. Central procurement of (i) mechanical and electrical (M&E) equipment including pumps, transformers and electric cable, and of (ii) PVC pipes will be carried out annually by the PMU using procurement procedures acceptable to the ADB and GoO. Procurement notices will be advertised on the internet (DOWR OLIC website).
- b. The warranty period for equipment and materials is to be at least 1 year, with free pump service within the warranty period. Quality of M&E equipment including PVC pipes to be assured by export promotion and marketing (EPM) certification, or other acceptable certification.
- c. An alternative to central procurement is for the PPs to procure the necessary equipment. This would require considerable support to each PP prior to procurement, but advantages are considerable including:
 - PP with greater capacity and sense of responsibility for scheme infrastructure.
 - Equipment procured would meet PP requirements.
 - Local facilities for equipment repair and maintenance would be stimulated.

(v) EXPECTED DELIVERABLES

a. The deliverables to be prepared under the Project for each LIP and broad delineation of responsibility is outline in Table - 6 below.

Nr	Report	Responsibility	Assisted by
Phase	l: Preparatory		
1	Reconnaissance Report with Farmer Application (Funding Application)	MLIPIC	PMU Lift Cell Mobile Teams
2	Work Plan (Annual – draft and final)	PMU – Lift Cell	MLIPIC
3	Draft & Final Appraisal Reports	PMU – Lift Cell	PMU Lift Cell, Mobile Teams of MLIPIC
4	Power Agreement	PP & Distribution Company	MLIPIC & PMU Lift Cell, Mobile Teams

Table - 6: Deliverable for LIPs

5	PP Development Agreement	PP & PMU & OLIC	MLIPIC & PMU Lift Cell Mobile Teams
6	Procurement of Goods	PMU	MLIPIC
Phase	II: Construction		
1	Design Documents (drawings & cost estimates)	MLIPIC	SIO & PMU Lift Cell Engineer
2	Construction Agreement	PP & Dam Safety Division (MP)	SIO & PMU Lift Cell Engineer
Phase	III: PP & Farmer Support		
1	Scheme specific operation & maintenance plans	PP & SIO staff	PMU Lift Cell, MLIPIC
2	Various reports concerning PP strengthening & agricultural extension (selected schemes)	PP & SIO staff	PMU Lift Cell, MLIPIC
3	M&E report (selected schemes)	PP & SIO staff	PMU Lift Cell, MLIPIC

b. In addition, monitoring including for environmental impact will be carried out and a report would be prepared for clusters of LIPs developed under the Project. This will ensure that appropriate mitigation measures are incorporated in the lift irrigation scheme design.

C. TEAM COMPOSITION & QUALIFICATION REQUIREMENTS FOR THE KEY EXPERTS.

Indicative staffing inputs are given in Table -7 below. Actual staffing numbers and inputs will be revised at inception stage, as agreed with the PMU.

The consulting firm is expected to engage staff for community organization and agricultural/ water management activities in minor lift schemes.

S.	Staff Position	Nr of Staff	Input (sm)
Nr.			
Plann	ing (Preparation) Group		
1	MLIPI Team Coordinator/ Agro-economist	1	1 x 24
2	Monitoring and Evaluation Specialist	1	1 x 24
3	Agriculture Specialist (Mobile Team) -1	1	1 x 15
	Agriculture Specialist (Mobile Team) -2	1	1 x 15
	Agriculture Specialist (Mobile Team) -3	1	1 x 15
	Agriculture Specialist (Mobile Team) -4	1	1 x 15
	Agriculture Specialist (Mobile Team) -5	1	1 x 15

Table – 7: Consultancy Staff Inputs

	Agriculture Specialist (Mobile Team) -6	1	1 x 15								
	Agriculture Specialist (Mobile Team) -7	1	1 x 15								
	Agriculture Specialist (Mobile Team) -8	1	1 x 15								
	Agriculture Specialist (Mobile Team) -9	1	1 x 15								
4	Minor Lift Irrigation Specialist (Mobile Team) -1	1	1 x 15								
	Minor Lift Irrigation Specialist (Mobile Team) -2	1	1 x 15								
	Minor Lift Irrigation Specialist (Mobile Team) -3	1	1 x 15								
	Minor Lift Irrigation Specialist (Mobile Team) -4	1	1 x 15								
	Minor Lift Irrigation Specialist (Mobile Team) -5	1	1 x 15								
	Minor Lift Irrigation Specialist (Mobile Team) -6	1	1 x 15								
	Minor Lift Irrigation Specialist (Mobile Team) -7	1	1 x 15								
	Minor Lift Irrigation Specialist (Mobile Team) -8	1	1 x 15								
	Minor Lift Irrigation Specialist (Mobile Team) -9	1	1 x 15								
Development Group											
1	PIM Training Coordinator -1	1	1 x 18								
	PIM Training Coordinator -2	1	1 x 18								
	PIM Training Coordinator -3	1	1 x 18								
	PIM Training Coordinator -4	1	1 x 18								
	PIM Training Coordinator -5	1	1 x 18								
	PIM Training Coordinator -6	1	1 x 18								
2	Works Inspector -1	1	1 x 18								
	Works Inspector -2	1	1 x 18								
	Works Inspector -3	1	1 x 18								
	Works Inspector -4	1	1 x 18								
	Works Inspector -5	1	1 x 18								
	Works Inspector -6	1	1 x 18								
3	Agriculture Dev Specialist -1	1	1 x 9								
	Agriculture Dev Specialist -2	1	1 x 9								
	Agriculture Dev Specialist -3	1	1 x 9								
	Agriculture Dev Specialist -4	1	1 x 9								
	Agriculture Dev Specialist -5	1	1 x 9								
	Agriculture Dev Specialist -6	1	1 x 9								
	Agriculture Dev Specialist -7	1	1 x 9								
	Agriculture Dev Specialist -8	1	1 x 9								
	Agriculture Dev Specialist -9	1	1 x 9								
4	Community Organisers ⁸	25x3=75	75 x 18								
1	SIO Managers-1	1	1 x 24								
	SIO Managers-2	1	1 x 24								
	SIO Managers-3	1	1 x 24								
2	Asst Engineers-1	1	1 x 24								
	Asst Engineers-2	1	1 x 24								
	Asst Engineers-3	1	1 x 24								
	Asst Engineers-4	1	1 x 24								
	Asst Engineers-5	1	1 x 24								
	Asst Engineers-6	1	1 x 24								
3	Junior Engineers [®]	1x6=6	6 x 24								

⁸ Non key experts.CVs of proposed community organizers will not be submitted with the technical proposals.

SIO Managers may be engaged directly by PMU or by consulting firm after approval by PMU during project implementation

C.1. PLANNING (PREPARATION) GROUP STAFF

a. MLIPI Team Coordinator/ Agro-economist

Tasks

- Prepare Inception Report including methodology and detailed work plan for the Consultants Team that conforms to the program implementation work plan of the project
- Prepare quarterly progress reports
- Prepare the final report synthesizing lessons learnt.
- Prepare/modify economic guideline/ appraisal reports to be used in assessment of economic feasibility of minor lift irrigation.
- Take lead in ensuring all reporting required for development of minor lift irrigation is of a satisfactory standard.
- Plan, guide, coordinate and support activities of Consultants Team providing overall guidance and direction and ensure that the Consultants Team Works in harmony with PMU and OLIC
- Assist the Project Director and coordinate regular reporting of MLI activities.
- Assist the Project Director in planning and coordinating Consultants Team inputs
- Promote the incorporation and adaptation of systems established for the MLI rehabilitation under the CTA and preceding Consultants
- Support the SIO in implementation of agricultural development plan for the lift irrigation schemes
- Assist Information Management Cell of PMU in implementing the monitoring system and MIS for lift irrigation schemes
- Participate in SIO level monthly review-cum-planning meetings in each SIO every month.
- Review monitoring and Progress reports received from SIOs and make recommendations to SIO for follow up action
- Prepare program monitoring and progress reports for the lift irrigation schemes
- Coordinate with field visits to SIOs, Sub-Project sites, OLIC Division offices, DISTCOs as well as line department offices preferably 10 days in a month and motivate consultant Team/SIO Staff.
- Any other responsibility assigned by the Director PMU

Qualification

• Post graduation in agriculture economics, agriculture engineering, agriculture, civil engineering or allied subject

Experience

⁹ Non key experts. CVs of proposed junior engineers will not be submitted with the technical proposals.

- Preferably 10 years experience in planning and managing similar projects
- Knowledge of relevant computer software

b. Monitoring and Evaluation Specialist

Tasks

- Prepare and implement Baseline and monitoring system for lift irrigation schemes
- Assist other SIO staff in preparing monitoring and progress reports for lift irrigation schemes
- Collect various data related to PP, procurement/ material delivery, Implementation progress, PP capacity building etc. from SIOs on regular basis and develop/ maintain appropriate database for information management and reporting.
- Assist Information Management Cell of PMU in implementing the monitoring system and MIS for lift irrigation schemes
- Train the Community Organizers in participatory monitoring and self assessment
- Support Team Coordinator in preparation of quarterly progress report and other reports as and when required.
- Any other responsibility assigned by the Director PMU

Qualification

• Post graduation in any discipline with specialization in statistics

Experience

- Preferably 08 years experience in monitoring & evaluation in participatory irrigation
 management / irrigation/ agriculture/ livelihood projects
- Knowledge of relevant computer software and expertise in data management and data analysis is necessary

c. Agriculture Specialist (Mobile Team)

Tasks

- Assess the potential for agricultural development and increasing agricultural productivity in short listed lift irrigation schemes
- Prepare the agricultural development plan for the short listed lift irrigation scheme
- Facilitate training sessions for PPs on agriculture, horticulture and related topics
- Train the Community Organizers in agriculture planning and extension services
- Support preparation and implementation of training plan for agriculture extension and agri-business development for lift irrigation schemes PPs
- Coordinate with district Agriculture / Animal Husbandry / Horticulture / Fishery etc. departments and other district level agriculture development agencies in supporting implementation of agriculture extension and agri-business development activities in lift irrigation schemes
- Any other responsibility assigned by the Director PMU

Qualifications and Experience: Post-graduate education in agriculture. Preferably 3 years of relevant extension field experience. (OR a relevant Bachelor's Degree with preferably 5 years experience OR Agriculture Diploma plus 7 years of extension field experience).

Specific Field Experience: Preferably 3 years field experience (for Master's Degree holders OR 5 years for Bachelor's and 7 for Diploma holders) in (i) irrigated agriculture (extension) in related to the adoption of modern agricultural technology. (ii) training and working with farmers in developing and implementing cropping and irrigation schedules. Plus experience in training of farmers and other trainers. Preference will be given to those who have expertise in (i) working with farmers in irrigated Rabi (diversified cropping), (ii) Conducting Farmers Field Schools (FFS), and (iii) PIM and working with PPs.

• Knowledge of relevant computer software is desirable

d. Minor Lift Irrigation Specialist (Mobile Team)

Tasks

- Collect funding application from PPs with support of COs and OLIC field staff.
- Assess the technical potential for rehabilitation / improvement of short listed lift irrigation schemes
- Verify and finalise the PP registration details, bank pass book, ayacut map and beneficiary list before preparation of Final Appraisal Report.(FAR).
- Coordinate with DISTCOs for collection of electrical estimate for preparation of FARs.
- Finalize the technical rehabilitation / improvement plan for the short listed lift irrigation scheme
- Assist preparation of Detail Project Reports/Final Appraisal Reports (FARs)
- Guide PPs in understanding the final design, lay out for distribution system and implementation of civil work with quality.
- Provide on the job training on the operation and maintenance of LIPs to the PPs
- Any other responsibility assigned by the Director PMU

Qualifications and Experience: Preferably Bachelor's Degree in Civil/Irrigation/ Agricultural Engineering and preferably 5 years of job-related field experience. Diploma holders with preferably 7 years experience are also eligible to apply. Experience should be related to lift irrigation, command area development (CAD) work (working with Farmers) and Irrigation O&M and water management with PPs.

• Knowledge of relevant computer software desirable

C.2. DEVELOPMENT GROUP

a. PIM Training Co-ordinator

Tasks

- Prepare annual plans and budgets for Pani Panchayat training and capacity development for the lift irrigation schemes based on the approved budget.
- Supervise and monitor implementation of institutional strengthening and capacity development plan for lift irrigation scheme Pani Panchayats
- Orient COs for PP awareness development and motivation on beneficiary contribution.
- Prepare monitoring and Progress reports on lift irrigation schemes Pani Panchayat institutional strengthening and capacity development
- Support Institutional / Capacity Development Expert of PMU in assisting Information Management Cell of PMU in preparing and implementing monitoring system for training and capacity development of SIO staff
- Support Institutional / Capacity Development Expert of PMU in assisting Information Management Cell of PMU in implementing the monitoring system and MIS for institutional strengthening and capacity development of lift irrigation scheme Pani Panchayats
- Create and maintain a database of capacity development resources available at the district level including list of training agencies, consultants, resource persons and emerging capacity development approaches and methodologies
- Train and coordinate the Community Organiser in PIM and planning exercises
- Supervising, monitoring and reviewing the work of Community Organisers
- Any other responsibility assigned by the Director PMU

Qualification & Experience

MA in Social Sciences / MSW / Any Post-graduate with experience in PIM and/or community mobilization would be considered. Candidates should have preferably 5 years of practical (field) experience in supervising Community Organizers. Experience in participatory irrigation management / capacity development in irrigation/ NRM/ Watershed management/livelihood projects is desirable.

• Knowledge of relevant computer software desirable

b. Works Inspector

Tasks

- Assist Pani Panchayats in implementing the Civil Works, Guide PPs to ensure quality of work.
- Verify the quality of work implemented by contractors like external electrification and tube well re-installation / re-development.etc.
- Certify the quality and quantity of civil works implemented by PPs and other works by contractors for payment of bills.
- Sign/ Countersign the bills of suppliers after verification of materials supplied/ delivered by them.
- Assist Pani Panchayats in construction supervision / monitoring of lift irrigation scheme rehabilitation works

- Participate in PP Training programs and facilitate training sessions on CAD, Water scheduling and O&M.
- Distribution of work orders for civil works to PPs and inform status to SIO manager.
- Train the Community Organizer in CAD and water management Works
- Any other responsibility assigned by the Director PMU.

Qualifications and Experience: Preferably Bachelor's Degree in Civil/Irrigation/ Agricultural Engineering and preferably 5 years of job-related field experience. Diploma holders with 7 years experience are also eligible to apply. Experience should be related to lift irrigation, command area development (CAD) and on farm development work (working with Farmers) and Irrigation O&M and water management with PPs.

