



**Department of Water Resources**  
**Odisha Community Tank Development Management Society**  
(Funded Activity: GCF-FP045)

7<sup>th</sup> Floor, Rajiv Bhawan, Bhubaneswar-751001  
Ph. 0674-2542421, E-Mail: spuoiipcra.od@gov.in



**Invitation for Expression of Interest for Engagement of Consultancy Services**

**Date: 21/10/2021 GCF-Eol-04/2021**

Project Director, Odisha Community Tank Development and Management Society (OCTDMS), DoWR invites Expression of Interest from eligible Consultancy Firms for the following consulting services for Ground water Recharge and Solar Micro Irrigation to ensure food Security and enhance Resilience in Vulnerable Tribal areas of Odisha (Funded Activity:GCF-FP045).

**1. Preparation of Crop Water Budgeting, Water Sharing Master Plan And Livelihood Development Plan For GCF.**

Eligible consultancy firms with desired qualification and experience as per details of "Eol" & Terms of Reference (ToR) available in Govt. website [www.odisha.gov.in](http://www.odisha.gov.in) and [www.dowrodisha.gov.in](http://www.dowrodisha.gov.in) under the link advertisement may apply. "Eol" document must be delivered in the address given below by Speed post/ Registered post/ Courier Services addressed to Project Director, OCTDMS, 7th Floor, Rajiv Bhawan, Bhubaneswar 751001, Odisha. Submission of "Eol" in any other mode is not acceptable. The consultancy firms may participate for the consultancy services based on their eligibility criteria set forth in ToR. The last date for receipt of Eol is **20.11.2021** up-to **15:00** hours. It will be opened on the same day at **15:30** hours. The Selection Procedure will be governed by World Bank Procurement guidelines of **CQS** method.

The authority reserves the right to cancel the process of selection of consultants without assigning any reason thereof. The authority in no way will be responsible for any postal delay.

  
Project Director, OCTDMS

Memo No. 3428 /EOI Date: 21.10.21

Copy in duplicate along with soft copy of the tender notice submitted to the Head Portal, Information & Technology Department for exhibiting the advertisement in the website of the Government as suggested in IT Department Lr.No.221/31.8.2002 addressed to all Secretaries.

Enclosure: 1 CD

  
Project Director, OCTDMS

Memo No. 3429 /EOI Date: 21.10.21

Copy submitted to the Superintendent, Government Press, Madhupatna (Odisha), Cuttack with a request to publish this Notice in the next issue of the Odisha Gazette.

  
Project Director OCTDMS

Memo No. 3430 /EOI Date: 21.10.21

Copy to the Deputy Secretary to Government of Odisha, Department of Water Resources, Rajiv Bhawan, Bhubaneswar for kind information.

  
Project Director-OCTDMS

Memo No. 3431 /EOI Date: 21.10.21

Copy submitted to the Chief Engineer, Monitoring & Evaluation, Water Resources, Odisha, Secha-Sadan, Bhubaneswar for kind information with a request to arrange for publication of the IFB Notice in the DoWR, Odisha website on or before 5.12.2020.

  
Project Director-OCTDMS

Memo No. 3432 /EOI Date: 21.10.21

Copy forwarded to the PS to Principal Secretary to Govt, DoWR for kind information of the Principal Secretary, DoWR/ PS to Principal Secretary to Govt, A&FE for kind information of the Principal Secretary, A&FE/ PS to Commissioner-cum-Secretary to Govt, F&ARD for kind information of the Commissioner-cum-Secretary to Govt, F&ARD.

  
Project Director-OCTDMS

Memo No. 3433 /EOI Date: 21.10.21

Copy submitted to the Revenue Divisional Commissioner, Southern Division, Berhampur/ Central Division, Cuttack/ Northern Division, Sambalpur for kind information.

  
Project Director-OCTDMS

Memo No. 3434 /EOI Date: 21.10.21

Copy submitted to the Engineer-In-Chief, Water Resources Department, Odisha, Bhubaneswar/ Chief Engineer, Minor Irrigation, Odisha, Bhubaneswar/ Chief Engineer & Basin Manager, RVN Basin, Berhampur/ Tel Basin, Bhabanipatna/ Subarnarekha & Budhabalang Basin, Baripada/ Baitarani Basin, Keonjhar for kind information.

