

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

<b>Digital Crop Advisories and Climate Risk Management Services for Mint Cropping System in Uttar Pradesh</b>	<b>Project number/ cost centre: 12.1003.8-239.01</b>
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<b>0. Context.....</b>	<b>3</b>
<b>1. Tasks to be performed by the contractor. ....</b>	<b>3</b>
<b>2. Concept.....</b>	<b>6</b>
Technical-methodological concept .....	6
Other specific requirements.....	6
<b>3. Criteria for Eligibility of firms .....</b>	<b>8</b>
<b>4A. Personnel concept.....</b>	<b>8</b>
Team leader .....	8
Expert 1: Project Coordinator .....	9
Expert 2: Agronomist.....	9
Expert 3: Underwriting.....	9
Expert 4: Mobile Application .....	10
Short-term expert pool on Data Analysis with minimum 2, maximum 5 members .....	10
<b>4. Costing requirements .....</b>	<b>11</b>
Assignment of personnel.....	11
Travel.....	11
Workshops, training.....	11
<b>5. Inputs of GIZ or other actors .....</b>	<b>11</b>
<b>6. Requirements on the format of the bid.....</b>	<b>12</b>
<b>7. Option .....</b>	<b>12</b>

## **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.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and two international companies under develoPPP.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.

The key work packages of this projects are:

- a. Strengthening climate resilience on farm and community level.
- b. Supporting the livelihoods and financial resilience of farmers and their families.
- c. Addressing health, safety and well-being of farmers and their families.
- d. Strengthening Women Economic Empowerment
- e. Enable access to finance.
- f. Monitoring & Evaluation, Knowledge Management

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 customized digital crops and weather advisory services from Mint, Rice and Potato crops along with Weather Insurance for Mint crop only covering up to 1500 farmers in Barabanki district of the Uttar Pradesh.

## 2. Tasks to be performed by the contractor.

The contractor is responsible for providing the following services:

### 1. Digital module of GAP & local weather

- a. Convert the existing GAP (Good Agricultural Practices ) modules for Mint , Rice and Potato developed by project to digital format in vernacular (Hindi) language.

- b. Develop the schedule for broadcasting of customised GAP based mobile phone alerts for subscribed farmers based on the crop variety, date of sowing, stage of the crop, local weather conditions etc.
- c. Provide regular weather forecast along with weekly / fortnightly forecast and early warning for extreme weather
- d. Provide irrigation schedule to the subscribed farmers based on the soil moisture level eventually to save the irrigation water.
- e. Provide customised fertilisers recommendation based on digital analysis of the Govt. soil health data / project data for farmers subscribed to the digital service.
- f. Provide weed management advisories
- g. Provide pest and disease forecast to subscribers based on the weather, soil moisture and other climatic & crop stage factors.
- h. Provide harvest and post harvest management advisories for each crop
- i. Provide safe harvest window especially for Mint crop to avoid crop damage from rain or any other extreme climate events
- j. Provide interactive feature in the mobile app so farmers could raise complaints / issues online through text, voice or visual modes.

## **2. Installation of IoT Equipment**

The following Internet of Things (IoT) equipment are to be installed at 4 appropriate locations giving uniform coverage to subscribed farmers

- a. Automatic portable weather stations (4)
- b. Soil moisture sensors (4)
- c. Pest trap with sensors (4)

## **3. Setting up the dashboard**

- a. To set up a dashboard for all the subscribed farmers at Personal Computer of Project to monitor the status of each geo-tagged farm at any given point of time
- b. To map a set of farmers (100-150) to one allocated Extension Officer's mobile phone app, so that critical alerts guide them to attend the farms / farmers accordingly on daily basis

## **4. Consultation with Subject Experts**

- a. Consult with Agronomists of the project and other experts from other institutions to formulate the irrigation scheduling, understanding the pest & diseases incidences and analysing of soil properties of target farmers and accordingly customise nutrient management recommendations.