• Knowledge of relevant computer software desirable

c. Agriculture Development Specialist

Tasks

- Assist the MLIP PPSs for agricultural development and increasing agricultural productivity in the minor lift irrigation schemes
- Implement the agricultural development plan for the short listed lift irrigation scheme
- Provide trainings to the PPs on agriculture, horticulture and related topics
- Train the Community Organizers in agriculture planning and extension services
- Support implementation of training plan for agriculture extension and agri-business development for lift irrigation schemes PPs
- Coordinate with district Agriculture / Animal Husbandry / Horticulture / Fishery etc. departments and other district level agriculture development agencies in supporting implementation of agriculture extension and agri-business development activities in lift irrigation schemes
- Any other responsibility assigned by the Director PMU

Qualifications and Experience: Post-graduate education in agriculture. Preferably 3 years of relevant extension field experience. (OR a relevant Bachelor's Degree with preferably 5 years experience OR Agriculture Diploma plus 7 years of extension field experience).

Specific Field Experience: Preferably 3 years field experience (for Master's Degree holders OR 5 years for Bachelor's and 7 for Diploma holders) in (i) irrigated agriculture (extension) in related to the adoption of modern agricultural technology. (ii) training and working with farmers in developing and implementing cropping and irrigation schedules. Plus experience in training of farmers and other trainers. Preference will be given to those who have expertise in (i) working with farmers in irrigated Rabi (diversified cropping), (ii) Conducting Farmers Field Schools (FFS), and (iii) PIM and working with PPs.

• Knowledge of relevant computer software is desirable

d. Community Organisers

Tasks

- Develop awareness of the PP/ farmers on the project concept, objective, beneficiary contribution and project implementation modalities etc.
- Extend support to Mobile Team and PP in collection of cadastral map, RoR and beneficiary list
- Handholding support to PPs on maintenance of books and records and regularise PP meetings.
- Support SIO managers in formation/ reformation of PPs and organise PPs for signing electrical agreement and development agreement.
- Regularly inform status of civil work to works inspector and SIO manager.
- Regular follow up for timely completion of civil works implemented by PPs.
- Educate farmers and Pani Panchayats in individual and group behaviour, attitudes, need for changing attitudes, identify conflicts and develop proper conflict management practices
- Educate Pani Panchayat representatives on their rights and responsibilities, participatory decision-making and leadership qualities
- Educate farmers and Pani Panchayats in participatory monitoring and self assessment
- work with people to develop and internalize methods to maintain transparency;
- Arrange for external assistance/expertise when PP members (she/he) doesn't possess skills.
- Any other responsibility assigned by the Director PMU

Note: CVs of proposed community organizers will not be submitted with the technical proposals. Submission of these CVs will be as agreed with DOWR (i.e., during contract negotiations or at inception stage,), and will be evaluated on a pass / fail basis.

Qualification

• Graduation in social sciences and relevant subject

Experience

• Preferably 2 years experience in community mobilization

C.3. (a) SIO Manager

Tasks

Under the support & guidance of PMU & MLIPIC and in co-ordination with OLIC, the SIO Manager will,

- a) Supervising, monitoring and reviewing the work of SIO staff
- b) Work in coordination with PMU, MLIPIC field team, COs and OLIC field staff for successful implementation of the project.
- c) Coordinate with OLIC for collection of list of sub-projects from proposed project districts for implementation under OIIAWMIP.
- d) Coordinate with OLIC for formation/reformation of PPs wherever necessary.

- e) Coordinate with electricity DISTCOs, PMU, PPs and OLIC for signing of power agreement and development agreement.
- f) Prepare schedules of civil work/ civil work packages and coordinate with dam safety division for timely issue of work orders to PPs.
- g) With support from the field team, COs and OLIC field staff monitor the implementation of civil work implemented by PP and other works like tube well re-installation, external electrification etc. by contractors.
- h) Coordinate with dam safety division for timely payment of civil works bill to PPs and for other works to contractors based on the certification of Works Inspector.
- i) Collect and maintain sub-project wise pre-project inventory status and progress of inventory status on regular basis with support of the field team and taking help of Engineers deputed from OLIC to work in SIOs.
- j) Collect and compile information related to material supply and execution status at SIO level on regular basis with support from the field team.
- k) Facilitate sub-project level PP meetings with the field team and motivate PPs for successful quality implementation.
- I) Monitor the expenditure likely to be incurred for implementation of civil works like through PP and payment to electrical distribution companies.
- m) Support the Work Inspector under the SIO (from the MLIPIC) for overall quality control & execution of civil works taken by the PPs.
- n) Organise SIO level monthly review-cum-planning meeting and share SIO level information and progress reports with TC, MLIPIC and M&E Expert on monthly basis.
- o) Any other responsibility assigned by the Director PMU.

Qualifications and Experience: Preferably Bachelor's Degree in Civil/Irrigation/ Agricultural Engineering and preferably 5 years of job-related field experience. Diploma holders with preferably 7 years experience are also eligible to apply. Experience should be related to lift irrigation, command area development (CAD) work (working with Farmers) and Irrigation O&M and water management with PPs.

• Knowledge of relevant computer software desirable

(b) Assistant Engineer

Tasks

Under the support & guidance of PMU & MLIPIC and in co-ordination with OLIC, the Assistant Engineer will,

- a. Work in coordination with PMU, MLIPIC field team, COs and OLIC field staff for successful implementation of the project.
- b. Coordinate with OLIC for collection of list of sub-projects from proposed project districts for implementation under OIIAWMIP.
- c. Coordinate with OLIC for formation/reformation of PPs wherever necessary.
- d. Coordinate with electricity DISTCOs, PMU, PPs and OLIC for signing of power agreement and development agreement.
- e. Prepare schedules of civil work/ civil work packages and coordinate with SIO and DD dam safety division for timely issue of work orders to PPs.
- f. With support from the field team, COs and OLIC field staff monitor the implementation of civil work implemented by PP and other works like tube well re-installation, external electrification etc. by contractors.

- g. Coordinate with dam safety division for timely payment of civil works bill to PPs and for other works to contractors based on the certification of Works Inspector.
- h. Collect and maintain sub-project wise pre-project inventory status and progress of inventory status on regular basis with support of the field team and assist SIO Manager.
- i. Collect and compile information related to material supply and execution status at district level on regular basis with support from the field team to support SIO.
- j. Facilitate sub-project level PP meetings with the field team and motivate PPs for successful quality implementation.
- k. Monitor the expenditure likely to be incurred for implementation of civil works like through PP and payment to electrical distribution companies.
- I. Support the Work Inspector and the SIO (from the MLIPIC) for overall quality control & execution of civil works taken by the PPs.
- m. To assist SIO Manager for conducting monthly review-cum-planning meeting and share SIO level information and progress reports with TC, MLIPIC and M&E Expert on monthly basis.
- n. Any other responsibility assigned by the SIO Manager.

Qualifications and Experience: Preferably Bachelor's Degree in Civil/Irrigation/ Agricultural Engineering and preferably 2 years of job-related field experience. Diploma holders with preferably 5 years experience are also eligible to apply. Experience should be related to lift irrigation, command area development (CAD) work (working with Farmers) and Irrigation O&M and water management with PPs.

• Knowledge of relevant computer software desirable

(c) Junior Engineer

Tasks

Under the support & guidance of PMU & MLIPIC and in co-ordination with OLIC, the Junior Engineer will,

- a. Work in coordination with AE & SIO, MLIPIC field team, COs and OLIC field staff for successful implementation of the project.
- b. Coordinate with electricity DISTCOs, PMU, PPs and OLIC for signing of power agreement and development agreement.
- c. Prepare schedules of civil work/ civil work packages and issue of work orders to PPs.
- d. With support from the field team, COs and OLIC field staff monitor the implementation of civil work implemented by PP and other works like tube well re-installation, external electrification etc. by contractors.
- e. Assist in maintaining sub-project wise pre-project inventory status and progress of inventory status on regular basis with support of the field team
- f. Assist in collecting and compiling information related to material supply and execution status at SIO level.
- g. Facilitate sub-project level PP meetings with the field team and motivate PPs for successful quality implementation.
- h. Support the AE, SIOM and Work Inspector under the SIO (from the MLIPIC) for overall quality control & execution of civil works taken by the PPs.
- i. Any other responsibility assigned by the AE and the SIO Manager.

Qualifications and Experience: Diploma holders with preferably 2 years experience are eligible to apply. Experience should be related to lift irrigation, command area development (CAD) work (working with Farmers) and Irrigation O&M and water management with PPs.

Note: CVs of proposed junior engineers will not be submitted with the technical proposals. Submission of these CVs will be as agreed with DOWR (i.e., during contract negotiations or at inception stage,), and will be evaluated on a pass / fail basis.

• Knowledge of relevant computer software desirable

IV. PP STRENGTHENING CONSULTING SERVICES: PIM PROGRAM COORDINATORS (TEAM LEADER) (7) AND AGRI MARKETING MANAGERS (7) - PACKAGE – CS 5.

1. Objective(s) of the Assignment

Three teams of consulting services will facilitate and guide formation, mobilization and institutional strengthening of the PPs in the respective subprojects/irrigation system, and to monitor the task of:

- Planning, implementing and monitoring of PP organisational strengthening activities of the subprojects,
- Planning, implementing and monitoring rehabilitation and O&M of minor and subminor canals of the subprojects,
- Planning, implementing and monitoring construction and O&M of CAD works and on farm water management, including equitable water distribution and progressive transfer of these facilities for operation and maintenance to PP,
- Planning, implementing and monitoring of agriculture, associated post-harvest operations (such as marketing and processing) and livelihood enhancement of the users, and
- Increasing participation of women and economically vulnerable sectors of the community.

The three PP Strengthening consulting packages are as follows:

- i. Consulting Services Package CS-5: PIM Program Coordinators (Team Leader) (7) and Agri Marketing Managers (7) will be recruited as individuals using ADB's Individual Consultant Selection Method.
- ii. **Consulting Services Package CS-6 (Technical Services)**: technical support consultants (75 persons) will be recruited as a firm using ADB's Quality-Based Selection method. The consultants include:
 - a. Seventeen teams of four specialists each, comprising a (i) Participatory Irrigation Management (PIM) Specialist, (ii) Agriculture Extension Specialist, (iii) Agriculture Marketing Specialist, and (iv) Water Management and Command Area Development (WM&CAD) Specialist)
 - b. One Monitoring and Evaluation (M&E) Manager for each subproject, to assist the SIOs and PIM Coordinator/Team Leader working in that subproject in managing the database and flow of information of subproject activities.

Together the CS-6 (Technical Services) consultants will be called Support Services Teams (SST). Each SST will be allocated about 10 PPs. SST specialists will be based (live) within the assigned cluster. The number of SSTs assigned to an SIO will depend on the number of PPs in that subproject. All these specialists will work with PPs and farmers (as extension workers).

iii. Consulting Services Package – CS-9: An accounting support agency will be recruited as a firm using ADB's Consultants' Qualification Selection method to provide accounting support to the PPs in each SIO. One Accounts Trainer cum Auditor will be provided at each SIO level to provide accounts and bookkeeping training and handholding. The Accounts trainer will also assist PPs in auditing their account annually.

PP-level Community Organizers (CO) and community resources persons (CRP) will also be engaged as community manpower. They will be recruited directly by SIOs (with recommendations by PPs). The number / density of COs would depend on the number of beneficiaries per PP, status of PPs and logistical considerations. It is tentatively planned that one CO would cover two PPs and two CRPs would cover 1 PP for a period of two to three years.

2. Expected Outputs of the PP Strengthening Consultants

The PIM Program Coordinator/Team Leader and Agri-Marketing Manager will be responsible to train and oversee the work of the Package CS-6 (Technical Services) Specialists, COs and CRPs. The expected outputs of all PP strengthening consultants are:

- Effective mobilization of all PP members to participate in the activities of the PP,
- Effective participation of the PPs in planning, implementation and monitoring of subprojects and associated infrastructure,
- Functional PPs that are able to: a) manage and execute O&M of PP command (minor/sub minor) of irrigation system, b) manage water effectively, and c) plan and support agricultural production¹⁰,
- Train farmers to make them capable of managing water and agricultural production to obtain high yields, able to grow rabi and diversified crops,
- Train them for Increased incomes and living standards, and
- Increased participation of women and weaker sections of the community.

3. Implementation Arrangements for PP Strengthening Consultants

In each subproject there will be one PIM Program Coordinator, one Agri Marketing Manager and SSTs from Package CS-6 (Technical Services), the number of which depends on the number of PPs in the subproject. In each subproject, the PIM Program Co-ordinator will be the Team leader of the Agri-Marketing Manager, and SSTs assigned to that subproject, including the M&E Manager. (Refer the Organogram provided at Appendix 1). The Package CS-6 consultants are expected to be mobilized in November 2015.

¹⁰ Planning, organizing collective action, providing required services and implementing PP-level Irrigated Agriculture Programme (including water management and O&M) would be the prime responsibility of PPs. In addition PPs are expected to support other relevant livelihood activities.

DOWR's Pani Panchayat Support unit (PPSU) of the CAD-PIM Directorate will be primarily responsible for technical supervision and assessing the performance of the PP Strengthening consultants, including the day-to-day work of PIM Program Coordinator (Team Leader) and Agri Marketing Manager. The project's Institutional Strengthening and Project Management (ISPM) consultants working in the Project Management Unit (PMU) will provide necessary technical assistance to PPSU, SIOs, and the PP Strengthening consultants from time to time. PPSU staff with support of ISPM consultants will conduct an orientation workshop to provide them with a clear understanding of the project, its objectives and components and their specific roles. This orientation workshop will educate them on detailed methodologies of (i) participatory planning at PP level, (ii) plan implementation by the PPs, including CAD work by PPs, division of irrigation O&M responsibilities between DOWR and PPs, and (iii) PP Organizational Development including the role and functions of sub committees, conflict management, and monitoring and evaluation.

CAD-PIM Staff and PIM Specialist/ Advisers of ISPM consultants will act as "Mentors", provide technical advice. PPSU will supervise the work of SSTs and the COs and conduct performance assessment of SSTs, COs and CRPs as well as the process, inputs and outputs of the Consultant's staff. ISPM Consultants will provide technical support. For administrative purposes, the PIM Program Coordinator attached to each SIO will report directly to SIO Manager. All other consulting services staff, including the Agri-Marketing Manager, SST Specialists, COs and CRPs will report to PIM Program Coordinator. The PIM Program Coordinator will coordinate the SST work.

The performance of PP Strengthening consultants will be regularly monitored by PPSU (in collaboration with SIO). Monthly and quarterly evaluations will be conducted in the first year of engagement and semi-annually thereafter. Evaluation will be against the set performance targets and capacity strengthening programs. The SIO Manager with PP Strengthening staff and consulting services should establish good linkage with line department heads and field staff to ensure proper implementation and joint monitoring of field activities.

4. Specific Terms of Reference of the PIM Program Coordinator (Team Leader)

Qualifications and Experience: The PIM program Coordinator will have post graduation in social sciences or agriculture or engineering and will have 5 years of experience in working directly with PPs on participatory irrigation/water resources, watershed development & management projects. Work experience in Orissa projects and proficiency in the local Oriya language is a must. The consultants will have experience of using appropriate computer software/programs.