  
Project Director-OCTDMS

Memo No. 3435 /EOI Date: 21.10.21

Copy to the Collector & District Magistrate, Nuapada/Kandhamal/ Kalahandi/ Balasore/Bhadrak/Gajapati/ Ganjam/ Bargarh/ Bolangir/ Boudh/ Jajpur/ Sonapur/ Nabarangpur/ Mayurbhanj and Keonjhar for kind information.

  
Project Director-OCTDMS

Memo No. 3436 /EOI Date: 21.10.21

Copy to Superintending Engineer, CMIC, Bhubaneswar/SMIC, Berhampur/ KBK MIC-1, Bhawanipatna/ KBK MIC-2, Jeypore/ NMIC, Sambalpur/ EMIC, Keonjhar under Minor Irrigation Organization for information.

  
Project Director-OCTDMS

Memo No. 3437 /EOI Date: 21.10.21

Copy forwarded to the Executive Engineer, Minor Irrigation Division, Balangir/ Kalahandi/ Nabrangpur/ Bhanjanagar/ Ganjam-I/ Ganjam-II/ Gajapati/ Kandhamal/ Boudh/ Baripada/ Jashipur/ Anandpur & Keonjhar for information and necessary action for wide circulation.

  
Project Director-OCTDMS

Memo No. 3438 /EOI Date: 21.10.21

Copy to Executive Engineer, Monitoring, OIIPCRA/ Procurement, OIIPCRA/ Manager, Accounts/ Concerned File.

  
Project Director-OCTDMS

Memo No. 3439 /EOI Date: 21.10.21

Copy to OCTDMS Notice Board for wide circulation.

  
Project Director-OCTDMS

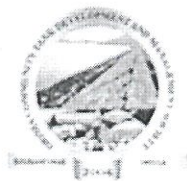


GOVERNMENT OF ODISHA

DEPARTMENT OF WATER RESOURCES

## TERMS OF REFERENCE

Country:	India
Project Name:	Ground Water Recharge and Solar Micro Irrigation to Ensure Food Security and Enhance Resilience in Vulnerable Tribal Areas of Odisha (Funded Activity: GCF-FP045)
Title of Consulting Services:	Preparation of Crop Water Budgeting, Water Sharing Master Plan And Livelihood Development Plan for GCF.
Contract Type:	Consultant's Qualifications Selection (CQS) (Lump-Sum)
Date of Issue:	21.10.2021



ODISHA COMMUNITY TANK DEVELOPMENT AND MANAGEMENT SOCIETY (OCTDMS)

7<sup>th</sup> Floor, Rajiv Bhawan, Bhubaneswar-751001

## Terms of Reference

### **Crop Water Budgeting, Water Sharing Master Plan And Livelihood Improvement Plan For GCF Projects.**

#### **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 Sonepur to lap 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**

- 2.1 Crop water budgeting plan based on agro-climatic zones in 15 GCF project districts as a whole.

- 2.2 Water sharing master plan for each tank taken up under GCF.
- 2.3 Livelihood development plan for each tank taken up under GCF.
- 2.4 Software based tool for preparation of these three plans.
- 2.5 Interaction with line department and key stakeholders during the course of the project.
- 2.6 The SPMU of GCF will share / furnish all the required information to the consultant.
- 2.7 The plan shall cover all the activities specified in the Project Concept Note (PCN), DPR, FAA & SA.
- 2.8 The agency shall consult with line departments for preparing the details of activities and modalities.
- 2.9 The agency shall take the opinion of experts in the respective fields as suggested by PMU of GCF project of UCIDMS.
- 2.10 The agency shall keep the policies of the State Govt. / GoI/ NABARD in the preparation of developmental plan.
- 2.11 Only authenticated information shall be used in preparation of project developmental plan.
- 2.12 The agency shall maintain the confidentiality and secrecy of the information relating to the contents of the developmental plan.
- 2.13 The plan will broadly cover about the project activities to be undertaken i.e crop water budgeting for improving water efficiency, water sharing master plan, livelihood promotion through backyard poultry, goatry, fishery and other agricultural allied activities, credit linkages.
- 2.14 The baseline data of tanks and sample survey data collected under GCF will be used as per requirement in preparation of livelihood improvement plan and water sharing master plan.