## **5. Market Feature**

- a. Mobile app has to be added with feature of market through which farmers can communicate (text in Hindi) to update the project about availability of farm produce (Mint oil, Rice and Potato etc.) for sale
- b. Also project staff is able to transmit message (text in Hindi) through dashboard for availability of various agri-inputs to the subscribed farmers

**6. Training and back stopping of the project staff**

- a. Train the project Extension Officers & Lead Farmers for Geo tagging the individual farms through a mobile application before beginning of each crop season.
- b. Train the project Extension Officers for installation of mobile app and its full operations including market feature
- c. Backstop the project team for technical glitches in mobile application during whole period of contract

**7. Weather Insurance for Mint crop**

- a. Provide weather-based crop insurance for Mint crop for 1500 farmers during 2025 (March – June) from a third party.
- b. Provide the information of government’s crop insurance scheme covering Rice and Potato crops for the 1500 subscribed farmers.

**8. Call centre for feedback.**

- a. A phone-based call service centre to be set up to take feedback from service subscribers on weekly basis.
- b. The analysis of feedback is to be presented during weekly review meetings.

**9. Soil health testing**

- a. Soil sample to be collected from at least 10% of the subscribed farmers covering each village under the service once in year (two times during project assignment)
- b. Soil testing report to be shared with project once in year (two times during project assignment)

**10. Additional information**

- a. Farmers to be covered in year 2024-25 are 1000 and crops under digital advisory will be Rice and Potato (not Mint crop)
- b. Farmers to be covered in year 2025-26 are 1500 (1000 carry forwarded and 500 new are subscribed) and crops under Digital advisories will be Mint, Rice and Potato
- c. Weather insurance is to be provided only for Mint crop in year 2025 only.
- d. Maintenance services of IoT equipment are to be provided regularly to capture the field data seamlessly.
- e. The digital services will continue to be delivered for Potato crop until February. 2026 despite service contract may end in December 2025
- f. A weekly online review meeting is to be conducted presenting overall view of the crop / farm’s status with critical incidences (low/high NDVI, soil moisture, pest and disease incidences etc.) and its management along with user’s analysis of mobile app
- g. An annual soil health report to be shared with project.
- h. A monthly crop health status to be provided based on satellite imageries / remote sensing.

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

<b>Milestone</b>	<b>Deadline/place/person responsible</b>
Digital modules for Rice / Potato / Mint crop are set up	15 July 2024 / 15 September 2024 / 15 February, 2025

Training of the project staff for geo tagging and Mobile app is completed before onset of each crop season	15 July,2024 / 15 September 2024 / 15 February 2025 /15 July,2025 / 15 September 2025
Installation of IoT Equipment are completed	15 July, 2024
Setting up the dashboard is completed	15 July, 2024
Market feature is introduced	30 July, 2024
Soil samples are taken @10% farmers / subscribers (2 times)	30 July 2024 / 30 July, 2025
Weather Insurance cover certificates are available for mint crop	15 February, 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 Deutsche Gesellschaft für Internationale Zusammenarbeit (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 180,000 Euros.
- Number of employees as on 1<sup>st</sup> January 2024 should be at least 50.
- The agency must submit a declaration on GWB clauses – refer legal inferences.
- The agency must have handled at least 1 reference projects on implementation of projects related to agricultural digital extension services in India in the last 3 years with a commission value of Euro 50,000.
- Minimum 5 years of experience in providing digital extension services in agriculture, especially on Mint crop in Uttar Pradesh.
- Capacity to install Internet of Things equipment in the project area.
- Inhouse call centre facility for project farmers for regular interactions.
- Inhouse pool of experts of data science, agronomist, information technology, underwriters for crop insurance
- Agency must have demonstrated at least one crop insurance services model in any of the crop in Indian context.

#### 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 computer science / information technology / Data Science or equivalent
- Language (2.1.2): Good business language skills in English and Hindi
- General professional experience (2.1.3): 10 years of professional experience in the Digitalisation in Agriculture sector
- Specific professional experience (2.1.4): 5 years in Internet of Things (IoT)
- 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
- Development Cooperation (DC) experience (2.1.7): 5 years of experience in DC projects

### **Expert 1: Project Coordinator**

#### Tasks of expert 1

- To coordinate with on ground staff for successful delivery of digital services
- To guide the contractor' team on ground for installation of IoTs equipment
- To provide weekly / quarterly update on progress of the service deliveries
- To resolve the technical / administrative / personnel issues on ground