Detailed Tasks. Each PIM Program Coordinator will work under the guidance of the PPSU/ PIM Specialist of the ISPM Consultants in establishing systems for promoting participatory irrigation management and command area development and monitoring the process. S/he will:

- Work closely with SIO Manager under the guidance of CAD-PIM Directorate and provide guidance to the SSTs- COs in PP strengthening in PIM and Participatory CAD.
- Assist in implementing action plans for strengthening PIM and CAD institutions in the SIO and field levels

- Guide & assist the SSTs in the subproject implementation offices (SIOs) in implementing the step by step activities of the subproject development cycle
- Assist the SIO SSTs in operationalise the Project methods, procedures, and systems for strengthening the PPs developed under the project.
- Guide & assist the Support Services Teams in working with the PPs ensuring appropriate support to the PPs
- Assist in monitoring and promote capacity development process of consulting services staff in SIOs and support service teams for undertaking the assigned tasks, with effective performance monitoring systems
- Work with the PMU and CAD-PIM Cells to help prepare annual and mid-term project reports, progress reports as well as any other activities that are needed to ensure successful implementation of the Project
- Guide and plan with Agri Marketing manager on planning and implementing agri input and output marketing of the subproject area PPs.
- Collect information and maintain information flow and database with assistance of M&E Manager and report to PMU and CADPIM Directorate
- Guide and assist in preparation of monthly, quarterly and other reports of SIO and SSTs
- Evaluate requests for grant funds from PPs for Agricultural Support Services, including related assets/equipment
- Ensure that the SSTs have sufficient and appropriate training (pre-service and inservice) to undertake their responsibilities.

5. Specific Terms of Reference of the Agri-Marketing Manager

Qualifications and Experience: Masters Degree in a field related to the expected duty (e.g. Agricultural Marketing/ Business, Enterprise development, Commerce, Agri-Business Management) with specialized training and preferably 3 years post-qualification experience in linking farmers/farmer organizations with input and output markets. Emphasis is on diversified crops and value-addition. Experience and knowledge on rural agriculture is essential. Preference is for professionals with diverse experience in agricultural marketing in the rural sector. The Agri-Marketing manager will assist the PIM Program Coordinator on planning and implementing agricultural input and output marketing of the subproject area PPs.

Detailed Tasks: The major responsibility of Agri-Marketing Manager is to link PPs and farmers with input and output markets in agriculture, both within and outside project areas. Focus would be profitable diversified cropping in the Rabi season. Specialists should provide arrangement of *inputs to Agriculture Specialists in selecting crops based on demand for outputs and linking PPs with private sector / markets(both Government & Cooperative), including the arranging of forward contracts.* The Agri-Marketing Manager is not just an "advisor;" she/he should be capable of facilitating/ linking organized farmer groups, such as PPs and higher level WUAs with organized markets, preferably through contractual agreements. The Agri-Marketing Manager should aim at developing an "entrepreneurial culture" within WUAs.

Agri-Marketing Manager will be required to ensure collection and dissemination of information on agricultural markets for relevant crops, information on products, markets and services, such as banking and credit facilities and processing facilities available in the area and outside. Access to up-to-date market information is critical for PPs.

She/he in consultation with SST Agriculture specialists (Extension and specifically with Agri marketing) will assist in crop diversification or specialization depending on the circumstances, coordination of seasonal schedules, economizing on irrigation water, enhancing crop protection and be responsible for making PPs' agricultural marketing more efficient and profitable.

She/he is expected to establish and develop contacts for PPs with lending institutions and assist them to obtain loans for their cropping ventures; assist PPs and other Specialists in preparing proposals for new production, marketing and basic processing ventures; assist in analyses and evaluation of financial viability of these proposals; appraise credit investment proposals; assist in promoting investments within the area; assist in developing a monitoring programme for crop enterprises and agricultural input-output business opportunities developed for PPs and assist in planning and implementation of training programs; assist in analyses of constraints.

6. Reporting Requirements

Inception Report: The Consultants (PIM Program Coordinator cum Team Leader and Agri-Marketing Manager) will provide an **Inception Report** for the team within four weeks of mobilisation of the full PP Strengthening consultants (SST and COs). In consultation with PPSU staff and ISPM Consultants, SIO and PMU, the Consultants will conduct participatory workshops with SSTs and COs to develop/refine the final **Action Plan(s)**. The draft deliverable list in Appendix 2 may serve as a basis for preparing the action plan(s).

Progress Reports. After the inception report is finalized, the consultants will provide **monthly progress reports and** quarterly review reports should be submitted to the PMU through SIO manager with copy to PPSU and the national PIM Adviser of ISPMC (electronically by email). The quarterly review reports should include:

- (i) Detailed progress in relation to: a) scope of work stated in the TOR, and b) activity plans developed by the Consultants and PP Strengthening staff and agreed by the PMU,
- (ii) Financial progress against the targets,
- (iii) Issues affecting project implementation and their corrective measures, and
- (iv) Other agreed upon monitoring parameters.

The Consultants should report the **progress using the indicators agreed upon at the inception**. It should be noted that the **accounts and related financial statements will be audited** periodically in accordance with sound auditing standards by independent auditors acceptable to DoWR and ADB. Also, ADB may audit accounts during review missions.

V. PP STRENGTHENING CONSULTING SERVICES: technical support consultants (75 persons)- Package – CS 6.

1. Objective(s) of the Assignment

Three teams of consulting services will facilitate and guide formation, mobilization and institutional strengthening of the PPs in the respective subprojects/irrigation system, and to monitor the task of:

- Planning, implementing and monitoring of PP organisational strengthening activities of the subprojects,
- Planning, implementing and monitoring rehabilitation and O&M of minor and subminor canals of the subprojects,
- Planning, implementing and monitoring construction and O&M of CAD works and on farm water management, including equitable water distribution and progressive transfer of these facilities for operation and maintenance to PP,
- Planning, implementing and monitoring of agriculture, associated post-harvest operations (such as marketing and processing) and livelihood enhancement of the users, and
- Increasing participation of women and economically vulnerable sectors of the community.

The three PP Strengthening consulting packages are as follows:

- (v) Consulting Services Package CS-5: PIM Program Coordinators (Team Leader) (7) and Agri Marketing Managers (7) will be recruited as individuals using ADB's Individual Consultant Selection Method.
- (vi) Consulting Services Package CS-6 (Technical Services): technical support consultants (75 persons) will be recruited as a firm using ADB's Quality-Based Selection method. The consultants include:
 - a. Seventeen teams of four specialists each, comprising a (i) Participatory Irrigation Management (PIM) Specialist, (ii) Agriculture Extension Specialist, (iii) Agriculture Marketing Specialist, and (iv) Water Management and Command Area Development (WM&CAD) Specialist)
 - b. One Monitoring and Evaluation (M&E) Manager for each subproject, to assist the SIOs and PIM Coordinator/Team Leader working in that subproject in managing the database and flow of information of subproject activities.

Together the CS-6 (Technical Services) consultants will be called Support Services Teams (SST). Each SST will be allocated about 10 PPs. SST specialists will be based (live) within the assigned cluster. The number of SSTs assigned to an SIO will depend on the number of PPs in that subproject. All these specialists will work with PPs and farmers (as extension workers).

(vii) Consulting Services Package – CS-9: An accounting support agency will be recruited as a firm using ADB's Consultants' Qualification Selection method to provide accounting support to the PPs in each SIO. One Accounts Trainer cum Auditor will be provided at each SIO level to provide accounts and bookkeeping training and handholding. The Accounts trainer will also assist PPs in auditing their account annually.

PP-level Community Organizers (CO) and community resources persons (CRP) will also be engaged as community manpower. They will be recruited directly by SIOs (with recommendations by PPs). The number / density of COs would depend on the number of beneficiaries per PP, status of PPs and logistical considerations. It is tentatively planned that one CO would cover two PPs and two CRPs would cover 1 PP for a period of two to three years.

2. Expected Outputs of the PP Strengthening Consultants

The Consulting firm will provide the support services team (Technical Services) specialists (Package CS-6) Specialists to SIOs. These specialists will be trained, led and supported by the PIM Program Coordinator/Team Leader and Agri-Marketing Manager, who will be responsible to oversee the work of these Specialists, COs and CRPs. The expected outputs of all PP strengthening consultants are:

- Effective mobilization of all PP members to participate in the activities of the PP,
- Effective participation of the PPs in planning, implementation and monitoring of subprojects and associated infrastructure,
- Functional PPs that are able to: a) manage and execute O&M of PP command (minor/sub minor) of irrigation system, b) manage water effectively, and c) plan and support agricultural production¹¹,
- Train farmers to make them capable of managing water and agricultural production to obtain high yields, able to grow rabi and diversified crops,
- Train them for Increased incomes and living standards, and
- Increased participation of women and weaker sections of the community.

3. Implementation Arrangements for PP Strengthening Consultants

In each subproject there will be one PIM Program Coordinator, one Agri Marketing Manager and SSTs from Package CS-6 (Technical Services), the number of which depends on the number of PPs in the subproject. In each subproject, the PIM Program Co-ordinator will be the Team leader of the Agri-Marketing Manager, and SSTs assigned to that subproject, including the M&E Manager. (Refer the Organogram provided at Appendix 1). The Package CS-6 consultants are expected to be mobilized in November 2015.

DOWR's Pani Panchayat Support unit (PPSU) of the CAD-PIM Directorate will be primarily responsible for technical supervision and assessing the performance of the PP Strengthening consultants, including the day-to-day work of PIM Program Coordinator (Team Leader) and Agri Marketing Manager. The project's Institutional Strengthening and Project Management (ISPM) consultants working in the Project Management Unit (PMU) will provide necessary technical assistance to PPSU, SIOs, and the PP Strengthening consultants from time to time. PPSU staff with support of ISPM consultants will conduct an orientation workshop to provide them with a clear understanding of the project, its objectives and components and their specific roles. This orientation workshop will educate them on detailed methodologies of (i) participatory planning at PP level, (ii) plan implementation by the PPs, including CAD work by PPs, division of irrigation O&M responsibilities between DOWR and PPs, and (iii) PP Organizational Development including the role and functions of sub committees, conflict management, and monitoring and evaluation.

CAD-PIM Staff and PIM Specialist/ Advisers of ISPM consultants will act as "Mentors", provide technical advice. PPSU will supervise the work of SSTs and the COs and conduct performance assessment of SSTs, COs and CRPs as well as the process, inputs and outputs of

¹¹ Planning, organizing collective action, providing required services and implementing PP-level Irrigated Agriculture Programme (including water management and O&M) would be the prime responsibility of PPs. In addition PPs are expected to support other relevant livelihood activities.

the Consultant's staff. ISPM Consultants will provide technical support. For administrative purposes, the PIM Program Coordinator attached to each SIO will report directly to SIO Manager. All other consulting services staff, including the Agri-Marketing Manager, SST Specialists, COs and CRPs will report to PIM Program Coordinator. The PIM Program Coordinator will coordinate the SST work.

The performance of PP Strengthening consultants will be regularly monitored by PPSU (in collaboration with SIO). Monthly and quarterly evaluations will be conducted in the first year of engagement and semi-annually thereafter. Evaluation will be against the set performance targets and capacity strengthening programs. The SIO Manager with PP Strengthening staff and consulting services should establish good linkage with line department heads and field staff to ensure proper implementation and joint monitoring of field activities.

There will be one SIO for each of the irrigation system (subproject) and as indicated earlier, the Consulting services will be requested to provide following staff for the four major and three medium SIOs, Seventeen groups of SSTs consisting of : (i) Seventeen SST Coordinators (PIM Specialist), (ii) seventeen additional PIM Specialists, (iii) seventeen Agriculture Extension Specialists with expertise in on-farm water management (OFWM) and diversified cropping and water management and (iv) seventeen agricultural marketing organisers, and (v) seventeen Command Area Development Specialist, Consulting firm is expected to provide Group inputs from about early November 2015. The staffing schedule is given in Table-1, shown below. CAD-PIM Staff and PIM Specialist/ Advisers of ISPMCs will act as "Mentors", provide technical advice. PPSU will supervise the work of PIM Program Coordinator, Agri marketing Manager, SSTs and the COs and conduct performance assessment PIM Program Coordinator, Agri marketing Manager, SSTs and COs as well as the process, inputs and outputs of the Consultant's staff. ISPMC will provide technical support to PPSU/Consulting services. For administrative purposes all the Specialists will be responsible to the Deputy Subproject Manager and their activities will be coordinated by the SST Coordinator. The SST Coordinator will:

- Report to PIM Program manager for the SST work
- Be responsible for administration
- Provide coordinating support
- Channel funds and other assistance to Support Services Team from PMU
- Evaluate requests for grant funds from PPs for Agricultural Support Services, including related assets/equipment12
- Ensure that the Support Services Team have sufficient and appropriate training (preservice and in-service) to undertake their responsibilities.
- Resolve issues that Support Services Team Members might have with either the Consulting firm for which they are working or with the SIO management.
- Ensure that the relevant experience of the Consulting firm is transmitted to the Support Services Team to enable them to effectively carry out their assignments.
- Consultant's staff will work as collaborators and be responsible for the outcomes.

¹² Maximum allocation would be Rs. 600 per ha, of which 20% will be channeled through consulting services after approval of Micro Plans. Funds could be utilized only for common goods benefiting the PP membership at large and not few selected individual members.

Table -1 Staffing Schedule for PP Strengthening Services (169 PPs,)

"STRENGTHENING OF PANI PANCHAYATS" in 4 Major and 3 Medium Irrigation Subprojects

	Unit	Sub Projects								Remarks
		Machhagaon	Pattamundai	HLC R 1	MCII	Kanjhari	Ramial	Kansbahal	All Sub projects	
Command Area under Tr 2 PPS	ha	15000	15000	14700	13260	9300	9600	4610	81470	
DoWR Divisions	No	1	2	2	2	1	1	1	10	
Total Pani Panchayats	No	77	59	32	31	22	15	9	245	
Pani Panchayts to be taken in Tr 2	No	30	30	32	31	22	15	9	169	
SSTs	No	3	3	3	3	2	2	1	17	1 SST for 10 PPs
COs	No	15	15	16	16	11	8	5	86	1 CO for 2 PPs
Community Resources Person (CRPs)	No	60	60	64	62	44	30	18	338	2 CRPs for 1 PP
Implementation Period	Year	3	3	3	3	3	3	3	3	
Machhagaon - Jagatsinghpur Division		Kanjhari - Baitarani Division								
Pattamundai - Mohanadi North Division + Kendrapada	Division	Ramial - Angul Division								
HLC R 1 - Mohanadi North Division + Jaraka Division		Kansbahal - Sundargarh Division								
MCII - Mohanadi Barage Division + MCII Divn										



- i. Facilitate and assist (including the provision of technical assistance) PP-level planning
- ii. Develop PP Organizational Structure, including the formation of sub committees of elected PPs,
- iii. Developing the capacity of PPs,
- iv. Facilitate and assist the implementation of the Plan by the PP and farmers
- v. Mobilizing PPs and farmers for their active and decisive involvement in the participatory Rehabilitation, Extension and Upgrading (ERM) process. This includes the Command Area Development (CAD) work by PPs themselves with technical assistance and part funding by OIIAWMIP
- vi. Strengthen PPs and higher-level Farmers' Organizations' capacity in post ERM Operation and Maintenance (O&M) of Irrigation and matching irrigation with profitable cropping patterns and agricultural practices, agri-business and related services.

