

**[Standard Operating Procedure For Jal Mitras In GCF
Project “Ground Water Recharge And Solar Micro
Irrigation To Ensure Food Security And Enhance
Resilience In Vulnerable Tribal Areas Of Odisha”]**

Introduction

Under GCF funded project FP045 "Ground Water Recharge and Solar Micro Irrigation to Ensure Food Security and Enhance Resilience in Vulnerable Tribal Areas of Odisha", there is a provision for training and empowerment of 20000 Jal Mitras to function as community level para professionals for certain activities identified in the GCF funded project.

Under this project, about 10,000 community tanks (1000 under Minor Irrigation and 9000 under Department of PR & DW) spread across 15 Districts Baragarh, Bolangir, Boudh, Gajapati, Kalahandi, Kandhamal, Keonjhar, Koraput,, Malkangiri, Mayurbhanj, Nabarangpur, Nuapada, Rayagada, Sambalpur and Sonepur will be taken up to enhance ground water recharge by installing recharge shafts to provide Micro Irrigation on pilot basis using Solar pumps. The project aims to ensure Water and food security under climate resilient livelihood Interventions.

Total Project Cost: Rs,1097.56Cr with the following break-up

Govt. Of Odisha Contribution (MGNREGA Convergence) : Rs.777.05 Cr

GCF Contribution as grant: Rs.226.76Cr

Community Contribution: Rs.93.75Cr

2.Major activities proposed in this project are

- 1.Sub-surface conservation of water in aquifers by construction of recharge structures in 10000 tanks
 - 2.promotion of solar pump based micro irrigation in 1000 number of tank area
 - 3.training of 20000 Jal Mitras
 4. training of 300000 community members including water user association members in the tank command for crop water budgeting, efficient water use, climate resilient agriculture, horticulture practices
 5. training of 150000 landless, and vulnerable women members on livelihood activities in farm and non-farm activities
 - 6.training of Farmer collectives, SHG, Farmer Producer Groups and FPCs on enhanced skills for improving their capacity
 - 7.training of 2000 Jal Mitras in repair and maintenance of solar pumps
- The project shall be implemented in 5 years through 2020 to 2025.

3.Expected results to be achieved through this project

- (i) Augmentation of ground water recharge to improve water table and water quality for health and well-being of about 5.2 million vulnerable communities through water security and contribute to the overall plan of the total ground water recharge of estimated at 1076.32 MCM through installation of Ground Water Recharge Shaft (GWRS) in 10,000 tanks which includes about 1000 tanks of Minor Irrigation (under Water Resources department.) and 9000 tanks of PR&DW department.
- (ii) Improved food security through resilient crop planning through micro- irrigation to be made available by construction/activation of 1.5 lakh dug-wells/ tube wells.
- (iii) Use of solar pumps for irrigation is not only improving energy access but also will be part of low emission climate resilient crop planning strategy of the state. Installation of Solar Pumps in 1000 demonstration ponds to achieve energy saving of 3.27 million KWhr per year and avoid CO2 emission of 2614 tonnes/year as mitigation co-benefit under this adaptation project.
- (iv) Build knowledge and improve the capacity of the farmers/water users through intensive on-farm development of horticulture activities/ marketing linkages strategies by intensive training programmes.

In the first review meeting held on 19.01.2021 under chairmanship of Principal Secretary, DoWR, it was decided that a guideline shall be prepared for selection of Jal Mitras basing on their interest, experience, attitude from members of SHGs under OLM & Mission Shakti, Krushak Sathis, Krishi Mitras, Prani Mitras members of WUAs out of which 50% of the Jal Mitra should be women. A sub-committee with PD, OCTDMS and Director, Special Projects shall put up a guideline for selection and engagement of Jal Mitras

In this meeting, it was suggested by the Principal Secretary, DoWR to rename "JAL SATHI" (as already formed under H & UD department for a different purpose) as "JAL MITRA" for GCF Project.

