

Terms of Reference

Base line and Social survey

1 Background

The Government of Odisha in partnership with National Bank for Agriculture and Rural Development (NABARD) is implementing “**Ground water recharge and solar micro irrigation to ensure food security and enhance resilience in vulnerable tribal areas of Odisha** (Funded Activity: GCF-FP045)” through “Odisha Community Tank Development and Management Society (OCTDMS)”, an SPV under the Department of Water Resources (DoWR).

The Green Climate Fund (GCF), designated as an operating entity of the financial mechanism under Article 11 of the United Nations Framework Convention on Climate Change and established pursuant to the governing instrument having its Head Quarters at Songdo, Incheon, Republic of Korea is assisting with a grant of USD 34.357 Million and Govt. of Odisha will support the project with about USD 117.735 Million. There will be a Community Contribution of about USD 14.205 Million through cash/kind for the project.

The project aims at augmenting the ground water level through introduction of the structural measures such as to construct 10,000 recharge structures in 15 districts viz., Baragarh, Bolangir, Boudh, Gajapati, Kalahandi, Kandhamal, Keonjhar, Koraput, Malkangiri, Mayurbhanj, Nawarangpur, Nuapada, Rayagada, Sambalpur and Sonapur to tap the additional water available during monsoon in the tanks (public/community/private) for post monsoon augmentation of the ground water. Further, the project will install 1000 solar pumps for agricultural purposes in line with national target of reaching 1, 00,000 MW solar power by 2022 under the Jawaharlal Nehru National Solar Mission (JNNSM).

The project will thus improve and ensure water security, food security, Energy security with linkage to climate change and adaptation solution to about 5.2 million vulnerable SC/ST population in these 15 districts. Enhanced food security in these areas will enhance their adaptive capacity.

2 Assignment Objective

Objective of the Assignment is to conduct and prepare,

- 2.1 Base line and Social survey for 10,000 tanks proposed to be taken up under this GCF assisted project. It will include the status of various tanks, mapping of area, sensitivity and adaptive capacity related indicators, the preparedness of the local communities; nature of the cropping pattern current patterns of water use and energy use will also be covered in baseline.
- 2.2 Number of farmers/farmer groups adopting resilient technologies and practices (farmers disaggregated by gender) – (such as agriculture productivity, water productivity/efficiency)
- 2.3 Percentage increase in irrigation supply in the selected tank command areas.
- 2.4 Percentage increase in productivity (for selected crops, vegetables, fisheries, and small ruminants) from selected agriculture communities over the baseline value.
- 2.5 Number of farmers benefitted through increased access to agricultural assets and services – disaggregated by gender.
- 2.6 Change in incremental value to various carbon stock assessments in selected plots
- 2.7 List of likely indicators is given in the **APPENDIX-A**.

3 Detailed Outline of the tasks to be undertaken (ToR):

3.1 Base Line Study:

- 3.1.1 The agency shall undertake a survey to generate baseline information on all the key indicators to be tracked during the project.
- 3.1.2 Questionnaires and formats for this survey should be prepared within one month of award of contract to the consultant, pre-tested in the field, and cleared with the SPU prior to any actual data collection effort.
- 3.1.3 The methodology regarding coverage and sampling strategy of project tanks, villages, farmer groups and farmers should be developed keeping in mind the representativeness of all categories (geographic location; agro-climatic; tank size; head, middle-and tail- end farmers; whether tank is used for irrigation/non-irrigation/ public/private/ownership etc; fisher folk and other stakeholders in tank areas; gender; tribal groups; and other relevant socio-economic criteria) as well as statistical validity, and agreed between the SPMU and the consultant agency.
- 3.1.4 Prepare the technical design of the impact evaluation using experimental or quasi-experimental methodology; it should include power calculations, sampling strategy etc.
- 3.1.5 Do the preparation work for the baseline data collection such as designing the survey tools, protocols etc.
- 3.1.6 Conduct a pilot test of the survey tools with up to 100 households in 10 villages in at least two districts. The pilot survey will be conducted in two rounds and specific locations for the pilot survey will be provided by the M&E team of OCTDMS. The pilot survey will also test the equipment to be used in the survey, the data management and transfer methods, and field supervision arrangements.
- 3.1.7 After pilot testing, the agency will debrief enumerators, examine the data sets, and make any proposals for changes. After discussion with the OCTDMS team, final versions of the questionnaires and data collection software will be prepared, and translated into Oriya/Hindi/English as needed. The OCTDMS team will provide final approval prior to roll-out.
- 3.1.8 Deploy required field team with desired experience and expertise and train all field staff (including extra staff to cover turnover) in both the technical aspects of the questionnaire and data collection.
- 3.1.9 Carry out a mapping and household listing of the villages in all blocks and Gram Panchayats in which the survey is to be conducted.
- 3.1.10 OCTDMS will provide the agency with the list of villages and households to be surveyed (based on the mapping and listing exercise) and the methodology to follow to identify replacement households.
- 3.1.11 Locate sample households in the field. The agency will prepare materials for field staff with maps, names of household heads and any other identifying characteristics, with suggestions from the OCTDMS team.
- 3.1.12 Collect, in an efficient and reliable manner, quantitative data at the household and village

level. The survey tool developed for the quantitative data collection will capture data on the intermediate indicators identified for the project, along with the indicators that measure impact in terms of the overall OIIPCRA project development objective. The number of households will be decided depending on requirements and the survey methodology that is finalized

3.1.13 Pre-analysis plan which includes detailed methodology of the analysis, indicators, limitations of the evaluations etc.