This step-by-step implementation / development approach is illustrated in Figure-1 and the following sections outline the activities in different steps of the process.



Notes on overlapping mechanism:

- i. Phases 1 and 2: Selective construction work, where PP active participation is not essential, may begin before the end of Phase-1. Also, Phase-1 activities like strengthening PPs and agriculture and livelihood aspects of detailed planning could be continued in the first month of Phase-1.
- ii. Phases 2 and 3: Some interventions like participatory variety selection, IPM, fertilizer management, livelihood interventions etc could begin before the completion of ERM.
- iii. Phases 3 and 4: Gradual withdrawal of SSTs and other Project support to PPs would begin before the end of Phase 4. Project-led interventions could continue in Phase-4 with limited support staff.

ERM – Extension, Rehabilitation and Modernization; SST – Support Service Team, PC – Planning Committee, CO-Community Organizer; CAD – Command Area Development, M&E – Monitoring and Evaluation; CC – Chak Committee

¹³

This may vary from about 2.5 to 4.0 years, depending on many factors. Hence, what is presented could be regarded as the "average" for planning/budgeting/staffing purposes. This may be shorter in Minor (lift) systems.

4.a. Staff Inputs Required during the Subproject Cycle for SSTs

In general, for the major and medium projects each Support Services Team, SST, will cover about 4,500 ha (approximately 10 PPs, assuming an average of about 450 ha per PP). It should be noted, however, that the exact number of PPs per SST may need to be adjusted depending on the specific conditions of the selected subproject. For example, the extent covered by PPs could vary from about 200 to 600ha across subprojects and even within subprojects. Moreover, other factors such as the number of villages and farm families covered by PPs and the distance between villages within PPs could also vary significantly. Therefore, the number of PPs assigned to a particular SST as well as the number of Community Organizers (COs) per SST would vary across subprojects (irrigation systems) and also within subprojects.

As process of Subproject Cycle, it is expected that the majority of the members of the Support Services Team employed by the Consulting firm will work with a specific PP for two years while few members of the team (and COs) will move on to a new PP cluster (see the withdrawal process in Phase 4 as illustrated in Figure 1 at the end of this section). For example, on the average, within a 3-year (full) Subproject Cycle, a CAD/Water Management Specialist would complete her/his work in about 24 months and the Agriculture Specialists will also withdraw little earlier than the PIM Specialists. The density of PIM Specialists is higher than that of other Specialists. Considering the present status of PPs, more intensive and frequent inputs of PIM Specialists and Agriculture Specialists are proposed. Technical inputs of agriculture and water management would be required more during PP micro planning stage. However, intensive agriculture and associated water management interventions (including participatory Command Area Development, CAD work) are being initiated. It is a multi-disciplinary effort and the three Specialists must work as a team for most of the time. It is assumed that the services of the Water Management and CAD Specialist would be required especially for CAD planning and implementation stage. Towards the end of CAD implementation (that is after about 12 months of mobilization in a 3 year cycle) the inputs of Water Management/CAD Specialist could be reduced to periodic visits to PP areas for guiding PPs and farmers on the monitoring and implementation of planned irrigation schedules and O&M activities. Agriculture expertise may be required more during the crop production phase. Staff input schedule in Table 1 is based on these demands. It is also intended that the SST and the COs will identify and train 1-2 local facilitators, who may work as "Volunteers/ community resources persons" or paid by the SIO/ PP assuming that the PP has developed its capacity within the initial year.

4.b. SST and PP-level COs Withdrawal Plan

The Consulting services should have "withdrawal" plan. In the OIIAWMIP PP strengthening strategy is planned to phase out PP mobilization inputs gradually (final phase in Figure 1). For example, in any selected irrigation system, for about 24 months (completing the first two phases and part of phase 3 in Figure 1), the experienced CO will live in the village and work with farmers and PP. By the end of this period, s/he could identify 1-2 capable and committed youths from within the villages/PP/Chak areas and train them (mainly through an experienced CO could leave the community and the trained youths/volunteers will take over the role of Change Agent/ Catalyst. If the PP has matured and converted into a business organization in true sense, the PPs may "absorb" the experienced PP-level CO as it would be profitable to the organization and its membership. Alternatively, the Consultant, PPSU, and the ISPM Consultants may use the experienced COs in new sets of irrigation systems / subprojects of the Project.

4.c. Team Composition & Qualification Requirements for the Key Experts:

The key personnel's performance and new personnel's CVs will be regularly evaluated by the PPSU staff and ISPM Consultants and the approval of the Executing Agency (based on performance assessment). This is mandatory for employing and maintaining ALL categories of consultant staff at ALL levels and ALL stages of the project/subproject cycle.

Consultant's technical proposal should propose the SST Coordinator and other SST specialists as well as M&E Manager (CVs) and a work plan. At least 20 percent of staff should be women and higher percentage would be encouraged. But what is more vitally important is to give gender equity training to all the staff [what gender equity means, why it is important, strategies to mobilize women, tools to do so, monitoring methods, but with the need to stay focused on the project objectives for the general PP membership].Table-1 provides approximate numbers and timing of staffing for a typical 3-year Subproject Cycle.

4.d. Replacement of Staff

Consulting services should undertake the responsibility of replacing staff, if they leave the jobs for some reason or if the Consultant is requested to replace staff by the Project due to unsatisfactory performance. Project will undertake evaluations and Consultant should take prompt action, including changing/replacing staff.

4.e. Scheduling Staff Inputs

As mentioned earlier, an indicative plan of consultant's personnel inputs, including the quantity (numbers) and timing of the required staff (COs, SST and SIO) are given in Table 1. In OIIAWMIP Irrigation Systems, the exact number and timing of mobilizing these professionals will depend on the actual demand. This would depend on several factors including: the number and size of irrigation systems selected within the PP cluster, location of systems, road network, strength of PPs, time taken for ERM work, farmers/PPs capacity in CAD work, status of agriculture and farmers response to interventions etc. The Consultant should be capable of mobilizing field staff, especially COs, as and when necessary.

5. Specific Terms of Reference of Consulting services Staff

5.1. SST Coordinator and PIM Specialist

SST Coordinator will be technically supervised by the PIM Program Coordinator, PPSU staff and ISPMCs and coordinate all the consultants activities within the assigned SIO area. SST Coordinator will guide and manage the consultant Staff and undertake monitoring and reporting as well. SST Coordinator will work collaboratively with other Specialists of consultant staff as well as with ISPMCs and others at SIO. Under the direct supervision of PIM Program Coordinator and PPSU/ISPMC, she/he will be responsible for "monitoring and driving" the SSTs (Specialists), COs, CRPs and other stakeholders to achieve the OIIAWMIP goals at PP level.

Qualifications and Experience for PIM Specialist: Candidates holding MSW/MA Social Science preferred; however, candidates possessing post-graduate qualifications in Agriculture or Engineering with 3 years experience in PIM and/or community mobilization would be considered. Candidates should have preferably 3 years of practical (field) experience in supervising Community Organizers. Candidates with Bachelor's Degree plus 4 years experience or holding a diploma and preferably 5 years of experience may also be considered.

SST Coordinator (also a PIM Specialist) should have a Masters Degree and preferably 3 years experience in forming water user association (WUA) and/or other similar beneficiary organizations in terms of awareness and member enrolment, establishment of organizational setup and leadership, operations of the set functions, resource mobilization, and networking. She/he should also have adequate and relevant experience as a leader/coordinator of multi-disciplinary teams (with evidence). Preferably 3 years of relevant experience as well as a proven track record are necessary.

Specific Duties and Responsibilities: The SST Coordinator will undertake the responsibility to perform following specific duties:

- Coordinate the consultant's work within the assigned SIO. Guide and monitor the work of SIO Consultant staff, report the progress to Head SIO on a monthly basis. Provide (overall) administration and financial supervision of Consultant activity;
- (ii) Provide technical assistance and guide the work of PIM Specialists of the SSTs;
- (iii) Work with SIO Specialists, COs and PPs to enhance PIM, complete participatory CAD Work successfully and integrate agriculture support services into PP based Post-ERM development process of OIIAWMIP systems, with special emphasis on efficient water management by PPs, enhanced kharif
- (iv) Production and diversified rabi cropping. Towards this end, the Coordinator will be responsible for the following tasks;
- (v) Ensure; (a) the (technical) quality and feasibility of PP plans, especially the CAD work, Irrigation O&M and Water Management and Agricultural Development plans (including agri-business and marketing), and (b) Plan implementation;
- (vi) Coordinate and facilitate the implementation of the OIIAWMIP CAD work, PIM and Agriculture Strategy (including agri-business and marketing) and Plans;
- (vii) Arrange/organize, follow-up, monitor and report the progress of:
- (viii) Inputs of other stakeholders like the DA to PP strengthening / empowering including day-to-day support for PP plan implementation.
- (ix) Liaise and lead dialogue with DOWR, DOA, higher level Farmers' Organizations (like Distributaries and Project level FOs), other relevant Government and Non-Government agencies, private sector and others to coordinate relevant inputs/services.
- (x) Assist and guide the capacity building of PPs and plan and organize special on-thejob capacity building programs for COs and SST.
- (xi) Undertake any other relevant activity assigned by the ISPMCs' PIM Advisers or the Head, SIO.

5.2. Other PIM Specialists

Specific Duties and responsibilities: Each of the PIM Specialists will **report directly to the SIO Coordinator** and work under close supervision of TA PIM Specialists and the PIM Program coordinator. She/he will undertake the responsibility of "mentoring and driving" the COs on a **day-to-day basis** to achieve the PIM, Agriculture and Irrigation O&M and water management, including CAD goals. She/he will be based in the assigned cluster of PPs within the irrigation scheme and spend over two thirds of time in working with COs and PPs/farmers.

The major roles and functions of other PIM Specialists include:

- i. **Guide COs** in social mobilization, changing the "mindset" of stakeholders and institutional development, especially PP strengthening.
- ii. Ensure a) the quality and feasibility of PP plans, especially the CAD, Irrigation O&M and Water Management and Agricultural Development plans, and b) Plan implementation.

- iii. Under the guidance of the ISPMC Consultants and the SST Coordinator, coordinate and facilitate the implementation of the OIIAWMIP PIM and Agriculture Strategy and Plans.
- iv. Arrange/organize services such as:
 - a) DOWR and other inputs (like DA) to PPs strengthening / empowering PPs including day-to-day support for PP plan implementation. Liaise and lead dialogue with DOWR, DA, higher level Farmers' Organizations (like Distributaries and Irrigation System-level FOs), other relevant Government and Non-Government agencies, private sector and others to coordinate relevant inputs/services,
 - b) Special on-the-job capacity building programmes for COs (in addition to the major role as a "mentor"),
- v. Monitor and Evaluate, M&E, of PPs with special emphasis on PIM and Agriculture, including water management, and
- vi. Assist in Information, Education and Awareness Building (IEA) Activities, as directed by the TA and Coordinator.
- vii. Assist Marketing Specialist (by organizing PPs/FOs) to establish appropriate business linkages between the PPs/FOs and the organized input and output Markets, Private Sector, Banks and other appropriate lending institutions.
- viii. Provide (overall) administration and financial supervision of Consultant activity (including timely reporting). Report on expenditures, activities, progress and issues to SST Coordinator.
- ix. Undertake other task assigned by the Coordinator or TA Team through the Coordinator.

5.3. Agricultural Extension Specialist

Qualifications and Experience: Post-graduate education in agriculture. Preferably 2 years of relevant experience as an extension worker. (OR a relevant Bachelor's Degree with preferably 5 years experience OR Agriculture Diploma plus 7 years of extension field experience).

Specific Field Experience: Preferably 2 years field experience (for Master's Degree holders OR 3 years for Bachelor's and 5 for Diploma holders) in (i) irrigated agriculture (extension) in related to the adoption of agricultural technology. and (b) "on-farm water management"; (ii) training and working with farmers in developing and implementing cropping and irrigation schedules. Plus experience in training of farmers and other trainers. Preference will be given to those who have expertise in (i) working with farmers in irrigated rabi (diversified cropping), (ii) Conducting Farmers Field Schools (FFS), and (iii) PIM and working with PPs.

Detailed Tasks will include the following:

- (i) Report directly to Head, SIO. Cooperate with SST Coordinator in providing guidance and assisting the SSTs and PP-level Facilitators/COs.
- (ii) Provide Technical Assistance and guide and monitor the agriculture activities of PPs through the COs, report the progress to Coordinator and Head SIO on a monthly basis;
- (iii) Work collaboratively with the PIM and other Experts and in assessing the present status, potential and constraints related to agriculture (during Participatory Detailed Design process) and provide technical guidance and assist the development of Agriculture Plans by PPs;
- (iv) Based on (iii), guide COs in assisting and facilitating PPs in the implementation of Detailed Agriculture Plan of respective PPs;

- (v) Guide and assist in developing PP (and higher-level FOs,) capacity in relation to improved agriculture including water management, agri-business and marketing;
- (vi) Assist and enhance the capacity of Community Organizers and PPs in implementing and monitoring above plans;
- (vii) Undertake any other relevant tasks assigned by SIO.

5.4. Agricultural Marketing/Business Specialist

Qualifications and Experience: Masters Degree in a field related to the expected duty (e.g. Agricultural Marketing, Enterprise development, Commerce, Business Management) preferably with specialized training and preferably 1 year post-qualification experience (OR a relevant Bachelor's Degree with preferably 2 years experience OR Agriculture Diploma plus 3 years of marketing experience) in linking farmers/farmer organizations with input and output markets. Emphasis is on diversified crops and value-addition. Experience and knowledge on rural agriculture is essential. Preference is for professionals with diverse experience in agricultural marketing in the rural sector

Detailed Tasks: The major responsibility of Marketing Specialist is to link PPs and farmers with input and output markets in agriculture, both within and outside project areas. Focus would be profitable diversified cropping in the Rabi season. Specialists should provide *inputs to Agriculture Specialists in selecting crops based on demand for outputs and linking PPs with private sector/markets, including the arranging of forward contracts.* (Important: Marketing Specialist is not just an "advisor", she/he should be capable of facilitating/ linking organized farmer groups, such as PPs and higher level WUAs with organized markets, preferably through contractual agreements). The Specialist should aim at developing an "entrepreneurial culture" within WUAs.

Marketing Specialist will be required to ensure collection and dissemination of information on agricultural markets for relevant crops, information on products, markets and services, such as banking and credit facilities and processing facilities available in the area and outside. Access to up-to-date market information is critical for PPs.

She/he will assist in crop diversification or specialization depending on the circumstances, coordination of seasonal schedules, economizing on irrigation water, enhancing crop protection and be responsible for making PPs' agricultural marketing more efficient and profitable.

She/he is expected to establish and develop contacts for PPs with lending institutions and assist them to obtain loans for their cropping ventures; assist PPs and other Specialists in preparing proposals for new production, marketing and basic processing ventures; assist in analyses and evaluation of financial viability of these proposals; appraise credit investment proposals; assist in promoting investments within the area; assist in developing a monitoring programme for crop enterprises and agricultural input-output business opportunities developed for PPs and assist in planning and implementation of training programs; assist in analyses of constraints.