Further, to take up training of jal Mitras, a consultancy will be engaged to develop the training modules, and WALMI has been incorporated into this project to complete the training activities of Jal Mitras.

4.Definition of Jal Mitra

Jal Mitra refers to the community level para-professionals selected as per the procedure detailed in the SOP under this project, who have volunteered to be trained under this project, and to willingly support in implementation of GCF Project through carrying out the activities outlined here, or subsequently communicated to them under this project.

5.Selection procedure

The Jal Mitras will be selected in the procedure as described below.

For each MI/PR tank taken up under GCF project, two no of Jal Mitra will be selected, one male member and one female member

He/she must be a resident/voter of the GP to which the tank belongs, and he/she should be staying in the tank command or in the village where the tank is located.

6. Eligible persons to be Jal Mitras

- The self-employed employees(SEMs) engaged by GPs under the guidance of RWSS for tubewell maintenance and pump house operation of rural piped water supply projects
- Elected members/past members of pani panchayats of the tank project
- Krushi Mitra/Prani Mitra/Udyog Mitra/CRP engaged under OLM and working actively for SHG/CLF/GPLF
- Mission Shakti SHG President/Secretary/active members belonging to the tank village
- VRP engaged under MGNREGS for social audit under MGNREGS
- Labor leader (Gaon Sathi/Mate)/bare foot technician belonging to the tank village
- Progressive farmers of the village or tank command area
- Members of the Village Water & Sanitation Committee

The GPLF constituted under OLM will nominate two such eligible persons, one male and one female to act as Jal Mitra under the GCF project. In case GPLF is not formed, the SHG having highest turnover in last two years in the village will nominate the jal mitras out of the eligible persons.

Under the project, there is no honorarium for Jal Mitras, rather they will be trained appropriately to enhance their capacity as para-professionals and they are expected to volunteer to help the BDO and GCF project team in successfully completing the identified activities. They will act as change agents for water efficient climate smart practice promotion and in ensuring sustainability of ground water recharge through recharge structure maintenance.

7. Activities of Jal Mitras

Jal Mitras shall act as grassroot level para-professionals to provide the basic contours of self-management and are critical for the sustainability of the programme for enabling self-management and cost recovery, efficient water use and crop choice. Jal Mitras selected shall be engaged at the community level in various activities of the GCF Project.

The interventions to be carried out by Jal Mitras are as follows:-

7.1 Baseline Survey

Jala Mitras shall facilitate interaction with the villagers and give inputs to the SPMU and consultant for carrying out Baseline study for 10,000 tanks. Based on the social, environmental, hydrological and gender sensitive data, detailed intervention and training programme on livelihood interventions, water use efficiency will be developed for the various stakeholders identified under the project.

7.2 Maintenance of Ground Water Recharge System

A recharge shaft as concrete adaptation measure will be constructed in the community ponds to ensure the aquifer recharge under the project. Normally shallow water bodies like tanks or ponds serve as good rainwater harvesting structures but their contribution towards ground water recharge is quite less due to presence of low permeable soil layer in between the tank bed rendering the tank completely unsuitable for ground water recharge. By constructing recharge wells inside the tank, the connectivity between the water body and the underlying aquifers system can be established bypassing the soil layers. Ground Water Recharge System (GWRS) consists of minimum two or more number recharge wells of (RW) suitable size constructed around the water body depending on the pondage area. These wells during rainy season (June-September) provide an easy passage of excess rainwater to the underlying aquifers system through a filter pack of pebbles / gravels. The construction of RWs (made of precast RCC rings) is very simple and similar to the construction of any open well. These RWs are so designed that the excess rainwater / runoff from the tank during the rainy season will be diverted to underground aquifers for recharge. At the end of rainy season, the average water level of at least 1.5 m in the tank can be maintained for pisciculture / community use. These recharge structures will be constructed through tender process under the supervision of field officers of Minor irrigation and Panchayati Raj Department.

