

## SECTION-7: TERMS OF REFERENCE

### 1. BACKGROUND

1.1 The Government of Odisha through Government of India has received a multi-tranche financing facility (MFF) loan from the Asian Development Bank (ADB) to partly finance the implementation of the Orissa Integrated Irrigated Agriculture and Water Management Investment Program (OIIAWMIP). It intends to apply part of the proceeds of this loan to payments for consultancy services for Minor Lift Irrigation Planning and Implementation (MLIPI). The executing agency for the project is the Department of Water Resources (DOWR), Government of Odisha.

1.2 The objective of the OIIAWMIP is to enhance rural economic growth and reduce poverty in the four northern river basins (Brahmani, Baitarani, Burhabalanga, and Subarnarekha river basins) and a part of Mahanadi basin areas, while institutionalizing effective mechanisms to put into operation PIM-based agriculture growth. This is achieved through its two components:

- A. Productive and sustainable irrigated agriculture management systems
- B. Institutional strengthening and project management

1.3 Component A will produce (i) sub-project implementation plans (SIPs) with feasibility and safeguard assessments specifying output targets and program delivery schedules for all sub-components, prepared with Pani Panchayats (PPs or water user associations); (ii) PPs preparing the PP-level micro plans for irrigated agriculture development and achieving the set institutional development targets (e.g., membership enrolment, functional committees, registration, cash contribution for minor works); (iii) irrigation and associated infrastructure with expanded field channels and conjunctive use with groundwater in tail ends, delivered through improved quality control systems; (iv) enhanced agriculture production and incomes delivered through set programs in SIPs where PPs are developed as cohesive platforms to extend linkages with input delivery, technical support, and product marketing; (v) enhanced incomes of the vulnerable groups through set programs in SIPs organized through PPs; and (vi) efficient and sustainable O&M systems established at the levels of individual PPs, their higher tier committees, and the scheme wide levels, with clear O&M plans. This component covers 6 major (131,600ha), 9 medium (62,400ha), and 1,400 minor lift irrigation (MLI: 30,000ha) schemes<sup>1</sup> of the concerned river (sub-) basins.

1.4 Component B will culminate in (i) improved capacities and operational effectiveness of institutions to support sound irrigation service delivery and support services (with clear operational guidelines, and encompassing DOWR [including its new PIM/CAD directorate, quality control cell, and autonomous training institute], other line agencies, local government institutions, PPs, supporting NGOs and private agents); and (ii) progressive development of IWRM institutions, capacities, and instruments with a consultative approach, including the activation of the State Water Resources Board (a sector apex body), establishment of a state water tariff commission and a pilot river basin organization, and integrated and participatory basin development and management plans for the concerned river basins. These will be achieved through the agreed institutional reform actions and capacity development support through consultants with training.

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<sup>1</sup> Minor lift irrigation (MLI) schemes of Odisha Lift Irrigation Corporation (OLIC).

1.5 The loan comprises of about four tranches launched on the basis of the progress of preparing and implementing subprojects, each carrying its own terms and conditions. Of the possible total loan amount of about \$190 million, its first tranche is covers the period of the first five years (August 2009 – March 2015) of the 8-year implementation period, for about \$39 million, including the financing of ISPM & MLIPI Consultancy Services for this particular period. The financing for the subsequent period, including the remainder of the ISPM consultancy contract, is to be covered by the subsequent tranches.

#### **LIFT IRRIGATION SCHEME DEVELOPMENT UNDER THE PROJECT**

1.6 The objective (goal) of the Project is “enhanced economic growth and reduced poverty” and the outcome (objective) is enhanced productivity and sustainability of irrigated agriculture. The lift irrigation point (LIP) scheme development component of the Project will support this objective by achieving the following outputs:

- Output 1: PPs formed on lift irrigation schemes with representative of all land owners within the LIP command area, inclusive of women / vulnerable groups, with genuine commitment to the development of higher value cropping, for O&M of the scheme with water charges set sufficient to cover both power charges and system maintenance, and to act in the interest of all its members.
- Output 2 : infrastructure upgraded including adequate/ dedicated power supply, pumping arrangement and PVC pipe distribution system with outlets that cover the whole command area in equitable manner, and with farmer constructed earthen channels leading to individual plots.
- Output 3 : adoption by PP and farmers of higher value agriculture, which excludes rabi paddy cropping.
- Output 4 : equitable distribution of water with minimal water losses to farmers, with agreement on operation plans for both Kharif and Rabi, and implementation and funding of maintenance works.

1.7 The major risks and challenges faced by the Project in developing minor lift irrigation include:

- Securing adequate and reliable power supply for the pump.
- LIP ayacut delineation, ayacutdar listing and representative PP reformation/ formation
- PPs dominated by a few individuals (even non-members) who have become the custodians of the scheme, and who may resist opening the PP to broader participation, including to tenants.
- Willingness of farmers to engage positively and change to higher value cropping which excludes paddy in Rabi.
- Provision of infrastructure and PVC pipe distribution system that lends itself to equitable operation with minimal water losses.
- Water, land and / soil constraints

1.8 These risks and challenges will be mitigated by adoption of a scheme development process requiring active participation and contribution from the PP, and by strict adherence to (i) elimination criteria to screen out schemes at an early stage unlikely to be successful; and (ii) screening criteria to ensure only feasible schemes are included.