3.1.14 Clean and analyze data and prepare the technical baseline report.

A rigorous quantitative impact evaluation would be carried out to estimate the precise impact of the OIIPCRA project interventions. To estimate the precise impact, quantitative baseline, mid-line and end-line surveys will be conducted. The current assignment is specific and restricted to the above mentioned quantitative baseline survey for the OIIPCRA project's impact evaluation.

3.2 Social Study:

3.2.1 Undertake beneficiary assessment, stakeholder analysis.

3.2.2 Identifying impact assessment

3.2.3 Analyse key social risks.

3.2.4 Analyse Tribal People and Gender Planning.

3.2.5 Suggest appropriate alternate institutional arrangements

3.2.6 Develop indigenous people development plan (IPDP)

3.2.7 Assess differential impacts of the project benefits.

3.2.8 Establish a baseline.

3.3 Environmental Assessment (Selected Projects):

3.3.1 To undertake study w.r.t. water storage and use, drainage, restoration of natural habitats, siltation/ sedimentation, pest management, water logging, bio-diversity, fishing, aquatic weeds.

3.3.2 Study of soil organic carbon, GHG emissions from crop-production system, use of chemical fertilisers and pesticides.

3.3.3 Impact of natural hazard risk assessment w.r.t climate change projections.

3.3.4 Study of environmental monitoring and management.

3.3.5 Keeping in view of key environmental issues, that need to be addressed based on consultations with various primary and secondary stake holders, a detailed environmental management frame work to be prepared for implementation of the same on the given phases of project cycle. **List of likely indicators is given in the APPENDIX-A.**

4 Qualification of Agency

4.1 Agency should be a registered organization/ company with minimum **5 (Five)** years of existence in the relevant field.

- 4.2 Average annual turnover in last three years should not be less than **One Crores INR**.
- 4.3 Agency should have successfully executed similar nature of assignments for:
- At least one project where base line assessment has been taken up in water resources/ agriculture or similar field.
 - At least one project on social and environmental assessment.
 - Experience in Climate Resilience in Agriculture and Water sector desirable
- 4.4 Prior experience of working with donor agency like The World Bank, ADB, etc. in Agriculture and Climate Change sector will be preferred.
- 4.5 Prior experience of preparing irrigation plan and Monitoring & Evaluation of Irrigation and Agriculture scheme/s will be given added weightage during selection of firm.
- 4.6 The agency should not be blacklisted with the Govt. of Odisha/ NABARD/ World Bank at the time of opening of the proposal or signing of contract for the consultancy.

5 Team Composition & Qualification

Sl. No.	Team composition	Minimum Qualification	Remarks
1	Team Leader (Senior Evaluation Specialist)	He/ She should have at least 10 years of experience in quantitative evaluation. She should have an advanced degree (PhD preferred) in economics/ statistics/ public policy or a related discipline. Specific experience in monitoring and evaluation of public policy programs for at least 5 years would be preferable.	Should have prior experience in Baseline studies & preparation of Manuals with proven track record of conducting rigorous evaluations. She should have independently led the design of a large-scale impact evaluation study (over 4,000 Households). At least one project should be using an experimental or quasi-experimental technique.
2	One Senior Agronomist Agriculture Expert	PG in Agriculture / Agronomy	10 years of post-qualification Experience in irrigated agriculture and farming systems, and having knowledge of both traditional practices and modern techniques for improving water use efficiency and agricultural productivity.
3	MIS/GIS Expert	Masters' Degree on Geology/ Engineering/ Geography / Environmental Science/ Marine Science with Diploma/ Certificate course in Remote Sensing & GIS/ Geo-Informatics	Two to three years' experience in data analysis or supervision of household surveys or rigorous (experimental or quasi experimental) impact evaluations. Knowledge on use of GIS/MIS related hardware and software and its application in Watershed related

			activities and resource management.
4	Data Analysts	S/he should have a degree in economics/statistics/public policy/development studies or a related discipline.	Two to three years' experience in data analysis or supervision of household surveys or rigorous (experimental or quasi experimental) impact evaluations. She should have experience working on statistical software packages like – SPSS, R, STATA, CS–PRO, Atlas.ti, etc.
5	Social/ Institutional development	PG in Sociology/ Anthropology/ Rural Management	5 years' experience in rural management, supervision of household surveys or rigorous (experimental or quasi experimental) impact evaluations.
6	Field supervisors	Minimum educational requirement for field supervisors is a master's degree (i.e. 5 years of study after completion of higher secondary / 12th standard).	Field supervisors should have experience in data collection and supervision of field team for large-scale household surveys. Regional experience is preferred, and the A basic competence in English is preferred though not required.
7	Enumerators	The minimum education requirement for enumerators is a bachelor's degree (i.e. 3 years of study after completion of higher secondary / 12th standard).	Enumerators should have experience in data collection for large-scale household surveys. Regional experience and knowledge is preferred.