7.3. Maintenance & Operation of Solar Pumps

Under this project, 1000 solar pumps will be installed for optimal use of sub-surface water, and for each such solar installation, two no of Jal Mitras will be trained and certified for operation and maintenance of solar pumping system. This planned skill building of 2000 will play a lead role in the demonstrative effect of 1000 solar pump sets and its utility will transform the solar market in the state which has a very low base.

It will also help in developing a total eco-system and supply chain. The certified professionals (Jal Mitras) will reduce the transaction cost and develop the ecosystem for channel partners/ distributors of the solar pumps and they will have gainful engagement based on the experience they gain from the project. A separate SOP for solar pump installation will be developed through OREDA for this purpose.

7.4 Capacity Building & Training of Jal Mitras

GCF fund will be used to develop capacity of the para-professionals (Jal Mitras) at village level. The Jal Mitras will be trained with all aspects of crop-water management and budgeting. Capacity Building & Training of Jal Mitras will empower the Pani panchayats and help in promotion of for climate smart agriculture through water use efficiency. The Jal Mitras will help in vulnerability reduction by identifying such vulnerable group for various livelihood training. Jal Mitras will help the community in identifying indigenous communities, women, SHGs for various off-farm income generation options.

The detailed training to Jal Mitras will cover training for systematic recording of the recharge in tanks and benefits.

7.5. Community Monitoring at the pani panchayat level/tank level

Monitoring the GCF Project is important from both adaptation and mitigation point of view. The project monitoring shall be done by Jal Mitras at Pani-Panchayat level. The Jal Mitras will collect data to know the sub surface recharge through data recording of observation wells. Jal-Mitras will be empowered to assist scientific modelling of ground water recharge and usage, water quality etc. This will enrich the climate information. The trained Jal Mitras can act as formal investigator for CGWB and Director, Ground Water Development.

7.6. Monitoring of Ground Water Level

Jala-Mitras will assess the Ground water level and recharge level post installation of GWRS in 10000 tanks. For this activity, appropriate technical training shall be imparted to the Jal-Mitras. By this way of monitoring, water quality can be enhanced and many water borne disease can be prevented and peoples' health quality can be improved, and community will be conscious about ground water conservation and sustainable use..

7.7. Assessing village Water Resources

Jal Mitras will list out all the local water bodies and their use in their community. They will visit each water body to correct field information. In Ground Water Recharge System, identify possible ground water inflow and recharge directions. Jal Mitras shall discuss variations in water levels and ground water recharge system depth in different parts and directions of the village. This will give an idea about the occurrence of ground water from a water table and aquifer type point of view.

7.8. Monitoring of Water Quality

Jal Mitras will be given training about water quality measurement by asking farmers about the suitability of water quality for crops they are growing, taste of water or by measuring total dissolved solid concentration with the help of TDS meter.

7.9. Planning and Managing Village Water Resources

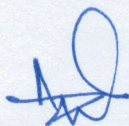
- After completion of training successfully Jal Mitras will be involved in Ground water recharge activities and Soil moisture conservation activists to spread the message of water conservation and sustainable use.

7.10. Creating Awareness and Mobilising Community

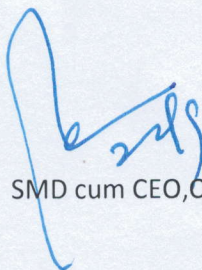
The Jal Mitras will be trained about basics of aquifer such as hydrologic cycle, rainfall, origin of ground water, water table, ground water quality. They should be aware about the different fundamental parameters like static water table, pumping water level, drawdown, yield of bore well, capacity of pump, fluctuation of water table between pre and post-monsoon. Village wise water level and rainfall data shall be collected in GCF project districts. From these data, farmers can do water balance studies of their field and can do crop water budgeting and ultimately decide which crop has to be taken up in their field. Ground water management can be carried out effectively through active participation of Jal Mitras by way of involving villagers, SPMU and other stake holders.



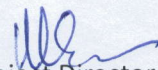
Director
Drinking Water &
Sanitation



Director
Special Projects



SMD cum CEO, OLM



Project Director
OCTDMS/GCF

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