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<b>Assessing climate resilience of selected agricultural technologies</b>	<b>Project number/ cost centre:</b>
	<b>22.2133.1-003-00</b>

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<b>0. List of abbreviations .....</b>	<b>2</b>
<b>1. Context.....</b>	<b>2</b>
<b>2. Tasks to be performed by the contractor. ....</b>	<b>3</b>
<b>3. Concept.....</b>	<b>6</b>
Technical-methodological concept .....	6
Project management of the contractor.....	6
<b>4A. Personnel concept.....</b>	<b>8</b>
Team leader .....	8
Expert 1 (Climate Change expert) .....	8
Expert 2 (Agricultural Technology expert).....	9
Expert 3: Stakeholder Engagement and Communication Expert .....	9
<b>5. Costing requirements .....</b>	<b>10</b>
The bidder must provide costing against each work package: .....	10
Travel.....	10
Workshops, training.....	11
<b>6. Inputs of GIZ or other actors .....</b>	<b>11</b>
<b>7. Requirements on the format of the bid.....</b>	<b>11</b>

## 0. List of abbreviations

AVB	General Terms and Conditions of Contract (AVB) for supplying services and work 2018
ToRs	Terms of reference
FPO	Farmer Producer Organisation
NABARD	National Bank for Agriculture and Rural Development

## 1. Context

**The Indo-German Climate Adaptation, Resilience and Climate Finance in Rural India (CAFRI II) - NABARD** project, GIZ India is commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) is supporting the National Bank for Agriculture and Rural Development (NABARD) to manage climate risks in their portfolio and improve resilience, by directly incorporating adaptation measures in agricultural value chain among other things. The project is supporting and collaborating with NABARD, farmer collectives and the relevant government departments as per situation to identify, co-design and ascertain climate risk for agricultural value chain; and explores investment options in adaptation measures. In order to leverage financing opportunities from private sector, the project looks into ways of effective commercial and blended finance approaches to enhance fund flows into activities that create impact in terms of ensuring climate resilience and ensure sustainable livelihoods for farmers.

The key areas for the project comprise:

- Strengthening institutional capacities of relevant public institutions for the design, financing and implementation of gender-responsive climate risk-informed adaptation and resilience measures.
- Strengthening the financing of adaptation solutions in rural India.

Climate change poses significant threats to food and nutritional security, particularly impacting small and marginal farmers who rely heavily on agriculture for their livelihoods. Enhancing agriculture's resilience to these challenges is paramount to safeguarding farmers' incomes and sustenance. While traditional approaches often involve large-scale infrastructure investments such as dykes and dams, emerging startups are pioneering innovative solutions to bolster climate resilience at a grassroots level.

These startups offer a range of cost-effective products, including organic polymers, portable solar pumps, drip irrigation with mulch, and biogas systems. These technologies enable more efficient water and soil management, empowering farmers to mitigate the effects of rising temperatures, droughts, floods, and other climate-related hazards. Despite the potential of these technologies to drive resilience, there is not much climate knowledge about these technologies and there is a need to generate knowledge by capturing local evidence. Additionally, to attract climate adaptation financing towards technologies, evidence of the climate resilience benefits of these technologies is crucial.

The objective of this assignment is two-fold:

1. To assess whether climate change impacts have been considered by select technologies to achieve desired outcomes like better livelihoods, crop yield, etc.
2. To identify 'additional' adaptation measures for integration to the identified technologies which can respond to climate risks.

Documenting evidence on climate resilience of identified technologies which could serve as compelling evidence of adaptation opportunities for public sector, NABARD and FIs. By demonstrating the tangible climate resilience benefits of these technologies in enhancing communities' resilience to climate impacts, such assessments could provide FIs with valuable insights to meet their adaptation and resilience targets. Through comprehensive assessment and documentation of climate resilience, NABARD and other actors can make informed decisions to channel green investments towards initiatives that not only mitigate climate risks but also contribute to the long-term well-being of vulnerable communities. Some of the identified technologies are biodigester, biogel (for moisture retention in soil), liquid fertiliser, automatic spray machine, etc.

The CAFRI II project is seeking a consultancy service to conduct a comprehensive analysis of the climate resilience of selected technologies that are being field trialled at specific locations (district or below). The purpose of this assessment is to evaluate the shortlisted technologies' effectiveness in addressing climate risks and enhancing resilience of vulnerable groups in agriculture sector. The shortlisted technologies (up to 10) have been identified and the list shall be shared by GIZ after award of contract. All the technologies being referred to for this assignment will be specific to agricultural production system.