Marketing Specialist will always be accountable to the PPs and farmers. It is assumed that PPs would develop as business entities and employ Marketing staff in the future.

5.5. Command Area Development and Water Management Expert

Qualifications and Experience: Preferably Bachelor's Degree in Civil/Irrigation/ Agricultural Engineering and preferably 3 years of job-related field experience. Post-graduate education preferred. Diploma holders with preferably 5 years experience are also eligible to apply. Experience should be related to: (i) Command Area development (CAD) work (working with Farmers on CAD Work) and (ii) Irrigation O&M and water management with PPs. Preference will be given to those who have experience in On-Farm Water Management and training of farmers and trainers.

Specific tasks will include the following:

- Based on the technical guidelines for irrigation system water management and CAD Work prepared by the Component TA, work with PPs in developing Command Area Development and Water Management Plans;
- Work collaboratively with the PIM and Agriculture Experts of SST to: (a) Review, assess, and synthesize information to determine the technical potential for kharif cropping and diversified cropping in rabi, and (b) Review and assess the feasibility of matching irrigation management plans/scheduling for kharif and rabi cropping schedules;
- (iii) Based on (ii) above, work <u>collaboratively</u> with PIM and Agriculture Experts to assist PPs and farmers in selecting crops and cropping patterns as well as cultivation calendar matching with availability of water, and (c) help/collaborate with PPs/Farmers/DOWR to develop seasonal water management practices, including on-farm water management methods;
- (iv) Assist and enhance the capacity of PPs, farmers, Community Organizers and other stakeholders in implementing and monitoring above plans. Design and conduct capacity building focusing on "experiential method" ("learning by doing"). Ensure that the targets are achieved in time;
- (v) Assist PPs in CAD work from the participatory design stage through construction to O&M of CAD work. Provide technical assistance / train concerned persons in water course and field channel construction and other On-farm developments. Expert's assistance in CAD work includes, (a) liaison with CADA and DOWR, (b) linking PPs with CADA, DOWR and other relevant Government authorities/agencies and private service providers, (c) assist PP, especially its Works Committee in developing detailed activity plans, procurement of services, construction supervision/quality control;
- (vi) Conduct training for PPs on O&M;
- (vii) Support preparation and implementation of plans capacity building related to other relevant aspects such as: conjunctive use and managing water-logging and drainage problems in PP areas;
- (viii) Monitor and report the progress PP level CAD Work, water management plans and other aspects indicated above (conjunctive use, drainage etc);
- (ix) Develop and help internalize Self Monitoring and Evaluation of Irrigation O&M and water management by PPs;
- (x) Undertake any other relevant task assigned by the SIO.

5.6. Monitoring & Evaluation (M&E) Manager:

Qualifications and Experience: The M&E Manager will have an advanced educational training in subject related to computer applications (like MCA) and advanced qualifications for database development for M&E and at least 4 years experience in data base management. Prior experience with development of a MIS database for water resources projects is desired. The Specialist will have experience maintaining MIS systems using off-the-shelf computer software.
With support from PMU/ISPMC MIS Specialist collect, review and/or refine and maintain a Management Information System (MIS) database (and associated monitoring indicators) to provide outputs which shall be utilized to provide responsive support to the Project Management Unit (PMU)The Specialist will work closely with the PMU and ISPMC staff to undertake an assessment and capacity building activities for SIO and consulting services staff to ensure that their abilities are sufficient to implement the MIS. The M&E Manager will:

- Use existing software (such as Access) for development/maintenance of the database;
- Create and update MIS database at SIO level with support of PMU/ISPMC MIS Specialists on O&M, PIM, and/or providing the necessary information for focused quarterly and annual monitoring and evaluation reporting;
- Collect data from technical consultants and SIO staff to specify indicators and measures for tracking subproject progress;
- Assist in establishing a system to meet monitoring requirements for institutional development of PPs (institutional strengthening activities) and O&M performance monitoring;
- In conjunction with relevant specialist staff assist in collecting information on poverty and quantifying impacts on poverty reduction;
- Assist PIM Program Coordinator in recommendations for implementation and postimplementation monitoring of resettlement actions at appropriate subprojects;
- Assist on establishment of an M&E coordination cell within the SIO for the evaluation of MIS data as well as M&E reports;
- Assist SIO with development of an SIO webpage(s) within the existing DoWR website for public disclosure
- Provide technical support on shared access of MIS database to maximize utilization by partner line agencies and
- Assist in preparing monthly, Quarterly Progress and specific Impact Monitoring Reports.

6. Reporting Requirements

Inception Report: The Consultants (PIM Program Coordinator cum Team Leader and Agri-Marketing Manager) will provide an **Inception Report** for the team within four weeks of mobilisation of the full PP Strengthening consultants (SST and COs). In consultation with PPSU staff and ISPM Consultants, SIO and PMU, the Consultants will conduct participatory workshops with SSTs and COs to develop/refine the final **Action Plan(s)**. The draft deliverable list in Appendix 2 may serve as a basis for preparing the action plan(s).

Progress Reports. After the inception report is finalized, the consultants will provide **monthly progress reports and** quarterly review reports should be submitted to the PMU through SIO manager with copy to PPSU and the national PIM Adviser of ISPMC (electronically by email). The quarterly review reports should include:

- (viii) Detailed progress in relation to: a) scope of work stated in the TOR, and b) activity plans developed by the Consultants and PP Strengthening staff and agreed by the PMU,
- (ix) Financial progress against the targets,
- (x) Issues affecting project implementation and their corrective measures, and
- (xi) Other agreed upon monitoring parameters.

The Consultants should report the **progress using the indicators agreed upon at the inception**. It should be noted that the **accounts and related financial statements will be audited** periodically in accordance with sound auditing standards by independent auditors acceptable to DoWR and ADB. Also, ADB may audit accounts during review missions.

VI. THE CIVIL SOCIETY ORGANIZATION (CSO) - PACKAGE – CS 8.

A. Project description

1. The Orissa Integrated Irrigated Agriculture and Water Management Investment Program (OIIAWMIP), being funded by the Asian Development Bank (ADB) through sector lending approach over a span of eight years, aims to reduce rural poverty levels in the State by improving agriculture sector productivity and enhancing rural incomes.

2. The renovation work under the HLC Range 1, 0-10 km subproject involves strengthening and widening of the existing embankment of almost ______ kms as well as bank protection work and aims at addressing the key issues and challenges faced by the people of the region in terms of loss of life and property caused by the annual flooding. However, despite these anticipated benefits, the project would affect _____households living on and adjacent to the ______ main and distributary canal system covering ______ sub-divisions and _____ distributary, which needs to be strengthened under Tranche-2 of the Project. A detailed EES census survey was undertaken between ______ covering all the households getting affected in ______ canal system. Of the ______ affected households, ______ households/units comprise of absentee, who were not present at the time of the EES census survey.

B. Scope of work

3. In general, the SEMU will be responsible to the Executing Agency, for the effective, timely and efficient execution of the RP. The key tasks of the selected organization will be responsible for the following: -

(i) Information Campaign on Resettlement Entitlements

4. The agency will design, plan and implement an information campaign in the affected areas primarily to inform the APs about the entitlement policy and how to avail their respective entitlements. In particular, the agency will be responsible for undertaking a public information campaign at the project areas to inform the affected persons regarding:-

- The likely consequences of the project on the communities;
- The R&R policy and entitlements;
- Assist APs in getting the compensation for their properties acquired for the project;
- Ensure proper utilization by the APs of various grants available under the R&R package.

5. The agency will be responsible for advising the APs on how best to utilize any cash that may be provided under the RP, with emphasis placed on using such funds in sustainable way e.g. purchasing replacement land for that acquired.

6. The campaign would include measures such as distribution of information booklets, leaflets, notices and other materials among the APs, community meetings, public announcements, and any other measures necessary to provide information to all the APs.

(ii) Identification of APs and Issuance of Identity (ID) Cards

7. The agency will identify and verify APs, on the basis of the resettlement census survey carried out and will facilitate the distribution of ID cards.

8. This work will include identification of APs based on a census survey, preparation of ID cards, taking photograph of APs in the field, issuance of ID cards to APs and updating of ID cards, if required. An identity card would include a photograph of the AP, his/her socioeconomic profile and vulnerability, the nature and extent of loss suffered due to the project construction, and the choice AP with regard to the mode of compensation and assistance (if applies, as per the RP).

9. The agency shall prepare a list of APs, enlisting the losses and the entitlements as per the RP, after verification. During the identification and verification of the eligible APs, agency shall ensure that each of the APs are contacted and consulted either in groups or individually. The agency shall especially ensure consultation with vulnerable groups namely (a) those who are below the poverty line (BPL); (b) those who belong to scheduled castes (SC), scheduled tribes (ST); (c) female-headed households (FHH); (d) elderly and (e) disabled persons.

(iii) Updating of AP Database and Creation/Computerization of Database and AP Files

10. The agency will be responsible for updating and preparing a comprehensive computerised database containing the data structure, trees and other affected properties of the APs which will be used to prepare AP files and entitlements cards (EC). The database will contain information from land records and resettlement census data. The AP and EC files will be used for making payments of entitlements to the APs and monitoring the progress of resettlement work.

(iv) Participation in Grievance Redress

11. The agency will play a key role in assisting the APs in presenting their grievances or queries to the Grievance Redress Committee (GRC) which will be established at the SEIU level with the primary objective of providing a mechanism to mediate conflict and cut down on lengthy litigation.

(v) Income Restoration

12. The agency will also play a key role in providing income restoration assistance to the affected households losing their primary sources of livelihood/income as a result of the Project. The agency shall undertake consultations with the affected households on finalizing the skills training and also undertake a market feasibility survey to ascertain the feasibility of the skills being imparted to those affected. Based on the outputs of these, the CSO will plan out livelihood restoration activities as per it. Emphasis will be paid on the vulnerable groups such as female headed households, SC & ST households, poor etc.

13. In addition, the development agency would also be responsible for liaisoning with the various government departments, in order to create a linkup between the existing government schemes and the affected groups.

(vi) Relocation assistance

14. The agency shall facilitate the process of relocation of the affected households getting displaced as a result of the project as per/in keeping with the RP.

C. Time frame

15. The work is scheduled to start in {insert date} and will continue till {Insert date}. The agency should be fully prepared in terms of all logistics support to tackle and carry out the resettlement activities and tasks laid down above.

D. Selection criteria, Staffing, Implementation Plan

16. The CSO to be selected for the tasks must have proven experience in resettlement planning and implementation. Specifically, key quality criteria include:

- Experience in direct implementation of programs in local, similar and/or other states;
- Availability of trained staff capable of including APs into their programs;
- Competence, transparency and accountability based on neutral evaluations, internal reports, and audited accounts; and
- Integrity and experience to represent vulnerable groups against abuses and demonstrable mandate to represent local groups.
- Demonstrated experience in computerizing and managing resettlementrelated database,
- Experience in resettlement survey, planning, monitoring and evaluation.

17. The agency chosen will have to agree to the terms and conditions under the RP. The following staffing provision may be necessary for smooth and effective implementation of the RP within the time frame:

- Team Leader/ Livelihood Specialist
- Resettlement Implementation Worker

18. Interested agency should submit proposal for the work with a brief statement of the approach, methodology, and field plan to carry out the tasks. The proposal should include:

- (i) Relevant information concerning previous experience on resettlement implementation and preparation of reports.
- (ii) The proposal should also include samples of ID cards, information brochures, AP files etc. to be used during the implementation phase.
- (iii) The field plan must address training and mobilization of resettlement workers.

19. Full CVs of key personnel (the Team Leader/ Livelihood Specialist) must be submitted along with the proposal. The Team Leader must have degree in social science (preferably economics, sociology, anthropology, development studies and must have prior experience in resettlement operation and management.

20. The agency must be an established organization registered with the Government of India.

E. Budget

21. Three copies of the proposal - both technical and financial - should be submitted. The budget should include all expenses such as staff salary, training, computer/database, transport, field and any other logistics necessary for resettlement implementation. Additional expense claims whatsoever outside the budget will not be entertained.

VII. Terms of Reference for External Monitor – Package – CS 10

1.0 The Background

The Orissa Integrated Irrigated Agriculture and Water Management Investment Program (OIIAWMIP), being funded by the Asian Development Bank (ADB) through sector lending approach over a span of eight years, aims to reduce rural poverty levels in the State by improving agriculture sector productivity and enhancing rural incomes.

The renovation work under the HLC Range 1, 0-10 km subproject involves strengthening and widening of the existing embankment of almost ______ kms as well as bank protection work and aims at addressing the key issues and challenges faced by the people of the region in terms of loss of life and property caused by the annual flooding. However, despite these anticipated benefits, the project would affect _____households living on and adjacent to the ______ main and distributary canal system covering _____ sub-divisions and _____ distributary, which needs to be strengthened under Tranche-2 of the Project. A detailed EES census survey was undertaken between ______ canal system. Of the ______ affected households, _____ households/units comprise of absentee, who were not present at the time of the EES census survey.

For subprojects with significant involuntary resettlement impacts, the EA will engage qualified and experienced external experts or qualified NGOs to verify the monitoring information prepared by the safeguard unit of the EA. The external experts engaged by the EA will advise on safeguard compliance issues, and if any significant involuntary resettlement issues are identified, a corrective action plan will be prepared to address such issues. The EA will prepare semi-annual monitoring reports that describe the progress of the implementation of resettlement activities and any compliance issues and corrective actions. These reports will closely follow the involuntary resettlement monitoring indicators agreed at the time of resettlement plan approval.

2.0 Brief Scope of Work

Scope of Work – Generic

- (i) to review and verify the progress in resettlement implementation as outlined in the RP;
- (ii) to monitor the effectiveness and efficiency of PMU and DSC, in RP implementation;
- (iii) to assess whether resettlement objectives, particularly livelihoods and living standards of the displaced persons (DPs), have been restored or enhanced;
- (iv) to assess the implementation of RP, with particular attention on participation of vulnerable groups, namely (a) those who are below the poverty line (BPL); (b) those who belong to scheduled castes (SC) and scheduled tribes (ST); (c) female-headed families; (d) elderly; and (e) disabled persons;
- (v) to assess resettlement efficiency, effectiveness, impact, and sustainability, drawing both on policies and practices and to suggest any corrective measures, if necessary; and
- (vi) to review the project impacts on indigenous people, if any, and groups, and to assess the effectiveness of the mitigative actions taken.

Scope of Work – Specific

- (i) to develop specific monitoring indicators for undertaking monitoring for resettlement plan and indigenous people development plan;
- to review results of internal monitoring and verify claims through random checking at the field level to assess whether land acquisition/resettlement objectives have been generally met, and to involve the affected people and community groups in assessing the impact of land acquisition for monitoring and evaluation purposes;
- (iii) to identify the strengths and weaknesses of the land acquisition/resettlement objectives, approaches, and implementation strategies;
- (iv) to review and verify the progress in land acquisition/resettlement implementation of subproject on a sample basis, and to prepare biannual reports for the EA and ADB;
- to review and assess the adequacy of compensation given to the DPs, and the livelihood opportunities and incomes as well as the quality of life of DPs of project-induced changes; and
- (vi) to review and assess the adequacy and effectiveness of the consultative process with affected DPs, particularly those vulnerable, including the adequacy and effectiveness of grievance procedures available to the affected parties, and dissemination of information about these.