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

#### **3.1 Crop Water Budgeting**

##### **Detailed outline of the tasks to be undertaken**

The agency shall find out the available water resources in the study area.

- 3.1.2 The agency shall estimate the quantity of water used for various purposes in the study area and also the water balance.

- 3.1.3 The agency shall find out the water requirement for crops to be grown.
- 3.1.4 The agency shall purpose various options for water conservation and management, shifting of more water consuming crops to less water consuming crops, suitable irrigation methods, different Agronomic practices etc.
- 3.1.5 The agency shall carry out crop water budgeting in 21 MIPs, 3 in each of the Agro climatic Zones spread over the 15 GCF project districts involving various stake holders in project area.
- 3.1.6 The agency shall capacitate(200no,s) of Pani-Panchayat members and Jala-Mitras regarding crop water budgeting, increase water use efficiency, water harvesting structures and best fit Agronomic practices; and submit a detailed training module on crop water budgeting.
- 3.1.7 The agency shall devise proper methodology for efficient irrigation methods to be adopted in GCF project districts basing on the information of available ground water and surface water.
- 3.1.8 The agency shall purpose suitable crops to be grown in the study area basing on the water availability, soil type, climatic condition, demand for the crop, so that the water use efficiency, crop productivity and cropping intensity will increase, farmer will get more benefit from the crop.
- 3.1.9 The agency shall deploy required field staffs with desired experience and expertise and train the team on both the technical aspect for carrying out data collection and interaction with Pani-Panchayat members and Jal-Mitras community members and Leaders and other Stake holders in the study area during the process of Crop Water Budgeting exercise.
- 3.1.10 The agency shall clean all the data collected analyze it, prepare and submit a final report.
- 3.1.11 The agency shall carry out a rigorous quantitative impact evaluation to estimate the impact of crop water budgeting in GCF project interventions.

## **3.2 Water Sharing Master Plan**

### **Detailed outline of the tasks to be undertaken**

- 3.2.1 The agency shall find out the solution for scientific management techniques of allocating irrigation water based on the individual crop water requirement, etc under different soil and climatic condition with an aim to achieve maximum

crop production per unit of water applied over a unit area in unit time for GCF Project districts. In the tank command in 21 MI tanks chosen for crop water budgeting.

- 3.2.2 The agency shall do a comparative analysis on different methods to be adopted for irrigation (basin / furrow / sprinkler / drip method) depending on the type of soil, agro-climatic situation, type of crop availability of Ground Water through field surveys.
- 3.2.3 The agency shall assess suitability of lands to be irrigated though interacting with Jal-Mitras and communities within the area to be developed.
- 3.2.4 The agency shall suggest site for construction of structures such as water abstractions from the source tank by collecting the information from Jala-Mitras on past experience with floods, areas with potential flooding.
- 3.2.5 The agency shall train master trainers (200 nos.) on water sharing master plan preparation & submit a detailed training module on water sharing master plan.
- 3.2.6 The agency shall suggest alternate irrigation methods to farmers and the implications of each through land redistribution, water resources potential, plot sizes and total area to be irrigated, cropping programmes, labour requirements, capital costs, operation & maintenance costs, environmental aspects, land use patterns and other considerations with an option to adopt preferably the one which serves the majority and has least risks.

### 3.3 **Livelihood Development Plan**

#### **Detailed outline of the tasks to be under-taken**

- 3.3.1 The agency shall bring about a structured livelihood development plan in **75** tank areas in different districts, **05** in each district looking at the problems at the community level and ultimately energize a social process to enhance the quality of human resources and empower the local landless and women members covered under capacity building for off-farm initiatives in the tank command area of GCF Project districts.
- 3.3.2 The agency shall focus to enhance productivity and incomes of rural landless poor women through upgrading skills in selected self-employment occupations. In most these GCF districts the family practices distress migration, livelihood patterns should be timed to generate income that allows all members of the family to stay in village.

