

Terms of reference (ToRs) for the procurement of services below the EU threshold

Introducing Solar Pay Per Use Irrigation Models in Mint Cropping System in Barabanki, Uttar Pradesh	Project number/ cost centre: 12.1003.8-239.01
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0. List of abbreviations

AVB	General Terms and Conditions of Contract (AVB) for supplying services and work 2022
ToRs	Terms of reference
CV	Curriculum vitae
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ODA	Official Development Assistance

1. Context

Mint farmers in Uttar Pradesh face a number of challenges ranging from a lack of access to knowledge on how to manage farms effectively, poor availability of quality inputs (especially high-quality mint stolon's), scientific farming and processing technologies, access to markets as well as financial products & services. These challenges prevent farmers from increasing their productivity and incomes in the long run. In addition, the impact of climate change and global warming is increasing, bringing new risks and volatility in farming system. Changing weather scenario such as uncertainty in the monsoon, prolong dry spells, flash floods, decreasing ground water table etc. have become new normal in Uttar Pradesh.

Due to these challenges, farming income from mint cropping system including rice and potato crops, especially for small-holder farmers, is plummeting rapidly. Seeing the bleak future, youth are often not interested to continue farming activities.

Mint is a highly water-intensive crop and requires an average of 10-12 irrigations to reach the maturity stage. Farmers irrigate mint fields at an interval of 10 days until March, although the frequency of irrigation increases with the increase in temperature after March. One irrigation takes approximately 7 hours, and a minimum water level of approximately 100 mm is required for an adequate mint yield. The management of irrigation has become increasingly difficult due to the increasing cost of diesel. During the past years, the price of diesel has increased from 75 INR/ litre to 100 INR/litre, while the market price for mint oil remains the same in last couple of years. This situation has resulted in reduced profit/ margins for farmers.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and two international companies under developPPP.de framework have made a strategic alliance and is expected to directly benefit small-holder farmers by enhancing production systems and strengthening social capital through Farmer Producer Organisations (FPO), while contributing to a comprehensive transformation of mint farming sector in Uttar Pradesh, India.

The project plans a holistic approach to strengthen the resilience of 10,000 farmers and their families. It scales-up successful activities that combines interventions that strengthen climate and financial resilience “on farm” as well as with activities “off farm” that improve livelihoods and create financial resilience.

It is expected that the project interventions will bring fundamental changes to the existing system and structural changes to achieve the desired impact on mint production and the supply chain.

An Ag-Tech agency is required to introduce innovative and entrepreneurial solar irrigation solutions and services for Mint, Rice and Potato crops covering up to 750 farmers in Barabanki district of the Uttar Pradesh.

The objectives of the assignment are:

- a. To set up 50 solar irrigation pumps of 3 HP each in combination of submersible and surface pumps.
- b. To create 15 individual farmer-based enterprises preferably 1-2 women lead based on solar “pay per use” irrigation models.
- c. To reduce the cost of irrigation and migrate at least 750 farmers from diesel pump-based irrigation to solar irrigation system.

2. Tasks to be performed by the contractor.

The contractor is responsible for providing the following services:

- A. Feasibility of introducing solar irrigation system based on local agricultural needs and water resource availability.
- B. Investment in solar irrigation equipment and its installation including borewell construction, testing, and maintenance of irrigation systems.
- C. Identification of suitable entrepreneur farmers to deliver the water services to neighbouring farmers.
- D. Development of payment mechanisms and pricing models for solar irrigation services
- E. Training of entrepreneur farmers on system operation and maintenance.
- F. Development of business plan for each solar pay per use entrepreneur
- G. Monitoring and evaluation of project outcomes and impacts.
- H. Liaison with state government and other stakeholders for solar irrigation subsidies for individual benefit of the farmers beyond entrepreneur model

Certain milestones, as laid out in the table below, are to be achieved by certain dates during the contract term, and at locations:

Milestone / Deliverables	Deadline/place/person responsible
Feasibility of solar irrigation systems in 4 blocks of the project district	31 August 2024 / 31 October 2024 / 31 December 2024 / 28 February, 2025
Identification and onboarding of entrepreneur farmers	30 September 2024 / 30 November 2024 / 31 January 2025 / 31 March, 2025
Installation of at least 10 solar pumps including borewell construction and testing in each quarter of the project duration	31 October 2024 / 31 December 2024 / 28 February 2025 / 30 April, 2025
Business plan for each solar pay per use entrepreneur	31 October 2024 / 31 December 2024 / 28 February 2025 / 30 April, 2025
Training of farmers on system operation and maintenance in batches per block	31 October 2024 / 31 December 2024 / 28 February 2025 / 30 April, 2025
Project impacts reports per block	31 December 2024 / 28 February 2025 / 30 April, 2025, 30 June 2025
Final report and scaling up strategies beyond project period	30 November, 2025

Period of assignment: From 01 July 2024 until 10 December, 2025.