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

### **Work Package 1: Assessment of climate risk to agriculture production systems in the selected field trial locations of identified technologies and mapping of adaptation options (up to 10).**

#### **Tasks:**

- i) Assess profile of the field trial location (of each selected technology) area including state of natural resources, socio-economic dynamics, climate and developmental issues.
- ii) Propose methodology for data collection, secondary data sources, stakeholder consultation questionnaire, data analysis etc.
- iii) Detailed literature review for baseline trends (30 years if available) and future climate projections (short term and mid-century) & its impact on the selected watersheds and wadis area. (Some possible data sources: SAPCC reports; District level vulnerability assessment report if available, other research reports).
- iv) Assess vulnerability and resilience of critical sectors (livelihoods) and social groups in trial location in consultation with communities. Assess the impacts of hazards on critical exposed elements (crops, land, water, community, infrastructure etc).
- v) Assess the current and potential climate impact on vulnerable groups especially women in the selected field trial location/region.

- vi) Stakeholder consultations (bottom-up) and data analysis (top-down) to prioritize climate risk (hazards, exposure and vulnerability) to the trial locations in short-, medium and long-term and identify adaptation options to address prioritized risk.
- vii) Based on consultations and analysis, identify prioritized adaptation measures for short, medium and long-term.

*Note: Generation of data for climate modelling or projections is not expected as part of this assignment.*

**Work Package 2: Multi-criteria framework/metric and assessment of climate resilience of selected technologies (up to 10).**

- i. Review global/national frameworks/methods on climate resilience assessments of technologies in agriculture and map its relevance to selected technologies.
- ii. Identify resilience objectives & develop metric/criteria (qualitative & quantitative) to evaluate whether the identified technologies have been designed and operated in a way that adapts to evolving climatic risk (WP 1) of the trial location.
- iii. Climate resilience and adaptation are context and location-specific, assess if a 'one-size-fits-all' framework/metric would work for all identified technologies (up to 10) or minor modifications basis technology and geography is required. Framework/metric to be discussed and agreed with GIZ.
- iv. Multi-criteria analysis to assess the climate resilience and potential effectiveness of select technology(-ies) as a potential means of reducing climate risk, achieving resilience objectives/outcomes, and pursuing climate-related societal goals.
- v. Apply appropriate statistical techniques and data visualization methods to interpret and present findings effectively.

**Work Package 3: Identify and recommend 'additional' adaptation measures for integration to the selected technologies (up to 8).**

- i. Based on the assessment of technologies (WP 2), identify 'additional' adaptation measures/changes that will need to be incorporated into the identified technologies to manage climate risk in the target area.
- ii. Conduct a thorough review of existing climate change policies and regulations at the national, regional, and local levels to identify potential incentives or mandates that could support the integration of additional adaptation measures into the identified technologies.
- iii. Interviews/consultations with KVKs, District administration, local financial institutions, line departments, and NABARD Regional Offices to determine availability of technical and financial resources of additional measures.
- iv. Facilitate orientation sessions with the start-ups on importance of inclusion of 'additional' adaptation measures in their business models.

**Deliverables:**

- a) Inception report with methodology of assignment, milestones and timeline.
- b) Stakeholder perspective of climate risk to technology pilot locations
- c) Report on climate risk assessment (top-down + bottom-up) and prioritized adaptation measures identified from the trial locations (up to 10 technologies).
- d) Multi-criteria framework with metric for climate resilience assessment (of up to 10 technologies) developed.
- e) Report with matrix/table capturing climate resilience of at least 10 technologies/start-ups.
- f) Catalogue/Report of 'additional' adaptation measures to be incorporated into the identified technologies to manage climate risk in the target area.
- g) At least 2 physical workshops with select start-ups, NABARD and relevant stakeholders.