3.0 Terms of Reference

3.1.0 General Description of the Project Area

RP implementation will be done in 3 major irrigation subprojects, i.e., Machhagaon, Pattamundai and HLC Range 1 which are situated in the Mahanadi delta and coastal region of Odisha. Machhagaon sub project is falling under Jagatsinghpur Irrigation Division, Pattamundai subproject is under two divisions - Mahanadi North Division and Kendrapada Irrigation Division and HLC Range 1 is also falling under two irrigation divisions, i.e., Jaraka Irrigation Division and Mahanadi North Division.

3.1.1 Assignment

The external monitor/consultant will be responsible for biannual review and monitoring of the progress of RP implementation, execution process, performance of the implementing agency and executing body, the PIU, and adequacy of institutional arrangement for carrying out implementation of RP.

3.1.2 Objective

Monitoring and reporting are important activities of RP implementation as that can ensure achievement of the objective laid down in the plan, as well as in ADB's Safeguard Policy Statement. Engaging an external monitor for reviewing RP implementation periodically has been recommended in the RP. Accordingly, the consultant/agency will be engaged by ERA to monitor and review RP implementation to assess whether implementation activities were as per schedule, and whether it addressed the basic issues of involuntary resettlement.

4.0 Scope of Services

The external monitor will review implementation of the RP biannually to assess whether the basic objective of ADB's Safeguard Policy is being fulfilled. The external monitor will also assess whether the process of relocation and rehabilitation of the project-displaced persons, if any, and adequacy of institutional arrangements in RP implementation were as per ADB's Safeguard Policy Statement.

5.0 Review of Data and Documents

The external monitor will review baseline database. Besides, relevant documents collected during implementation, and the grievance redress mechanism will be reviewed by the external monitor.

6.0 Reporting Requirement

The external monitor will submit reports biannually to ADB through the executing authority, PMU. The language of the reports will be English. Illustrations, if necessary, may be provided as part of the reports.

7.0 Change of Scope

The external monitor will adhere to any change in scope of work, after consultation with the EA and in the true spirit of monitoring and reporting of resettlement activities.

GAP IMPLEMENTATION PROGRESS UPDATE FORMAT Gender Action Plan Implementation Progress Update Format

Activities, Indicators, Baseline, Targets, Time Frame and Responsibility	Progre	Issues and Challenges (Please include reasons why an activity was not fully implemented, or if targets fall short, or reasons for delay, etc.)	
	Progress for the Quarter (This should include information on progress for the current quarter qualitative and quantitative updates (sex-disaggregated data))	Cumulative Progress (This should include information on progress (qualitative and quantitative updates including sex-disaggregated data) from the start of the implementation of the GAP to the previous quarter's progress report.)	
Output 1. State and water user institutions str	engthened for water resources	and irrigation management	
 Activity 1.1 Implement the Orissa Pani Panchayat Act (2002), the Orissa Pani Panchayat Rules (2003) and the Orissa Pani Panchayat (Amendment) Act 2008 resulting in increased access of women to representation and participation, decision-making, governance and livelihood security Indicator: Participation of Women in Pani Panchayats/WUA is increased in 3 medium subprojects - Kansabahal, Ramial and Kanjhari Target: 33 % women by 2018 Baseline – Kansabahal: 3.8%, Ramial: 0% and Kanjhari: 0% 169 WUAs for major and medium, and 1,400 WUAs for MLI have enrolled women Target: 30% women by 2018 Baseline: 0% 75% of at least 169 WUAs have been re-elected with increased representation of women in executive committees and all subcommittees 			

Target: 33% women by 2018		
Baseline: 0 %		
Activity 1.2 Form PP Women Collective to address i) the needs of women titleholders and PP members; (ii) women farm laborers; (iii) developing and protecting access to irrigation water for alternative uses such as home gardens, livestock, and domestic consumption; and (iv) capacity development and livelihood programs targeting women. Indicator: One PP Women Collective is formed in each of the 7 sub-projects; HLC Range 1, Patamundai, Machegaon, MCII (Mahanadi Chitropptla Island Irrigation), Kansbahal, Ramial and Kanjhari Target: 100% women PP Members in each sub-project		
Activity 1.3 Organize pre-election awareness campaign women participation themes for participation of women in PPs Indicator: At least 2 awareness campaigns organized in each sub-project area before election Target: Overall 50% women participants		
Activity 1.4 Include women in capacity building activities of PP members through PIM/CAD Directorate Indicator: At least 2 capacity building programs for PP members per year in each sub-project area Target: 33% women in Year 1 and 50% women in Year 3		
Activity 1.5 Gender concerns/issues in PIM are adequately addressed Target/Indicator: • DOWR Gender policy is prepared in line		

 with National Policy for the Empowerment of Women 2001 and Odisha State Policy for Girls and Women-2014, and is approved and adopted by DOWR Gender Budget cell in DOWR is established to focus on gender-based analysis and an equality-oriented evaluation of the distribution of resources at DOWR 		
Activity 1.6 Ensure women's equitable participation in all processes related to preparing SIP & PP level Micro Plans Indicator: Women participate in SIPs & WUA level micro plan meetings in each sub-project area Target: 30% women		
Activity 1.7 Develop an advocacy brief gender and social inclusion in WUA along with best state practices to enable gender responsive WUA norms.		
Target/Indicator: Advocacy brief prepared and disseminated in regional language at all sub-project area		
Activity 1.8 Provide services to farmers through project such as (i) support women in their home-based post- harvest production, value addition and marketing activities; (ii) improve processing of agricultural produce and diversify to high value vegetable production; and (iii) provide women with training in crop and horticulture production and processing Indicator: Women farmers / heads of		

households are identified and prioritized for services provided by project <i>Target:</i> All women farmers/heads of households in sub-project area <i>Baseline:</i> To be established within 3 months of		
the commencement of project		
Output 2. Irrigation system infrastructu	are modernized and managed	
Activity 2.1 Train WUA members on O&M of irrigation system infrastructure Indicator: At least 169 WUA's O&M and Water management Sub-committee Members at 7 sub-project area are trained on O&M of irrigation system infrastructure Target: Overall 33% women WUA members		
Activity 2.2 Ensure equal employment opportunities for women in the project activities (skilled and unskilled) Indicator: Number of women employed across all project sub-activities in both skilled and unskilled categories Target: 30% women		
Activity 2.3 Ensure that all bidding documents include a clause requiring contractors to adopt targets for the employment of women laborers and provision of core labor standards (incl. equal wages for work of equal value) Indicator: All bidding documents include relevant clauses on gender and core labor standards (including equal wages for work of equal value) Target: 100% - All bidding documents		
Activity 2.4 Orient PP Office Bearers and contractors on the implementation of the clause elaborating actions related to gender and core labor standards Indicator: All PP Office Bearers and engaged		

contractors oriented on provisions related to implementation, monitoring and regular reporting of gender and core labor standards, with focus on GOI/GoO legislations and			
for PP Office Bearers and Contractors)			
Target: 100% - All PP Office Bearers and			
Contractors			
Output 3. Project management systems effective	ve	1	
Activity 3.1 Develop MIS with social and gender indicators Target/Indicator:			
 MIS with social and gender established and operational Data disaggregated by sex, ethnicity and vulnerability levels is collected and reported every six-months 			
 Activity 3. 2 Ensure Participation of women in all project related implementation activities Indicator: Women are employed/contracted as PIM Unit Staff 			
<i>Target:</i> 20% women in year 1, 30% women in Year 3 and			
 Women trainers are employed/contracted by PIM Unit 			
<i>Target:</i> 20% women in year 1, 30% women in			
Year 3 Women are prioritized to fill vacant and new			
positions (under PIM/CAD Directorate)			
<i>Target:</i> 20% women in year 1, 30% women in			
Year 3			

⁶⁰ core labor standards, Contract Labor Regulation and Abolition Act 1970, and the Regulation of Employment and Condition of Services Act 1996), the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013

 Activity 3.3 Gender-sensitive training course/modules in place for DOWR staff <i>Indicator:</i> Gender-sensitive training course/module for training of DOWR staff is prepared and Annual gender training⁶¹ is organized for DOWR Staff and orientation gender issues in irrigation sector and gender sensitive policies, schemes and legislations is provided <i>Target:</i> All Staff of DOWR 		
 Activity 3. 4 Project steering committee with participation from DOWR and Department of Women and Child Development, Government of Odisha is mobilized and functional Target/Indicator: The Directorate of Women and Child Development is a member of the project Steering Committee and Steering Committee Meetings are organized every six-months 		
 Activity 3.5 GAP Monitoring and Reporting <i>Indicator:</i> Gender Focal Point in PMU and GAP Coordinators at SIO are designated/identified and are assigned the responsibility of quarterly progress reporting of GAP and Gender Specialist in PPSU is appointed/recruited Vulnerable Group (including SC and 		

⁶¹ including orientation on Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013

ST) and Gender Specialist is appointed		
for 36 person-months at PMC for		
implementation and monitoring of GAP		
GAP implementation plan to align with		
GAP activities with project outputs is		
prepared and operationalized		
Component-wise annual plan and		
budget for gender-related activities is		
propared and integrated with overall		
prepared and integrated with overall		
annual plan of the project		
GAP progress update is prepared and		
reported		
Target: Every quarter GAP update is		
prepared/reported		

CAD = Command Area Development; DOWR = Department of Water Resources, Government of Odisha; GAP = gender action plan; GOI = Government of India; GoO = Government of Odisha; LIP = lift irrigation point; O&M = Operations and Maintenance; PIM = participatory irrigation management; PMU = project management unit; PMC = project management consultants; PP = pani panchayat; MIS = management information system; PPSU = pani panchayat support unit; SC = scheduled caste; ST = scheduled tribe; SIO = Sub-project implementation office; SIP = sub project implementation plans; WUA = water user's association;

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 co-financing;
- 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, Co-financing, and Counterpart Funds)

Provide the following:

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

C. Project Purpose

Provide the following:

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

D. Implementation Progress

Provide the following:

□ assessment of project implementation arrangements such as establishment, staffing, and funding of the PMO or PIU;

- □ information relating to other aspects of the EA's internal operations that may impact on the implementation arrangements or project progress;
- progress or achievements in implementation since the last progress report;
- assessment of the progress of each project component, such as,
 - recruitment of consultants and their performance;
 - procurement of goods and works (from preparation of detailed designs and bidding documents to contract awards); and
 - the performance of suppliers, manufacturers, and contractors for goods and works contracts;
- □ assessment of progress in implementing the overall project to date in comparison with the original implementation schedule—quantifiable and monitorable target, (include simple charts such as bar or milestone to illustrate progress, a chart showing actual versus planned expenditure, S-curve graph showing the relationship between physical and financial performance, and actual progress in comparison with the original schedules and budgets, the reference framework or guidelines in calculating the project progress including examples are shown in 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).

ECONOMIC AND FINANCIAL ANALYSIS

A. Introduction

1. Project 2 of the Orissa Integrated Irrigated Agriculture and Water Management Program will (i) rehabilitate and upgrade existing large, medium and small irrigation schemes; (ii) provide extension and training support to enhance the capacities of farmers to improve their production methods; and (iii) assist farmer groups to manage and maintain the minor and sub-minor distribution and drainage systems. The deterioration of infrastructure and impaired ability to operate and maintain systems effectively has a negative impact on production potential within each subproject area. Training and institutional support will focus on improving knowledge and methods so that beneficiaries can take full advantage of the rehabilitated and improved infrastructure.

2. Project 2 will: (i) modernize irrigation infrastructure on four major and three mediumsized subprojects to improve 108,091 hectares (ha) of irrigated area; (ii) rehabilitate 750 minor lift irrigation (MLI) schemes covering about 15,000 ha; (iii) improve field channels and distribution structures to benefit 54,045 ha; and (iv) restore about 57 kilometers of saline embankments. It is estimated that about 0.8 million people will benefit from these interventions. The major quantified benefit is improved irrigated crop production from the modernization of irrigation infrastructure and water management.

B. Macroeconomic Assessment

3. India has shown progress on both gross domestic product (GDP) and poverty reduction. Annual real GDP increased from \$1,226 billion in 2008 to \$1,840 billion in 2012. The proportion of the population below the poverty line declined from 45.3% in 1994 to 21.9% in 2012. The Indian agriculture sector accounted for 18.4% of India's GDP and employed 47% of the country's workforce in 2013. This sector has made considerable progress in the last few decades with its large resources of land, water and sunshine. India is presently the world's largest producer of pulses and the second largest producer of rice and wheat. Agricultural growth is variable from year to year as it depends on the monsoon, among other factors, and in recent years has varied between 0.1% in 2008, 8.6% in 2010 and 4.6% in 2013. In Orissa agriculture directly contributed 16.5% of state GDP in 2012 and including fisheries and forestry directly or indirectly provides employment for more than 60% of households.

C. Demand Analysis

4. Over 50 percent of the population in the project area is dependent on irrigated agriculture. Cropping intensities in existing cultivated areas are suppressed, mainly because of persistent water shortages. There is consequently a strong demand by farmers for additional irrigation water to increase agriculture production, which currently consists mostly of paddy, and to allow the cultivation of higher value cash crops. Incremental production from the project is expected to be less than 1% of present state production for paddy, pulses and vegetables, about 2% of present oilseed production and 5% to 6% of present production of all spices. At the local level, the project will also help to improve food security.

5. Given the limited agriculture production and food insecurity status of the project area, a strong local demand is anticipated for the additional agricultural production generated by the project, particularly of rice and pulses. No serious marketing constraints were identified: (i) there is a strong demand for vegetables and many schemes are close to urban markets; (ii) increased

rice production will be a very small part of state level output, and there is an export market; and (iii) pulses and oilseeds are in short supply.

D. Rationale

6. The economic rationale for project 2 is that the economic benefits of improved water supplies are unlikely to be supplied in the absence of government intervention. Private sector investment is discouraged as it is not possible to recover revenues from water charges at commercially viable rates. Moreover, the large scale of investment in irrigation works required in the project area precludes private sector investment as it is beyond the financial and managerial capacity of most private sector firms.

7. The project will contribute to national poverty alleviation policies with a high proportion of project benefits accruing to poor rural households.

E. Project Alternatives

8. The proposed project is the least-cost option that was identified to achieve the objective of providing water to the project area whilst minimizing adverse impacts on the existing system and the environment. A large number of studies and simulations were undertaken to select the infrastructure that would best achieve this objective. Two evaluation scenarios were developed to measure the economic benefits of the project: with-project (ie rehabilitation of the schemes) and without-project (no rehabilitation and continuation of status quo).