3. Concept

In the bid, the bidder is required to show how the objectives defined in Chapter 2 are to be achieved, if applicable under consideration of further specific method-related requirements (technical-methodological concept). In addition, the bidder must describe the project management system for service provision.

Technical-methodological concept

Strategy: The bidder is required to consider the tasks to be performed with reference to the objectives of the services put out to tender (see Chapter 1). Following this, the bidder presents and justifies the strategy with which it intends to provide the services for which it is responsible (see Chapter 2).

The bidder is required to describe the key **processes** for the services for which it is responsible and create a schedule that describes how the services according to Chapter 2 are to be provided. In particular, the bidder is required to describe the necessary work steps and, if applicable, take account of the milestones and contributions of other actors in accordance with Chapter 2.

The bidder is required to describe its contribution to knowledge management for the partner and GIZ and promote scaling-up effects (**learning and innovation**).

Other specific requirements

The bidder is required to explain its approach for coordination with the GIZ project.

- The contractor is responsible for selecting, preparing, training and steering the experts (international and national, short and long term) assigned to perform the advisory tasks.
- The contractor makes available equipment and supplies (consumables) and assumes the associated operating and administrative costs.
- The contractor manages costs and expenditures, accounting processes and invoicing in line with the requirements of GIZ.
The contractor reports regularly to GIZ in accordance with the AVB of the GIZ GmbH from 2018.

In addition to the reports required by GIZ in accordance with AVB, the contractor submits the following reports:

- Inception report
- Contributions to reports to GIZ's commissioning party
- Brief quarterly or half-yearly reports on the implementation status of the project (5-7 pages)

The bidder is required to draw up a **personnel assignment plan** with explanatory notes that lists all the experts proposed in the bid; the plan includes information on assignment dates (duration and expert days) and locations of the individual members of the team complete with the allocation of work steps as set out in the schedule.

The bidder is required to describe its **backstopping concept**. The following services are part of the standard backstopping package, which (like ancillary personnel costs) must be factored into the fee schedules of the staff listed in the bid in accordance with section 5.4 of the AVB:

- Service-delivery control
- Managing adaptations to changing conditions
- Ensuring the flow of information between GIZ and field staff
- Process-oriented technical-conceptual steering of the consultancy inputs
- Securing the administrative conclusion of the project
- Ensuring compliance with reporting requirements
- Providing specialist support for the on-site team by staff at company headquarters

- Sharing the lessons learned by the contractor and leveraging the value of lessons learned on site

4. Criteria for Eligibility of firms

The Agency should have the following eligibility criteria to carry out the assignment:

- Average annual turnover for the last three financial years should be at least 100,000 Euros.
- Number of employees as on 1st January 2024 should be at least 20.
- The agency must submit a declaration on GWB clauses – refer Annex “Legal Inferences”.
- The agency must have handled at least 2 reference projects on implementation of projects related to “pay per use” model of solar irrigation in India in the last 3 years with a commission value of Euro 20,000.
- Minimum 3 years of experience in providing extension services in agriculture, especially in Uttar Pradesh.
- Capacity to monitor digitally the performance of solar unit installed.
- Inhouse capacity for regular interactions with project farmers.
- Inhouse pool of experts of data science, agronomist, information technology etc.
- Social venture enterprise model
- Regional Experience in North India
- Relevant Official Development Assistance (ODA) experience

4A. Personnel concept

The bidder is required to provide personnel who are suited to filling the positions described, on the basis of their CVs (see Chapter 7), the range of tasks involved and the required qualifications.

The below specified qualifications represent the requirements to reach the maximum number of points.