#### Qualifications of expert 1

- Education/training (2.2.1): University qualification / master's in Computer Science / Information Technology / Data Science or equivalent.
- Language (2.2.2): English and Hindi
- General professional experience (2.2.3): 5 years in developing digital modules for any kind of service deliveries.
- Specific professional experience (2.2.4): 2 years in delivering digital crop and weather advisories.
- Leadership/management experience (2.2.5): 2 years in team management experience
- Regional experience (2.2.6): 2 years of experience of working in North India

### **Expert 2: Agronomist**

#### Tasks of expert 1

- To review the crop package and practices and devise these into ready to use formats for digitalisation
- To provide specific crop solutions / advisories for queries received on digital platforms
- To provide virtual / telephonic advisories to project staff and farmers whenever required in context crop agronomy

#### Qualifications of expert 1

- Education/training (2.3.1): University qualification / Master's in agriculture / Horticulture or equivalent
- Language (2.3.2): English and Hindi
- General professional experience (2.3.3): 10 years in developing package and practices of crops / research projects in agriculture
- Specific professional experience (2.3.4): 2 years in Mint, Rice and Potato production practices
- Regional experience (2.2.6): 2 years of experience of working in North India

### **Expert 3: Underwriting**

#### Tasks of expert 1

- To assess the weather risk for the crops like Mint, Rice and Potato
- To design / select the appropriate weather insurance product for covering the risk of mint crop
- To set up the weather parameters for triggering the crop insurance claims for farmers

#### Qualifications of expert 1

- Education/training (2.4.1): University qualification / master's in Statistics / Mathematics / Data Science or equivalent
- Language (2.4.2): English and Hindi
- General professional experience (2.4.3): 5 years in underwriting in insurance industry
- Specific professional experience (2.4.4): 2 years in underwriting in crop and weather risks
- Regional experience (2.4.6): 2 years of experience of working in North India

#### **Expert 4: Mobile Application**

##### Tasks of expert 1

- To customise the mobile application for use of farmers for receiving digital crop advisories
- To provide technical backstopping for fault finding and its resolutions in the mobile application
- To Design the market feature and interactive feature in the mobile application for two-way communication in the mobile application
- To develop the web based dashboard of mobile application installed in smartphones of the farmers / subscribers

#### Qualifications of expert 1

- Education/training (2.5.1): University qualification / master's in Computer Science / Information Technology or equivalent
- Language (2.5.2): English and Hindi
- General professional experience (2.5.3): 5 years in developing mobile application for consumers
- Specific professional experience (2.5.4): 2 years in developing mobile app for crop and weather advisories
- Regional experience (2.5.6): 2 years of experience of working in North India
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#### 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

#### **Short-term expert pool on Data Analysis with minimum 2, maximum 5 members**

##### Tasks of the short-term expert pool

- To capture the remote sensing data of the geo tagged farms
- To interpret the RS data and trigger crop and weather advisories on the mobile
- To set up the pathways for machine learning and develop Artificial Intelligence for the system by working on various algorithms
- To capture the historical data of crops and weather on climate vagaries, disease and pest incidences to set up the forecast algorithms

#### Qualifications of the short-term expert pool

- Education/training (2.6.1): 02-05 experts with university qualification ('Diploma /Master) in Computer Science / Data Science
- Language (2.6.2): 02-05 experts with very good language skills in English and Hindi,
- General professional experience (2.6.3): 02-05 experts with at least 2 years of experience in the Data Management sector
- Specific professional experience (2.6.4): 02-05 experts with at least 2 years of experience in Remote Sensing,
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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 54 expert days

Expert 1: Assignment in country of assignment for 90 expert days

Expert 2: Assignment in country of assignment for 90 expert days

Expert 3: Assignment in country of assignment for 30 expert days

Expert 4: Assignment in country of assignment for 90 expert days

Short-term expert pool: total 360 expert days

**Total: 714 expert days**

**Total travel days: 30 days with 5 return air fares for any of the above experts.**

### **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.

### **Workshops, training**

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

- 5 Trainings on Geo-tagging and mobile application for project staff.

## **6. Inputs of GIZ or other actors**

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

- Workshops / Training logistics

## 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 0 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 digital crop advisories may be extended to another set of 1500 - 2000 farmers 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.

A bidder with maximum technical score shall be contacted for financial negotiations, if required.