- 3.3.3 The agency shall give importance on off-farm activities for women like animal rearing etc.
- 3.3.4 The agency shall collect appropriate and feasible non-farm sector activities such as Handloom Weaving, Cotton & Wool, Food products & Spices, Honey and Medicinal products, Painting and Greeting cards, Paper bags / Jute bags, Artificial Jewellery, Soap and Phenyl making, Candle and Agarbatti making, Bamboo products, Vermi compost, livestock, Dairy, backyard poultry, Goat and sheep rearing, Fish farming, Bee keeping, Seri culture, Mushroom cultivation, Leaf plates preparation from Sal leaf and train the SHGs and Jala-Mitras for enhancing their livelihood.
- 3.3.5 The agency shall give importance on food-security related interventions such as a kitchen garden, fish pond, cattle rearing, raising poultry and producing honey to be achieved through convergence with existing schemes of the Govt.

#### 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 (**2017-18, 2018-19 & 2019-20**) should not be less than **50 Lakhs INR**.
- 4.3 Agency should have successfully executed similar nature of assignments for:
- At least one project where crop water budgeting has been taken up in water resources/ agriculture or similar field.
  - At least one project on Livelihood development plan and water sharing master plan or similar work.
  - Experience in Climate Resilience in Agriculture and Water sector is desirable.
- 4.4 Prior experience of working with donor agency like the World Bank, ADB, UN Agencies, JICA, GCF, Govt. etc. in Agriculture and Climate Change sector will be preferred.
- 4.5 Prior experience of preparing crop water budgeting based on agro-climatic zone, water sharing master plan and livelihood development plan in Agriculture/ Water Resources Sector.
- 4.6 The agency should not be blacklisted with the Govt. of Odisha/ NABARD/ World Bank/GCF/ Other UN agencies 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	No. of years of Experience
1	Team Leader	S/he should have an advanced degree (Ph. D preferred) in Agriculture/ Horticulture/ Civil Engineering or a related discipline. He/ She should have at least 10 years of experience in quantitative evaluation. Specific experience in monitoring and evaluation of public policy programs for at least 5 years would be preferable.	10 years of Experience post Qualification.
2	One Agriculture Expert	PG in Agriculture / Agronomy and should have at least 05 years of post-qualification with 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	05 years of Experience post Qualification.
3	One Fisheries Expert	Graduate in Fishery Science and should have at least 05 years of post-qualification with experience in fishery related farms, organizations / NGO dealing with fishery activities and management.	05 years of Experience post Qualification.
4	Hydrology / Ground Water Recharge Expert	M-Tech with one subject in Hydrology / Ground water Hydrology and should have at least 05 years of post-qualification work experience in Water Resources / Ground Water Development Projects.	05 years of Experience post Qualification.
5	MIS/GIS Expert	Masters' Degree on Geology/ Engineering/ Geography / Environmental Science/ Marine Science with Diploma/ Certificate course in Remote Sensing & GIS/ Geo-Informatics with 3 years' experience in data analysis or supervision of household surveys or rigorous	3 years of Experience post Qualification.

		(experimental or quasi experimental) impact evaluations. Knowledge on use of GIS/MIS related hardware and software and its application in Watershed related activities and agriculture related activities.	
6	Data Analysts	S/he should have a degree in economics/statistics/publicpolicy/development studies or a related discipline with 3 yearsexperience in data analysis or rigorous (experimental or quasi experimental) impact evaluationsand should have experience working on statistical software packages like – SPSS, R, STATA, CS–PRO, Atlas etc.	3 years of Experience post Qualification.
7	Social/ Institutional development Expert	MA/MSW/Master in Rural Management/Master in Rural Development with 5 years' experience in rural management, livelihood development plan or rigorous (experimental or quasi experimental) impact evaluations.	5 years of Experience post Qualification.
8	Enumerators	The minimum education requirement for enumerators is a bachelor's degree (i.e. 2 years of study after completion of higher secondary / 12 <sup>th</sup> standard). Enumerators should have experience in data collection for large-scale household surveys. Regional experience and knowledge is preferred.	2 years of Experience post Qualification.