Team leader

Tasks of the team leader

- Overall responsibility for the advisory packages of the contractor (quality and deadlines)
- Coordinating and ensuring communication with GIZ, partners and others involved in the project.
- Personnel management, in particular identifying the need for short-term assignments within the available budget, as well as planning and steering assignments and supporting local and international short-term experts.
- Regular reporting in accordance with deadlines

Qualifications of the team leader

- Education/training (2.1.1): University qualification / Master’s in Rural Development / International Development / Social Welfare or equivalent

- Language (2.1.2): Good business language skills in English and Hindi
- General professional experience (2.1.3): 20 years of professional experience in the development practices
- Specific professional experience (2.1.4): 3 years in Solar Irrigation promotion
- Leadership/management experience (2.1.5): 5 years of management/leadership experience as project team leader or manager in a company
- Regional experience (2.1.6): 5 years of experience in projects in North India (region), of which 2 years in projects in Uttar Pradesh

Expert 1: Strategy and Partnerships (01)

Tasks of expert 1

- To design the project strategy for pay per use irrigation models
- To liaison with state government and other stakeholders for partnerships
- To review the strategy at regular interval and modify the project design on need basis

Qualifications of expert 1

- Education/training (2.2.1): University qualification / Master's in Business Administration / Entrepreneurship / Social Engineering or equivalent.
- Language (2.2.2): English and Hindi
- General professional experience (2.2.3): 5 years in developing strategies and business plan for social enterprises
- Specific professional experience (2.2.4): 1 years in solar irrigation business models
- Regional experience (2.2.6): 1 years of experience of working in North India

Expert 2: Operations (01)

Tasks of expert 1

- To manage the project operations from identification of entrepreneur farmers until installation and thereafter maintenance of solar pumps.
- To support and monitor the entrepreneur business inflow in terms of cash management.

Qualifications of expert 1

- Education/training (2.3.1): University qualification / Master's in Business Administration or equivalent
- Language (2.3.2): English and Hindi
- General professional experience (2.3.3): 5 years in project management
- Specific professional experience (2.3.4): 2 years in project operations and finance
- Leadership/management experience (2.3.5): 2 years of management/leadership experience
- Regional experience (2.3.6): 1 years of experience of working in North India

Expert 3: Agronomist (01)

Tasks of expert 1

- To understand the local crop specific agri- water needs of the farmers
- To contribute to the feasibility surveys of solar irrigation models
- To provide advisories to project farmers whenever required in context to crop agronomy

Qualifications of expert 1

- Education/training (2.4.1): University qualification / Master's in agriculture / Horticulture / Forestry or equivalent

- Language (2.4.2): English and Hindi
- General professional experience (2.4.3): 5 years in sustainable agriculture
- Specific professional experience (2.4.4): 1 years in promoting rural enterprises
- Regional experience (2.4.6): 1 years of experience of working in North India

Expert 4: Solar Pump Engineer (01)

Tasks of expert 1

- To assess the technical feasibility of each site for solar pump installation
- To prepare the architecture for each solar pump set up
- To test the functioning of solar pump at regular interval and prepare maintenance guidelines

Qualifications of expert 1

- Education/training (2.5.1): University qualification / Bachelor's in Electronics / Electricals or equivalent
- Language (2.5.2): English and Hindi
- General professional experience (2.5.3): 5 years in rural areas for electronics and electrical based assignments
- Specific professional experience (2.5.4): 2 years in installation of solar irrigation pumps
- Regional experience (2.5.6): 1 years of experience of working in North India

Expert 5: Information & Technology (01)

Tasks of expert 1

- To align with digital services provided by project with solar entrepreneur and its beneficiaries
- To provide technical backstopping to farmers for scheduling of irrigation timings through mobile application
- To provide interactive feature in the mobile application for two-way communication in the mobile application
- To develop the web based dashboard for all the sites of operation under solar irrigation

Qualifications of expert 1

- Education/training (2.6.1): University qualification / master's in computer science / information technology or equivalent
- Language (2.6.2): English and Hindi
- General professional experience (2.6.3): 5 years in developing mobile application for consumers
- Specific professional experience (2.6.4): 2 years in developing internet of things in renewable energy
- Regional experience (2.6.5): 1 years of experience of working in North India

Expert 6: Data Management (01)

Tasks of expert 1

- To capture the data from project operations like entrepreneur and its customer details with water discharged through each site
- To guide the project on loopholes in operations after the analysis of the data
- To predict the business viability of each site after a certain period of operation

Qualifications of expert 1

- Education/training (2.7.1): University qualification / Master's in Data Science / Engineering or equivalent
- Language (2.7.2): English and Hindi
- General professional experience (2.7.3): 2 years in data management and analysis
- Specific professional experience (2.7.4): 1 years in data management in renewable energy
- Regional experience (2.7.5): 1 years of experience of working in North India