## 2. 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.

**Table - 1: Scheme Development Phases and Activities/Milestones.**

Scheme Development Phase		Activity / Milestone		Remarks
Nr	Description	Nr	Description	
I	Preparation Phase (9 months)	1	<b>Reconnaissance Report:</b> 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 <b>Funding Application</b> 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	<b>Work Plan:</b> 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.
		4	<b>Draft &amp; Final Appraisal Report</b> 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.

Scheme Development Phase		Activity / Milestone		Remarks
Nr	Description	Nr	Description	
		5	<b>PP formed / reformed</b> 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) <b>Power Agreement</b> between electricity distribution company and PP for commitments for supply of power and payment of charges. PP to make deposit to Distribution Company. (ii) <b>PP Development Agreement</b> 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	Construction 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
		8	Commissioning	Adjustment of control valves, command area of each outlet delineated, etc
III	PP Farmer Support (9 months). Note: these activities may overlap with Phase	1	Training needs assessment	These activities may run concurrently, each with preferably two visits.
		2	O&M Training	
		3	PP strengthening & monitoring	
		4	Records & Book keeping. Also independent financial audit.	

Scheme Development Phase		Activity / Milestone		Remarks
Nr	Description	Nr	Description	
	II: Construction	5	Agricultural extension: crop management, water management and crop diversification.	

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

#### 3.1 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)

#### 3.2 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<sup>2</sup>.
- 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.

<sup>2</sup> The upfront cash contribution shall be reviewed annually by the PMU, and should be about 10% of the pump and associated pumping infrastructure cost.

- The PP will make a labour (or cash) contribution equivalent to typically 20%<sup>3</sup> 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.

### 3.3 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.

The Final Appraisal Report will be prepared by MLIP Consultants and submitted to the PMU. The PMU lift irrigation cell will complete the report<sup>4</sup> with outline design and check that the screening criteria are met in addition to the elimination criteria:

<sup>3</sup> The labour contribution will depend on the works required, with a greater percentage contribution for schemes where the focus is on the distribution system and a smaller percentage contribution where the focus is on pumping plant and power.

<sup>4</sup> 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*.

- **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 huge 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.

**Table - 2: Go - No Go Decision Matrix**

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 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.

Nr	Criteria	Max Number of Points	Remarks
	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 PP<sup>5</sup>. 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 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.

<sup>5</sup> PPs committee members are elected every 3-year. The implication is that PP agreement is only valid for 3-years.



- 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 Company<sup>6</sup>.

#### 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 Implementation Plan**

Project Year	Number of Lift Schemes Initiated	Number of Lift Schemes Active <sup>7</sup>	Number of SIOs	Implemented During Tranche	Remarks
I	100	100	1	1	Completed.
II	100	200	1-2		
III	200	400	2-3		Completed.

<sup>6</sup> 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.

<sup>7</sup> 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.

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IV -V	250	650	2-3		
<b>Total Tr 1</b>	<b>650</b>	<b>650</b>			
VI	250	250	3	2	To be implemented by the present consultants
VII	250	500	3		
VIII	250	750	3		
<b>Total Tr 2</b>	<b>750</b>	<b>750</b>			
<b>Total</b>	<b>1,400</b>				

**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 Development Phase		Activity / Milestone		Institution with Prime Responsibility
Nr	Description	Nr	Description	
I	Preparation Phase (9 months)	1	Reconnaissance Report	MLIPIC (support from PMU)
		2	Funding Application	PP / farmers (support from MLIPIC)
		3	Work Plan/ schedule	PMU (MLIPIC to support)
		4	Draft Appraisal Report	MLIPIC (to be finalised by PMU Lift Irrigation Cell).
		5	Final Appraisal Report including Go – No Go decision	
		6	PP formed / reformed	PP, OLIC, MLIPIC (to support)
		7	i)Power Agreement	PP & Distribution Company
	ii)Development Agreement	PP, OLIC, MLIPIC (to support) & PMU		
II	Construction (6 months)	1	Detailed design including walkover & pump testing of TW (if applicable)	MLIPIC (PMU to check & approve)
		2	Construction Agreement	PP & Dam Safety Division (MP)
		3	Implementation of Power supply & construction of pumping arrangement & pipe distribution system	Distribution Company, PP & MLIPIC (PMU to monitor)
		4	Earthen channel distribution system	PP / farmers (PMU/MLIPIC to monitor)
		5	Commissioning	PP & MLIPIC (PMU/MLIPIC to monitor)

Scheme Development Phase		Activity / Milestone		Institution with Prime Responsibility
Nr	Description	Nr	Description	
III	PP / Farmer Support (9 months).	1	Training needs assessment	PP& PMU (MLIPIC support)
		2	O&M Training	PP& MLIPIC / PMU
		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.