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>
Inception report (with timeline/milestones, implementation approach, methodology, multi-criteria approach, etc)	15-06-2024
Climate risk assessment and prioritized adaptation measures identified from the trial locations of at least 5 technologies	15-09-2024
Multi-criteria framework/indicators for assessing climate resilience of 10 technologies developed.	15-11-2024
Climate risk assessment and prioritized adaptation measures identified from the trial locations of at least 5 more technologies	15-01-2025
Case studies/report capturing evidence of climate resilience of at least 10 technologies.	15-03-2025
Identification of 'additional' adaptation measures incorporate in technology (up to 5 technologies)	15-05-2025
Workshops	15-06-2025
Final detailed report and presentation deck	15-07-2025

**Period of assignment: From 15-06-2024 until 15-07-2025.**

**Location:** District in the states of Uttar Pradesh, Uttarakhand, Haryana, Odisha, Jharkhand, Maharashtra, Tamil Nadu, Karnataka and Chhattisgarh

**Reporting and Coordination:** The technical agency will undertake the assignment under the supervision of Director, Climate Change & Circular Economy, Climate Adaptation, Resilience and Climate Finance in Rural India (CAFRI II), GIZ New Delhi and coordinate with the Climate Change Advisor at GIZ Delhi office in close cooperation & guidance from NABARD.

### 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 **Error! Reference source not found.**).

The bidder is required to present the actors relevant for the services for which it is responsible and describe the **cooperation** with them.

The bidder is required to present and explain its approach to **steering** the measures with the project partners and its contribution to the results-based monitoring system.

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 **Error! Reference source not found.**.

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

#### Project management of the contractor

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 2022
- Ensure full data protection for all processes and procedures before, during and after data collection according to Indian legislation and the EU GDPR.

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
- Contractor's responsibility for seconded personnel
- 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 bidders must submit the documentary evidence for the criteria's cited below:

##### **I. Commercial Eligibility assessment**

- a) Firm must be legally registered in India.
- b) The average annual turnover for the last three financial years should be at least 100,000 Euros.
- c) The average number of employees and managers in the past three calendar years should be at least 15 people.
- d) The agency must submit a declaration on GWB clauses – refer Annex "Legal Inferences".

##### **II. Technical Eligibility Assessment**

- e) Agency must have handled at least 03 reference projects with a focus on climate risk assessment and adaptation technologies/solutions in agriculture and at least 2 reference projects in India on climate adaptation, agriculture, soil & water management in the last three years with a minimum commission value of 36,000 euros.

##### **III. Weighted Criteria**

- Minimum 5 Years of technical expertise in the field of climate risk and vulnerability assessment in agriculture systems
- Minimum 5 Years of technical expertise in the field of adaptation planning in agriculture/rural development sector.
- Minimum 5 years of Experience and knowledge of working with agricultural technologies, start-ups and agritech ecosystem.
- Minimum 3 years of demonstrated experience in stakeholder engagement and documentation.
- 1. Regional Experience
  - The agency should have regional experience in India.
- 2. Experience of development projects
  - The agency should have experience of Other Development Assignments.

***Please refer document "Grid for Eligibility of consulting firms" and its Annex (2A) for details. The documentary evidence of the criteria listed above must be submitted as per Annex A of bidding conditions.***

#### **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, identifying the need for short-term assignments within the available budget, as well as planning and steering assignments.
- Regular reporting in accordance with deadlines.

###### Qualifications of the team leader

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- Education/training (2.1.1): University qualification (German 'Diploma'/Master) in business administration, economics, engineering, agriculture or similar
- Language (2.1.2): Good business language skills in English
- General professional experience (2.1.3): 10 years of professional experience in the area of (adaptation to) climate change
- Specific professional experience (2.1.4): 5 years of experience in climate risk analysis or identification of adaptation strategies
- 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 preferably (South) Asia or Africa
- Development Cooperation (DC) experience (2.1.7): 5 years of experience in DC projects

##### **Expert 1 (Climate Change expert)**

###### Tasks of expert 1

- Analysing/assessing the climate risk & adaptation benefits of the selected technologies and flagging potential maladaptation issues.
- Organize consultations with relevant institutions/people for capturing the information and incorporating perspectives.
- Proposing multi-criteria framework and scoring methodology

###### Qualifications of expert 1

- Education/training (2.2.1): Post Graduate Degree/Diploma in Agriculture sciences, Climate Sciences, other relevant qualifications
- Language (2.2.2): business fluency in Hindi, English, one regional language is preferable.