6 Deliverables & Payment Terms

- 6.1 Prepare the technical design document for the impact evaluation containing the overall approach and methodology for carrying out the survey, a detailed work plan, outputs, and staff assignments with levels of effort by task and sub-task
- 6.2 Final versions of paper-based survey questionnaires
- 6.3 Documentation of data management processes
- 6.4 Report from pilot survey and field testing of survey questionnaires
- 6.5 All training material and field manuals
- 6.6 Documentation of data collection protocols
- 6.7 Census data from mapping and listing of households
- 6.8 Survey data as it is being collected on a continuous basis
- 6.9 Complete data sets with GPS coordinates of dwellings of all sampled households
- 6.10 Analysis and final technical baseline report
- 6.11 The Agency shall submit hard copies of 5 sets of Draft Report (s) (Black & White) & 15 sets of Final Report (Colour) along with the original manuscript of all databases and also the soft copy

of final report along with all databases in MS Excel sheet.

- 6.12 Develop an innovative method to capture database for the baseline and produce technically analyzed baseline information along with scope of improvement in terms of area, location, quantum, commodities, social security and social well being etc.

TABLE - 2.0				
Sl. No.	Description of Work	Schedule Dates of submission (from Date of signing of contract)	Payment schedule	Remarks on release of payment
1	Inception report	30 Days	10%	On acceptance of key indicators, questionnaires and formats for the survey, methodology regarding coverage and sampling strategy, statistical validity by the client.
2	1 st Draft report on Baseline, social and environmental survey	60 Days	20%	After scrutiny of draft reports and interaction with the consultants during workshop and suggestions thereof to the consultant.
3	1 st Draft baseline, social and environmental survey sharing workshop at the OCTDMS-SPU level	75 Days		
4	2 nd Draft report on Baseline, social and environmental survey	90 Days	20%	After scrutiny of final draft and interaction with the consultants during workshop and suggestions thereof to the consultant
5	2 nd Draft baseline, social and environmental survey sharing workshop at the OCTDMS-SPU	120 Days		
6	Submission of final baseline report	135 Days	25%	On acceptance of final baseline report.
7	Submission of final social assessment and environmental survey report	150 Days	25%	After acceptance of final baseline report and on acceptance of final social assessment report.

7 Key Indicators

Annexure 1: Key Indicators

1. Area and percent area under irrigation (source wise, under normal rainfall conditions). Average of the last 10 years but a minimum of four normal rainfalls.
2. Area under micro irrigation (method wise: drip irrigation, sprinkler irrigation)
3. Number of farmers (men and women separately) engaged in agriculture, fisheries and related activities within the tank ayacut and tank catchment areas

4. Productivity (Qtl./ha) & Profitability (input as detailed as possible including hired labor) costs & farm gate prices of each commodity) of major crops in the ayacut
5. Crop-wise area cultivated (in Kharif & Rabi), and change(s) in crop specific cultivated area.
6. Water Productivity (Tonnes/ha-m) for Surface water and Ground water
7. Land productivity (Rs/ha) Surface water and Ground water
8. Water use efficiency (Conveyance efficiency, application efficiency)
9. Soil Organic Carbon
10. GHG emissions from crop production systems (tons/ha with specific list of GHG emission activities)
11. Cost of production with specific inputs costs (Seeds, Fertilizers, Pesticides etc)
12. Average water yield of wells in the tank command.
13. Any other relevant parameters required for the project.

8 Duration of Assignment

The assignment would be for **150 days** from the date of signing of contract.

9 Composition of Review Committee

A committee consisting of following members shall coordinate and monitor the Consultant's work and would extend their cooperation in making available the data and information, obtaining approvals and also deal with the problems, if any, faced by the Consultant in executing the Contractual obligations:

1. Project Director, OCTDMS. (Chair Person)
2. Additional Project Director (Tech), OIIPCRA
3. Additional Project Director, Agriculture, OIIPCRA
4. Executive Engineer, Monitoring, OIIPCRA
5. Institutional Strengthening & Capacity Building Expert, OIIPCRA

The Committee shall co-opt any additional member, if needed, with the approval of the Project Director, OCTDMS.

Monthly review will be held at State Project Unit to monitor the progress of work.

10 Work Location & other details

The project area of study is located in 15 districts of Odisha as indicated in paragraph-1 above.

11 Communication Address

The Expression of Interest to be submitted by speed post/Courier to the following address;

Project Director, OCTDMS

7th Floor, Rajiv Bhawan,

Bhubaneswar-751001

Ph: 0674-2391363