Expert 7: Impact cum Gender (01)

Tasks of expert 1

- To measure the desired benefits for saving on irrigation cost and ease of irrigation services
- To assess the reduction on carbon emissions
- To capture the impact on women farmers and entrepreneurs for solar pump services

Qualifications of expert 1

- Education/training (2.8.1): University qualification / Master's in Environment / Management / Social Science or equivalent
- Language (2.8.2): English and Hindi
- General professional experience (2.8.3): 5 years in development impact assessment
- Specific professional experience (2.8.4): 2 years in impact assessment in renewable energy / Gender
- Regional experience (2.8.5): 1 years of experience of working in North India

Expert 8: Project Assistant (02)

Tasks of expert 1

- To conduct the field surveys to identify potential sites of installation of solar pumps
- To identify the eligible entrepreneur farmers
- To do networking with potential farmers for solar irrigation
- To regularly monitor the operations of the entrepreneur
- To collect the relevant data from field

Qualifications of expert 1

- Education/training (2.9.1): University qualification / Bachelor's in any discipline
- Language (2.9.2): English and Hindi
- General professional experience (2.9.3): 3 years in development projects
- Specific professional experience (2.9.4): 2 years in rural areas for surveys and networking
- Regional experience (2.9.5): 1 years of experience of working in North India

Soft skills of team members

In addition to their specialist qualifications, the following qualifications are required of team members:

- Team skills
- Initiative
- Communication skills
- Sociocultural competence
- Efficient, partner- and client-focused working methods
- Interdisciplinary thinking

The bidder must provide a clear overview of all proposed short-term experts and their individual qualifications.

5. Costing requirements

Assignment of personnel

Team leader: On-site assignment for 34 expert days

Expert 1: Assignment in country of assignment for 68 expert days

Expert 2: Assignment in country of assignment for 136 expert days

Expert 3: Assignment in country of assignment for 172 expert days

Expert 4: Assignment in country of assignment for 68 expert days

Expert 5: Assignment in country of assignment for 68 expert days

Expert 6: Assignment in country of assignment for 68 expert days

Expert 7: Assignment in country of assignment for 51 expert days

Expert 8: Assignment in country of assignment for 476 expert days for 2 experts

Total: 1141 expert days

Travel

The bidder is required to calculate the travel by the specified experts and the experts it has proposed based on the places of performance stipulated in Chapter 2 and list the expenses separately by daily allowance, accommodation expenses, flight costs and other travel expenses.

Travel to the following regions is permissible under the ambit of this TOR – Delhi NCR and the states of Uttar Pradesh for one of the high-level events as needed.

- 7 return trips for experts and team leader except both Project Assistant is permitted under the ambit of this TOR.
- Per diem, and accommodation costs for 50 days team leader except both Project Assistant is permitted under the ambit of this TOR.
- Local travel (taxi) expenses within Delhi-NCR and Uttar Pradesh are limited to max. 20 trips.
- Local Travel (Bike) expenses for both project assistants to max 238 days in Uttar Pradesh.

Workshops, training

The contractor implements the following workshops/study trips/training courses:

- training for farmer entrepreneur

6. Inputs of GIZ or other actors

GIZ and/or other actors are expected to make the following available:

Not Applicable

7. Requirements on the format of the bid

The structure of the bid must correspond to the structure of the ToRs. In particular, the detailed structure of the concept (Chapter 3) is to be organised in accordance with the positively weighted criteria in the assessment grid (not with zero). It must be legible (font size 11 or larger) and clearly formulated. The bid is drawn up in English language only.

The complete bid shall not exceed 30 pages (excluding CVs & other supporting company documents)

The CVs of the personnel proposed in accordance with Chapter 4 of the ToRs. The CVs shall not exceed 2 pages. The CVs must clearly show the position and job the proposed person held in the reference project and for how long. The CVs should be submitted in English language only.

If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in the assessment.

8. Option

After the tasks put out to tender have been completed, important elements of these tasks can be continued or extended within the framework of a follow-on assignment. Individual points:

1. **Type and scope:** The Pay Per Use Solar irrigation may be extended to another set of 50 sites during years 2026 – 2028.
2. **Requirements:** The option can only be exercised subject to the commissioning of the subsequent phase by the GIZ commissioning party/approval from the advising partner etc.

The option is exercised in the form of an extension to the contract based on the already offered individual rates.

The assignment falls under GIZ negotiated award procedure hence a bidder with maximum technical score shall be contacted for financial negotiations.