- General professional experience (2.2.3): 10 years' experience in Sustainable Agriculture, Natural Resource Management, Climate Resilience and Adaptation
- Specific professional experience (2.2.4): 5 years' experience in Climate Resilience and Adaptation in agricultural solutions/systems/technologies.
- Regional experience (2.2.6): 5 years of project experience in the South Asian region

#### 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

### **Expert 2 (Agricultural Technology expert)**

#### Tasks of Expert 2

- Assessing the scalability, cost-effectiveness, and cultural compatibility of the technologies.
- Evaluating the technologies' effectiveness in reducing vulnerability to climate-related risks.- -
- Proposing multi-criteria framework and scoring methodology
- Identify 'additional' adaptation measures/changes that will need to be incorporated into the identified technologies to manage climate risk in the target area.

#### Qualifications of the Expert 2

- Education/training (2.3.1): Post Graduate Degree/Diploma in Agriculture Management, Rural Development, Agribusiness Development, Social Work in Rural Development, other relevant qualifications
- Language (2.3.2): Business fluency in Hindi, English, one regional language is preferable.
- General professional experience (2.3.3): 10 years' experience in agri-business development, rural research, farm-based livelihoods
- Specific professional experience (2.3.4): 5 years' experience in developing business plans with agri-startups, establishment and capacity development of agri-startups, and overall agritech ecosystem.
- Regional experience (2.3.6): 5 years of project experience in the South Asian region

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

### **Expert 3: Stakeholder Engagement and Communication Expert**

#### **Task of expert 3**

- Support in identifying social and gender issues in technology trial locations.
- Facilitate stakeholders/community consultations using PRA tools
- Development questionnaire for interviews with specific stakeholders
- Stakeholder consultation report

### Qualifications of the Expert 3

- Education/training (2.4.1): Post Graduate Degree/Diploma in Sociology, social sciences, social works, Anthropology or similar.
- Language (2.4.2): Business fluency in Hindi, English, one regional language is preferable.
- General professional experience (2.4.3): 10 years' experience in working development sector, social development, gender issues, community consultations using PRA tools.
- Specific professional experience (2.4.4): 5 years' experience in working on social & gender issues, developing gender action plan, gender inclusion, proposal development/writing.
- Regional experience (2.4.6): 5 years of project experience in the South Asian region

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

## **5. Costing requirements**

The bidder must provide costing against each work package:

<b>Work package I: Assessment of climate risk to agriculture production systems in the selected field trial locations of identified technologies and mapping of adaptation options.</b>
<b>Work package II: Multi-criteria framework/indicators and assessment of climate resilience of selected technologies (up to 10).</b>
<b>Work Package III: Identify and recommend 'additional' adaptation measures for integration to the identified technologies (up to 8).</b>

## **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 1 and list the expenses separately by daily allowance, accommodation expenses, flight costs and other travel expenses.

Since the contract to be concluded is a contract for work, we would ask you to offer your services at a fixed lump sum price as per work packages mention above, which covers all relevant costs (fees, costs, etc.). The assessment of the financial bid is based on the lump sum price tendered. For the purposes of our internal calculations and any subsequent contracts, we would also ask you to state the daily rate used for the tender. A breakdown of the days is not necessary.

Travel cost must also be mentioned on lumpsum basis. Travel components like Local travel, outstation travel, accommodation, per diem must be separately mentioned separately on lumpsum basis.

### **Sustainability aspects for travel**

GIZ would like to reduce greenhouse gas emissions (CO<sub>2</sub> emissions) caused by travel. When preparing your tender, please incorporate options for reducing emissions, such as selecting the lowest emission booking class (economy) and using means of transport, airlines and flight routes with a higher CO<sub>2</sub> efficiency. For short distances, travel by train (second class) or e-mobility should be the preferred option.

## **Workshops, training**

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

- 2-day consultations/workshops with local stakeholders

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

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

- Support in providing contact with the implementing partners of the project and key stakeholders (among others NABARD, BIRD).
- Review of progress and approvals on deliverables.
- Workshops 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.

The complete bid shall not exceed 10 pages (excluding CVs).

The CVs of the personnel proposed in accordance with Chapter 4 of the ToRs must be submitted using the format specified in the terms and conditions for application. The CVs shall not exceed 4 pages. The CVs must clearly show the position and job the proposed person held in the reference project and for how long.

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

Please calculate your price bid based exactly on the aforementioned costing requirements. In the contract the contractor has no claim to fully exhaust the days/travel/workshops/ budgets. The number of days/travel/workshops and the budget amount shall be agreed in the contract as 'up to' amounts. The specifications for pricing are defined in the price schedule.

***This assignment falls under the GIZ Negotiated Competitive bidding, therefore GIZ may invite the agency (with maximum technical score), for financial negotiations (if necessary)***