F. Methodology and Data

1. General

9. The economic and financial impacts of the investment program were originally evaluated in 2008, when feasibility studies were prepared for all subprojects for both project 1 and project 2. Since the original analyses there have been changes in economic conditions, exchange rates and relative prices in India. The analysis was therefore repeated using the previous farm level physical crop models and crop areas (or updated crop areas), and updated with 2014 costs and prices.

10. **Key Assumptions**. The economic analysis of the project was carried out by comparing with- and without-project scenarios following the Guidelines for the Economic Analysis of Projects (1997) of the Asian Development Bank (ADB). The economic analysis is based on the following assumptions: (i) the project life is 30 years, including the construction period of four years; the salvage value at the end of the project life is assumed to be zero; (ii) implementation will start in 2015 with benefit flows expected to start in the third year, with a build-up to full benefits over three years since the response of farmers to improved access to irrigation water is likely to be rapid; (iii) economic costs and benefits are expressed in constant 2014 terms with an exchange rate of Rs.64 = \$1.00, and are valued using the world price numéraire; (iv) taxes and duties, interest and price contingencies are excluded from the economic costs; (v) economic costs and benefits for non-tradable goods and services are derived by adjusting their values by the standard conversion factor of 0.92 and removing taxes; and (vi) a shadow wage rate factor (SWRF) of 0.80 has applied for unskilled farm labor.

2. Project Benefits

The reliability of water supply, associated with the deteriorated condition of infrastructure 11. and inefficient operation, is a major factor constraining the productivity of irrigation systems in the subprojects both in monsoon and dry seasons. Following scheme rehabilitation crop production is expected to increase both in terms of quantity and value as a result of (i) increased yields, (ii) changes in cropping patterns and intensities to high value crops, and (iii) a marginal expansion of command area. Crop yields will increase due to (i) more reliable water supply, (ii) increased use of modern inputs induced by assured water supply, and (iii) provision of extension and other support services. Crop diversification is expected to be facilitated through (i) introduction of field channel networks to improve distribution and (ii) intensification of staple crops that will encourage farmers to grow more cash crops. Water user associations (WUAs) will also be encouraged to adopt water saving crops in the dry season. These trends are already being observed in completed project 1 schemes where farmers have shown that they respond rapidly to improved water availability. The improved canal network will also increase conveyance capacity and distribution efficiency thereby enabling the expansion of the irrigation command area.

12. To evaluate project benefits, crop models for inputs and outputs were prepared to reflect existing conditions in the subproject areas, based on Department of Water Resources (DOWR) data and information from field staff in the respective districts and subproject areas. Three sets of crop budgets were prepared for the seven subprojects plus the MLI schemes. The two large schemes (Machhagaon and Pattamundai) and the two larger of the medium schemes (High Level Canal – Range 1 (HCL-1) and Mahananda Chitrotpala Island Irrigation (MCII) are located in four contiguous low lying districts near the coast and have similar conditions and thus a common set of crop budgets has been applied. Kanjhari and Kansabahal subprojects are located further and with similar conditions and consequently grouped together, while Ramial has a slightly different set of crop budgets to describe production in its context. The crop budgets prepared for Kanjhari and Kansabahal have also been applied for the lift irrigation schemes, since these crop budgets provide a better average to reflect the variety of conditions in which these numerous and very small schemes (average size 20 ha) will be located.

13. For each subproject, the present proportions of cultivated area that are fully irrigated, partially irrigated or only rainfed during the kharif season and the proportions that are irrigated or cultivated based only on residual moisture during the rabi season have been identified. For paddy, kharif season crop budgets have been matched to each irrigation context. In the rabi season rice is grown only on land that is irrigated. In the with-project scenario 100% of cultivated area is assumed to be fully irrigated in all subprojects, but in the rabi season the area that can be irrigated depends on the design flows available (Table A4.1). Other crops may generally be grown under irrigated or rainfed or residual moisture conditions.

14. Financial prices used in the analysis for non-traded inputs and outputs were obtained from farmer market prices, government-mandated minimum support prices where relevant, and local information reported by field staff. (A detailed report on prices is attached as an annex to the Economic and Financial Analysis Supplementary Appendix.) For traded goods (paddy, groundnuts and fertilizers) economic prices have been derived from recent World Bank commodity price information, with adjustments for transport, handling and processing, as appropriate.

15. Improved irrigation infrastructure and better management of water, together with appropriate training provided by the project will help famers to increase yields of paddy and

other crops. In the case of paddy, present yields used in the crop models are based on a combination of information provided by farmers and field officials and district level data for 2012-13 and 2013-14 from the state Directorate of Economics and Statistics. Yield improvements of 10% or less for paddy are expected in areas that are currently fully irrigated. In those areas that are currently only partially irrigated or not irrigated during the kharif season, it is expected that yields will increase from existing levels for the with-project fully irrigated yield for the respective subproject. For the areas currently only in rainfed production, this implies yield increases between 30% and 50%. While this may seem high, yield increases recorded for paddy in project 1 subprojects at mid-term review vary from 24% to 96% on base year yields of between 2 and 3 tons/ha. Furthermore, farmers in the current fully irrigated areas of the project 2 subprojects report achieving yields of up to 5 tons/ha now and, with newly available varieties, are confident of achieving even higher yields. In contrast, the highest with-project paddy yield used in the crop models is 4.4 tons/ha for rabi season paddy in Ramial subproject.

		Kharif			Rabi	
Subproject	Fully Irrigated	Partially Irrigated	Rainfed	Irrigated (fully)	Residual Moisture	No Cultivation
Present:						
Machhagaon	62%	28%	10%	30%	58%	12%
Pattamundai	76%	10%	14%	31%	59%	10%
HLC-1	62%	14%	24%	50%	35%	15%
MCII	45%	10%	45%	0%	53%	47%
Ramial	78%	10%	12%	45%	5%	50%
Kanjhari	72%	6%	22%	12%	8%	80%
Kansabahal	80%	8%	12%	19%	6%	80%
With project:						
Machhagaon	100%	-	-	50%	40%	10%
Pattamundai	100%	-	-	50%	48%	2%
HLC-1	100%	-	-	50%	35%	15%
MCII	100%	-	-	77%	10%	13%
Ramial	100%	-	-	68%	8%	24%
Kanjhari	100%	-	-	29%	12%	59%
Kansabahal	100%	-	-	57%	8%	35%

Table A4.1: Irrigation Status of Subproject Cultivated Areas

Source: ADB estimates

16. Cropping patterns in each subproject area have been simplified into five crops: paddy, vegetables, pulses, spices and oilseeds. Millets, maize and other grains are grown in some areas, as are jute and other fiber crops, and sugarcane, but the areas involved are usually very small and have been subsumed under other crops for the purposes of this assessment. Cropping intensities in each area are determined by the present and future irrigated areas and are given in Table A4.2. A generally conservative approach has been taken to estimating future benefits and for some subprojects future cropping intensities may be under-estimated.

Subproject	Present	With Project	Subproject	Present	With Project
Machhagaon	179%	189%	Ramial	139%	177%
Pattamundai	196%	197%	Kanjhari	109%	130%
HLC-1	182%	189%	Kansabahal	102%	142%
MCII	137%	174%	Lift irrigation	184%	220%

Table A4.2: Subproject Cropping Intensities

Source: ADB estimates

17. The improvements implemented by the project are expected to lead to increases in production of about 73,000 tons of paddy, 114,000 tons of vegetables, 7,500 tons of pulses, 10,000 tons of spices and 16,000 tons of oilseeds.

18. Average farm household incremental income varies from amongst the subprojects, from Rs29,987 (\$468) in Ramial to Rs17,414 (\$272) in Kanjhari per ha for an owner operated farm assuming the farm family provides all labor inputs required. In the project districts, 75% of farms are less than 1 ha in size and farms in this category have an average size of 0.58 ha. Only 6.4% of farms in these districts are larger than 2 ha. Sharecropping is common throughout the area and the proportion of sharecroppers among all farm households in the subprojects varies from 8% in MCII to 48% in Kanjhari. The division of inputs and outputs between owner and sharecropper may be 50:50, 30:70 or 33:67 depending on location and season. Labor is provided by the sharecropper. For 50:50 sharecropping, average incremental farm household income accruing from the project in all subprojects will be between Rs22,428 (\$350) and Rs12,732 (\$199) in Ramial and Kanjhari, respectively.

19. **Non-Quantified Benefits**. The project will generate some benefits that cannot be quantified for inclusion in the analysis. These include benefits accruing from the following project activities that are not captured directly through impacts on crop production: (i) improved planning system with comprehensive implementation plans; (ii) strengthened WUAs to undertake operations and maintenance (O&M) of at least minor facilities, support agriculture extension and marketing; and (iii) improved irrigation and related service delivery mechanism with transparent and accountable governance through WUAs. Benefits of the project derived from strengthening policy, planning, planning, and institutional framework, including participatory irrigation management and integrated water resources management will have wider impacts, at state and field levels, beyond the immediate subproject areas and are not estimated. The economic analysis also excludes impacts associated with livestock production (which may benefit from increased volumes of crop residues as fodder), minor fisheries, canal maintenance, roads and bridges on rural transport and public health benefits from improved drainage and water management.

3. Project Costs

20. Project 2 will cost \$172 million of which \$120 million will be funded from the ADB loan, \$48 million from the government, and the remainder will be beneficiary contributions from WUAs. The costs of each subproject were estimated based on the basic design of proposed structures and rehabilitation works, including on-farm costs for field channels to be implemented under the command area development component. Quantities and costs estimates are based on 2013 unit rates provided by the DOWR in Odisha which include all direct and indirect costs, labor, equipment, materials, services, and overhead. The financial cost was converted into economic costs applying the SCF. Other non-engineering and overhead costs of the project, such as the costs of agriculture extension and support services, consulting services, training, and administration were incorporated into the economic analysis on a pro-rata basis of the subproject benefit area. O&M costs for each subproject are based on engineering estimates.

G. Results

1. Subprojects

21. The results of the financial and economic analysis for the individual schemes are given in Table A4.3. This indicates the project will increase farm household financial incomes across all schemes for marginal, small and large farm holdings. Of the main project investments the EIRR ranges from 16.7% for Ramial to 25.9% for MCII. For the minor lift irrigation analysis, the EIRR for the average case was 29.3%.

Table A4.3:	Financial and	Economic	Analysis	of Subprojects
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	Financial Analysis Retained farm income per household ^{1), 2)}		Econom	ic Analysis
	Marginal	Small	EIRR	ENPV
	0.58 ha	1,63 ha	%	Rs million
Machhagaon	13,741	38,617	18.4	592
Pattamundai	13,275	37,308	17.6	655
HLC1	14,352	40,335	23.6	508
MCII	15,529	43,641	25.9	461
Ramial	17,372	48,878	16.7	140
Kanjhari	10,100	28,385	20.7	194
Kansbahal	14,647	41,164	19.9	109
Minor lift irrigation	17,034	47,871	29.3	561

Notes:

1. Incremental income before labor costs

2. Marginal and small farms account for 94% of farms in the subproject districts

2. Assessment of Project Economic Feasibility

22. The baseline EIRR was 21.8% and ENPV Rs4,378 million, indicating the project is economically viable under the baseline assumptions. The economic viability of the project is not sensitive to increases in investment and operation and maintenance costs or reductions in agricultural benefits (Table A4.4).

	ENPV (Rs million)	EIRR (%)	Switching Value (%)
Baseline	4,378	21.8	
Investment costs: +10%	2,756	19.6	+70
Operation and maintenance costs: +10%	4,177	21.3	+315
Agricultural benefits: -10%	3,118	18.8	-35

The Switching Value is the percentage change in the tested parameter that reduces the NPV to zero at the assumed discount rate of 12 percent. A high Switching Value indicates that the project is relatively insensitive to the tested parameter.

H. Distribution and Poverty Analysis

23. Three stakeholder groups were considered: government, agricultural producers and consumers of agricultural commodities (rice, vegetables, pulses, spice and oilseeds). These groups were further disaggregated into the project region and the rest of the country. The government will finance the investment and O&M cost of the project. Because the project will not generate incremental revenue, the government incurs a substantial net loss. Agricultural consumers and producers in the region will capture most of the net gains while agricultural producers in the rest of India suffer a welfare loss due to the marginally lower prices associated with increased production (Table A4.5). The poverty impact of the project was estimated at 61.0%.

	Consumers	Producers (Orissa)	Producers (Rest of India)	Government	Total
Government				-8,219	-8,219
Non-poor	6,465	2,351	-3,944		4,871
Moderately poor	5,546	1,291	-2,166		4,671
Very poor	8,556	8,112	-13,612		3,055
Total	20,566	11,753	-19,722	-8,219	4,378

Table A4.5: Distribution of Project Benefits (Rs. million)

Assumed poverty rates: India – non-poor (31%), moderately poor (27%), very poor (31%); Orissa - non-poor (20%), moderately poor (11%), very poor (69%).

I. Financial Sustainability of Project Investments

24. The sustainability of project investments will depend on effective implementation of both the civil works and of the institutional strengthening and training programs that will increase the capability of famers and WUAs to manage and participate in the operation and maintenance of the water resources infrastructure on which they depend. The project therefore has a strong emphasis on improving the capabilities of farmers and WUAs.

25. In addition, the government is increasing the resources available for meeting its responsibilities for maintaining infrastructure. The State of Odisha has significantly increased budget allocations for the O&M of water resources infrastructure in recent years. Actual expenditure on the O&M of major, medium and minor irrigation systems increased from Rs2,363 million in the 2007-08 fiscal year to Rs6.738 million in 2012-13. The budget for the 2015-16 fiscal year includes provision for the expenditure of Rs10,025 million for these purposes. This is a significant real increase in the resources available for O&M given that total inflation during the period from 2007-08 has been slightly under 90%.

26. According to the terms of the Ministry of Finance's 13th Finance Commission, the allocation for irrigation system O&M was increased to Rs1,175 per ha for potential irrigated area in the 2010-11 fiscal year, increasing to Rs1,500 per ha in 2014-15. It is expected to be further

increased under the 14th Finance Commission (2015 – 2020). These funds are allocated for works undertaken by the DOWR, DOWR personnel costs, and WUAs. For 2014-15 the provision was for Rs1100, Rs300 and Rs100 per ha, respectively. DOWR is responsible for the O&M of headworks, the main distribution system, and head regulators of minor and sub-minor canals. WUAs are responsible for the O&M of minor and sub-minor canals, field channels and drains and all structures turned over to them. For lift irrigation schemes, WUAs assume full responsibility for all O&M once the infrastructure is turned over to them by the Odisha Lift Irrigation Corporation.

27. Government's O&M works are partly funded by the irrigation water rates, which are fixed charges per ha and which vary with the crop and season. These rates have not been adjusted in Odisha for many years.

28. For the maintenance of minor canals, field channels, drains and related infrastructure, WUAs have to mobilize the necessary resources from the group's members, either in cash or as labor contributions. These contributions depend on many local factors but are typically not large and would be expected to require only a small portion of incremental income accruing from the project or some days of labor during otherwise non-busy periods. In MLI schemes where beneficiaries are responsible for all O&M costs, including pumping, farmers may contribute significantly more than in surface irrigation schemes. In some MLI schemes improved under project 1, farmers have been able to contribute up to Rs2,000 per ha per year to cover O&M and pumping costs, on average about 10% to 12% of incremental income.

SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

Country:	India	Project Title:	Orissa Integrated Irrigated Agriculture and Water Management Investment Program – Project 2		
Lending/Financing Modality:	Project	Department/ Division:	South Asia Department / Environment, Natural Resources and Agriculture Division		
	I. POVERTY AND SO	OCIAL ANALYS	SIS AND STRATEGY		
Targeting classifica	ation: General Classification				
A. Links to the Nati	onal Poverty Reduction and Inc	lusive Growth	Strategy and Country Partnership Strategy		
recognizes agricultu development. The p clear impact on po Government of Odis the mainstay of the strategy recommend the necessary stimu are consistent with promote efficient wa	recognizes agriculture and rural development sectors as intrinsic to the larger goal of inclusive glowin. It development. The plan also gives due credence to the centrality of irrigation for accelerated agricultural growth with clear impact on poverty alleviation, increased employability and enhanced contribution to national GDP. The Government of Odisha 12th plan approach aims at a broad based inclusive growth of 9%. It recognizes agriculture as the mainstay of the state economy and aims to achieve a 4% growth rate in agriculture in the plan period. The strategy recommends greater efforts directed to improve agriculture and irrigation sectors. The project aims to provide the necessary stimulus to the agriculture sector in Odisha with a direct impact food security. The project objectives are consistent with the country partnership strategy, 2013–2017 of Asian Development Bank (ADB) for India to				
agricultural production	on, improved food security and e	nhanced house	hold income of farmers, water users and poor		
rural people.	Poverty and Social Analysis du				
 rural people. B. Results from the Poverty and Social Analysis during PPTA or Due Diligence 1. Key poverty and social issues. The Population of Odisha (2011 Census) is about 42 million. About 83% live in rural areas and about 22% are scheduled tribes. The rural economy is predominantly agrarian and the poverty head count ratio for rural Odisha for 2011–2012 was 35.7% as compared to the national average of 25.7%. Poverty incidence is highest amongst scheduled tribes (ST) and scheduled castes (SC). SC males constitute 8.61% and SC female constitute 8.50% of the state population, while ST males is 11.26% and ST female is 11.58%, as per Census 2011. Access to and control over irrigation water is of fundamental importance to the economic and social well-being of the rural masses. Irrigation systems sustain livelihoods through agriculture, agro-forestry, and livestock management. Sufficient, timely and equitable access to irrigation water will increase household income and food security with reduced vulnerability risks. Enhanced participation in decision making and management of irrigation water will also ensure more equitable distribution of benefits. 2. Beneficiaries. Feasibility study reports of the major and medium irrigation schemes and two sample minor lift irrigation schemes indicate that beneficiary farmers comprise landless (7–26%), marginal (33–64%), small landholders (18–35%), and large land-holders (4–19%). Poverty incidence in the subproject areas was 37–61% in 2013. About 8.5% of total households are below the "absolute poverty line" in terms of calorific intake and access to resources. On average 17% of the poor are landless and 49% are marginal farmers. 3. Design features. Irrigation subprojects will address rural poverty by augmenting agricultural production, thereby increasing on- and off-farm incomes. The embankment subprojects will protect people, infrastructure (irrigation, local roads, and utilities), livestock, and agricultural land from storm surges					
A participatory proce areas. An inventory impacts on various resources needs con to contribute to O&M facilitate this proces expected implemen Awareness raising for WUAs. Local unskill	II. PARTICIPATION ess was used during the project pur- of local needs was prepared, co- local interest groups; (iii) implicat mpared with other development no A; and (vii) other interventions like ess. This process identified the fur- tation areas. The project will e- or vulnerable groups will be inclu- ed and skilled laborers, including	AND EMPOW reparatory stage wering (i) water titons of solutio eeds; (v) the rol e micro credit. N ture actions to ensure inclusive ded and their ca women, will be	ERING THE POOR to include vulnerable groups in the subproject resources and uses; (ii) constraints and their ns for poverty reduction; (iv) prioritizing water le of service providers; (vi) people's willingness Nongovernment organizations were engaged to institutionalize community participation in the eness and equitable representation in WUA. apacity will be strengthened for participation in engaged in the construction. Particular efforts		

will made for representation of women and other vulnerable groups in WUA decision-making.

2. If civil society has a specific role in the project, summarize the actions taken to ensure their participation.

3. Explain how the project ensures adequate participation of civil society organizations in project implementation.

4. What forms of civil society organization participation is envisaged during project implementation?

🛛 M Information gathering and sharing 🖾 M Consultation 🗌 Collaboration 🗌 Partnership

5. Will a project level participation plan be prepared to strengthen participation of civil society as interest holders for affected persons particularly the poor and vulnerable?

Yes. Describe key features, responsibilities and allocated resources No. Explain why It is expected that non-government organization will be invited to participate in the implementation of resettlement plans.

III. GENDER AND DEVELOPMENT

Gender mainstreaming category: Effective Gender Mainstreaming

A. Key issues. Women are important producers of homestead crops and livestock, and their post-harvest activities contribute over 50% of the value of crop produce. The division of labor is prescribed by social norms that by tradition limit women to remaining in seclusion in the immediate household area. Women also have little or no access to land other than through their relationship with male family members. Census data 2011 for project areas (block level data) and project socio economic surveys indicate that women contribute significantly to the local economy. This participation is much higher in ST dominated areas which are hugely dependent on forest produce. There is also a clear segregation of agricultural activities performed by women as per caste hierarchies. In such project locations their work participation is very low and restrictive both across main and marginal work (in the range of 9 to 20%). Women are underrepresented in WUAs; this is attributed to low levels of awareness about the role and responsibilities of WUAs. In Project 1 participation of women in general WUA bodies is 6.34%, 5.6% in Pani Panchayats, 17.2% in chak committees and 17.7% in WUA executive committees. The Orissa Pani Panchayat (Amendment) Act 2008 mandates that one-third of the total number of seats in each WUA executive committee is reserved for women.

B. Key actions. The Project will provide measures to promote the interests of women and gender equity in governance and decision-making. Pre-election awareness campaigns will be organized for active participation of women in WUAs. The gender and development strategy includes enhancing women's access to information, participation in irrigation management institutions and ability to protect their interests and improve their livelihoods. WUAs will have female representatives on the management committee and all subcommittees, with an overall target representation of 33% women on all committees. A WUA women collective will also be formed in each of the 7 subprojects and women will be encouraged to attend project trainings with 33% of the training slots reserved. For general training offered to all WUA members, 50% of the slots will initially be reserved for women WUA members. Bid documents for works will stipulate equal wages for men and women. The PIM-CAD Directorate will have at least 20% women trainers (in the first year) to increase to 30% no later than year 3. These and other activities are detailed in the gender action plan. A gender focal point will be designated in the PIM-CAD Directorate and a GAP coordinator placed in each SIO for monitoring activities. A Vulnerability and Gender Specialist in PMU will oversee GAP implementation, monitoring, and reporting.

Gender action plan Other actions or measures □ No action or measure IV. ADDRESSING SOCIAL SAFEGUARD ISSUES

A. Involuntary Resettlement

Safeguard Category: A B

ПС 🗌 FI 1. Key impacts. In four subprojects, residential, commercial, or common property structures are on or adjacent to the main and distributary canal systems and require relocation. A total of 3106 households are affected, 834 in Pattamundai, 811 in Machhagaon, 302 in HLC, and 1149 in Mahanadi Chitropala Island (MCI). There will be no loss of agricultural land or land acquisition in the subprojects except in MCI where 45 hectares of land has been acquired. There are no involuntary resettlement impacts in saline embankment subproject areas, as no individual will be physically or economically displaced. Land owners have volunteered to donate land whatever if any is required for reconstructing the embankments. Historically, all embankments in Odisha have been known to be constructed on donated land. In addition the proposed embankment design will incorporate (where technically feasible) a concrete toe cut off wall on the front and back slopes to avoid any potential right-of-way widening and resettlement impacts. However, if additional land will be donated during project implementation, the donation will be executed in accordance to the ADB SPS, 2009.

2. Strategy to address the impacts. A resettlement framework has been revised to match the requirements of SPS 2009 as well as the government's Land Acquisition and Rehabilitation and Resettlement Act, 2013. This revised framework will be applied to Project 2¹. It outlines the policy, procedures and institutional requirements for the preparation and implementation of resettlement plans (RPs). The MCI RP was prepared in 2008 before the Program was approved, and land acquisition was financed through Project 1 resources. The RP for the MCII subproject complied with ADB's 1995 Involuntary Resettlement Policy. There are no outstanding complaints. The RPs for the

¹ The subprojects under Project 1 will continue to be implemented in accordance with the original RF of the MFF.

other 3 subprojects were prepared during the processing of Project 2.		
3. Plan or other Actions.		
Resettlement plan Combined resettlement and indigenous peoples plan		
Resettlement framework Combined resettlement framework and indigenous peoples		
Environmental and social management planning framework		
system arrangement		
☐ No action		
B. Indigenous Peoples Safeguard Category: A X B C FI		
1 Key impacts The Project is not located in the native habitat of Scheduled Tribes (ST) but around 25% of the		
non-lation in the project grass is ST. The diagance showed that the ST population is socially and culturally		
integrated with the project areas is ST. The due diligence showed that the ST population is sociary and culturary		
integrated with the mainstream population. The Project with improve the mainagement of water resources and impact the		
systems in the project areas, which will belief the STS and Scheduled Castes (SC) as well. No negative impact to		
Sis and SCs is expected. In addition, the enhancement of knowledge on cultivation of high value crops and the		
participatory strengthening of WUAs will positively benefit STs and SCs. On this basis, the Project was categorized as		
Is broad community support triggered? 📋 Yes 🛛 No		
2. Strategy to address the impacts. The Project will not result in adverse impact to STs and SCs but will directly		
benefit them. Therefore, no specific action is required; all actions needed for beneficiaries have been incorporated		
into Project design.		
3. Plan or other actions.		
☐ Indigenous peoples plan ☐ Combined resettlement plan and indigenous		
Indigenous peoples planning framework peoples plan		
Environmental and social management system		
arrangement ^q		
□ Social impact matrix		
□ No action project with a summary		
A Risks in the Labor Market		
A. hisks in the Labor Market		
1. Relevance of the project for the country's of regions of sector's labor market.		
\triangle Unemployment (L) \triangle underemployment (L) \triangle renericinitent (L) \triangle core have standards (L)		
2. Labor market impact. The project will positively impact the agricultural labor market by providing unskilled and		
skilled employment opportunities, especially for the landless and vulnerable farming nouseholds, focusing on higher		
value agricultural and irrigation practices.		
B. Affordability		
The project will promote improved irrigation management, agricultural practices, and farm and off-farm income-		
generating activities at no cost to the target populations. This is expected to influence an increased number of socially		
excluded and marginal populations to participate in project activities.		
C. Communicable Diseases and Other Social Risks		
1. Indicate the respective risks, if any, and rate the impact as high (H), medium (M), low (L), or not applicable (NA):		
Communicable diseases (NA) 🔲 Human trafficking (NA)		
Others (please specify)		
2. Describe the related risks of the project on people in project area. Not applicable		
VI. MONITORING AND EVALUATION		
1. Targets and indicators. Key targets and indicators that will contribute to promoting pro-poor, inclusive, and		
cender relevant impacts include the following: (i) 75% of 169 WUAs have been re-elected with about 33% women		
members on the executive committee and (ii) 169 WIIA members at 7 subprojects are trained on O&M of irrigation		
system infrastructure (Target: about 33% women included in training)		
2 Bequired human resources: The management information system (MIS) will contain sex-disaggregated data		
3 Information in FAM: The FAM includes a comprehensive benefit monitoring and evaluation system and MIS		
detabase Monitoring of implementation of the gender estion plon will be done by ADB during review missions and this		
valable. Wolfing of implementation of the gender action plan will be done by ADB during review missions and the		
midlerin review, and regular progress reporting by the Program Management Onit (PMO). Socioeconomic baseline		
surveys will be undertaken at project mid-term and completion stages against a control group to monitor		
achievements against target indicators.		
4. Monitoring tools: The PMU will be responsible for submitting periodic (semi-annual) progress reports on the		
gender action plan, and will prepare compliance and sateguards monitoring reports on a quarterly basis. A mid-term		
review of the loan will be undertaken within 24 months after loan effectiveness to evaluate the scope of the loan,		
implementation arrangements, safeguard issues, achievement of scheduled targets, contract management progress,		
and other issues (including midcourse corrections). An evaluation will be undertaken 1 year after closure of the		
program. Findings of the completion report will be shared and disseminated within ADB and with key government		
officials at the national and state level.		

Source: Asian Development Bank.

Resettlement Framework

Available at http://www.adb.org/sites/default/files/project-document/158203/38411-043-rf.pdf

Resettlement Plans

- (i) High Level Canal Range-I (0 to 10 km) available at <u>http://www.adb.org/sites/default/files/project-document/158210/38411-043-rp-01.pdf</u>
- (ii) High Level Canal Range-I (10 to 53 km) available at http://www.adb.org/sites/default/files/project-document/158211/38411-043-rp-02.pdf
- (iii) Machhagaon available at <u>http://www.adb.org/sites/default/files/project-document/158213/38411-043-rp-03.pdf</u>
- (iv) Pattamundai (0 to 37 km) available at <u>http://www.adb.org/sites/default/files/project-document/158222/38411-043-rp-04.pdf</u>
- (v) Pattamundai (37 to 80 km) available at <u>http://www.adb.org/sites/default/files/project-document/158223/38411-043-rp-05.pdf</u>

Environmental Assessment and Review Framework

Available at http://www.adb.org/sites/default/files/project-document/158348/38411-043-earf.pdf

Initial Environmental Examination

Available at:

http://www.adb.org/sites/default/files/project-document/158350/38411-043-iee-01.pdf http://www.adb.org/sites/default/files/project-document/158352/38411-043-iee-02.pdf http://www.adb.org/sites/default/files/project-document/158357/38411-043-iee-05.pdf http://www.adb.org/sites/default/files/project-document/158358/38411-043-iee-06.pdf http://www.adb.org/sites/default/files/project-document/158354/38411-043-iee-03.pdf http://www.adb.org/sites/default/files/project-document/158356/38411-043-iee-04.pdf http://www.adb.org/sites/default/files/project-document/158360/38411-043-iee-07.pdf http://www.adb.org/sites/default/files/project-document/158360/38411-043-iee-07.pdf

CONTRIBUTION TO THE ADB RESULTS FRAMEWORK

	Level 2 Results Framework Indicators		
No.	(Outputs and Outcomes)	Targets	Methods / Comments
1	Land improved through irrigation, drainage,	108,091 hectares	
2	Households with reduced flood risk	34,000	

Source: Asian Development Bank.

Feasibility Study Report Update - Summary

Available upon request.

Project Climate Risk Assessment and Management Report

Available upon request.