### 3.4. 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.

**Table - 5: Lift Irrigation Cell Staff Composition**

Number	Staff Position	Transfer / Recruitment
<b>Planning (Preparation) Group</b>		
4 Nr	1 Lift Irrigation Executive Engineer, 3 AEs	Transfer (from OLIC)
3 Nr (depending upon no of SIO offices)	SIO Manager (Sub-project Implementation Office Manager), 1 AE per district and 1 JE per district.	Engaged as part of the consulting services package.

Number	Staff Position	Transfer / Recruitment
1 Nr	MLIPI Team Coordinator/Agro-economist	Engaged as part of the consulting services package.
1 Nr	Monitoring and Evaluation Specialist	
Up to 2 Teams each of 2 persons (6 Nr max)	Mobile teams consisting of one Agriculture Specialist and one Minor Lift Irrigation Specialist to assist OLIC undertake feasibility assessments of proposed lift irrigation schemes, from initial reconnaissance to final appraisal report.	
<b>Development Group</b>		
Nr of Development Group will vary from 2 to 3	PIM Training Coordinator – 2 nos	Engaged as part of the consulting services package.
	Irrigation Engineer / Works Inspector – 2 nos	
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 offices<sup>8</sup> 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 250 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

<sup>8</sup> 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).

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.
  - 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.

**Table - 6: Deliverable for LIPs**

Nr	Report	Responsibility	Assisted by
Phase I: 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
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.

#### 4. 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.

**Table – 7: Consultancy Staff Inputs**

S. Nr.	Staff Position	Nr of Staff	Input (sm)
<b>Planning (Preparation) Group</b>			
1	MLIPI Team Coordinator/ Agro-economist	1	1 x 24
2	Monitoring and Evaluation Specialist	1	1 x 24
3	Agriculture Specialist (Mobile Team)	2x3	6 x 24

4	Minor Lift Irrigation Specialist (Mobile Team)	2x3	6 x 24
<b>Development Group</b>			
1	PIM Training Coordinator	2x3	6 x 22
2	Works Inspector	2x3	6 x 22
3	Community Organisers	25x3	75 x 22
1	SIO Managers	3	3 x 24
2	Asst Engineers	6	6 x 24
3	Junior Engineers	6	6 x 24

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

#### 4.1 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**

- 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 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 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

## 4.2 DEVELOPMENT GROUP

### i. 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

### ii. 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

### iii. 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

#### **4.3. (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.
- l) 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.
- l. 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.

- Knowledge of relevant computer software desirable

## 5. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES

The Consultants will assist in the preparation of reports required for planning and implementation of lift irrigation schemes as detailed above in Table 6. In addition the consultants will prepare and submit to PMU the following reports in soft copy (on CD-Rom) in addition to the specified number of hard copies.

- Inception Report- Draft to be submitted within two (2) months of mobilisation and final copy to be submitted within three (3) months of mobilisation. **Number of copies to be submitted- 6 (six).**
- Quarterly Progress Reports- To be submitted within 30 days of the end of each quarter. **Number of copies to be submitted- 6 (six).**
- Final Project Completion Report- Draft copy to be submitted within one month (1) prior to programme completion. Final copy to be submitted within one (1) month after programme completion. **Number of copies to be submitted-12 (twelve).**
- Economic guideline to assess economic feasibility of minor lift irrigation and scheme selection- Draft copies to be submitted within one (1) month from the date of commencement of contract. **Number of copies to be submitted-6 (six).** Final copies to be submitted within two (2) month from the date of commencement of contract. Number of copies to be submitted-6 (six).

All reports except the progress reports will be prepared **in draft and final shape.**

## 6. CLIENT'S INPUT AND COUNTERPART PERSONNEL

- (a) Services, facilities and property to be made available to the Consultant by the Client:**

- Office space including furniture and utilities.
- Access to all relevant reports, studies, data, photographs, maps and institutions, access to all sites for surveys and investigations.
- Counterpart staff to work with the consultants' team.
- Assistance to procure all necessary administrative documents including but not limited to visas, exchange control documentation, import licenses, resident's visas.
- **The following equipments may be provided to the Consultants.**
  - i. **Computers - 3 (three) nos.**
  - ii. **Printers - 3 (three) nos.**

After completion of work, the above materials shall be handed over to PMU (OIIAWMIP).

**(b) Professional and support counterpart personnel to be assigned by the Client to the Consultant's Team**

- Professional counterpart personnel support will be provided by one or more Lift Irrigation Engineer(s).
  - Support for carrying out field studies, including permission to use facilities such as Guest Houses, payable at the official rates where possible, in connection with their official duties.
- 7. Client will provide the following inputs, project data and reports to facilitate preparation of the proposals:**
- List of Block wise MLI Sub-Project in the Districts of Bhadrak, Balasore, Mayurbhanj, Keonjhar, Sundargarh and Jharsuguda. Submitted by OLIC Ltd.