## 6 Deliverables & Payment Terms

### A.

- i. Prepare and submit the detailed crop water budget exercise for 21 individual MIPs and for 7 Agro climatic zones containing detailed methodologies adopted, different stakeholders consulted, interventions collected and outputs obtained.
- ii. The report for 21 MIPs should contain
  - a. Source wise water available for cultivation;
  - b. crop season wise water requirement;

- c. suitable cropping system for the area depending upon the various soil types(texture wise) present in the area, amount of water available for irrigation, prevalent climatic condition of the area , Surface water status & availability, , Ground water status and its replenish-able availability for irrigation.
  - d. Efficient water management methods that can be adopted in the area to enhance Water Use Efficiency (WUE), so that more area can be brought under irrigation with the limited available water in the project area.
  - e. scheduling of irrigation for crops specified in the cropping systems
- iii. Agro climate zone wise crop water budgeting report should contain the information as in point (ii)
  - iv. if there is a negative balance (deficit) of water observed during crop water budgeting exercise, then the agency shall give the strategies to be taken up to correct the deficiency and if there is a positive water balance, then the agency also shares the strategies for efficient utilization of the excess water in convergence with various schemes of the government.
  - v. The agency shall make and submit a manual tool and a digital tool containing all the steps required for crop water budgeting with a defined outcome in a simple way, which can be used easily by farmers during farming.
  - vi. Propose suitable institutional arrangement at the community level for the sustainability of the practices
  - vii. The agency shall prepare and submit training module for Para workers like Jal-Mitras, community members those will be used as trainers for farmers and also training module for farmers and also small booklet, leaflet and banners in local language for dissemination among the local farmers and other community members.
  - viii. The agency shall also provide the client all the raw data/information collected during the exercise.
  - ix. The agency shall submit hard copies of 5 sets of draft report(s), (3 Black & White) and 30 sets of final report (Colour) along with the original manuscripts of all databases and also the soft copy of final report along with databases in MS Excel sheet.

- B. i. Prepare & submit the detailed water sharing master plan for 21 MI tanks in agreed format along with digital tool for water sharing master plan preparation.
- ii. Train 200 master trainers & submit detailed training modules for preparation of water sharing master plan
- C. Detailed livelihood Development Plan in 75 tanks areas in 15 Districts.

<b>Payment Schedule</b>				
<b>Sl. No.</b>	<b>Description of Work</b>	<b>Schedule Dates of submission (from Date of signing of contract)</b>	<b>Payment schedule</b>	<b>Remarks on release of payment</b>
1	Inception report	30 Days	10%	On acceptance of key indicators, methodology for 3 items separately by the client.
2	1 <sup>st</sup> draft report on crop water budgeting & water sharing matter plan in 7 MIPs; & and livelihood development plan in 30 MIPs.	60 Days	30%	After scrutiny of draft reports and interaction with the consultants during workshop and suggestions thereof to the consultant & acceptance of reports.
3	1 <sup>st</sup> draft on crop water budgeting, water sharing matter plan and livelihood development plan sharing workshop at the OCTDMS-SPMU level			
4	2 <sup>nd</sup> draft report on crop water budgeting, water sharing matter plan in 7 MIPs and livelihood development plan in 30 MIPs.	90 Days	30%	After scrutiny of final draft and interaction with the consultants during workshop and suggestions thereof to the consultant & acceptance of reports.
5	2 <sup>nd</sup> draft on crop water budgeting, water sharing matter plan and livelihood development plan sharing			

	workshop at the OCTDMS-SPMU			
6	3 <sup>rd</sup> draft report on crop water budgeting, water sharing matter plan in 7 MIPs and livelihood development plan in 15 MIPs.			On acceptance of final crop water budgeting report.
7	3 <sup>rd</sup> draft on crop water budgeting, water sharing matter plan and livelihood development plan sharing workshop at the OCTDMS-SPMU	120 Days	30%	After acceptance of final crop water budgeting report and on acceptance of final water sharing master plan and livelihood development report.

### 7 Duration of Assignment and Cost of the project

The assignment would be for **120 days** from the date of signing of contract and tentative Cost of the assignment is **65.00 Lakhs**.

### 8 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), OCTDMS
3. Additional Project Director, Agriculture, OCTDMS
4. Executive Engineer, Monitoring, OCTDMS
5. Project Finance Officer, OCTDMS
6. Executive Engineer, GCF.
7. Executive Engineer, Procurement

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.

### 9 Work Location & other details

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

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

**Project Director, OCTDMS**


7<sup>th</sup> Floor, Rajiv Bhawan,

Bhubaneswar-75100

Phone No-0674-2512421, E-Mail Id:-spuoiipcra.od@gov.in

J.K. Prasadasshini  
21.10.2021

Approved.

  
21.10.21