

Pre	paration of IWRM plans and using Hydrolog	gical &	Projec Geo- ^{cost c}	ct number/ entre:	
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0. List of abbreviations

AVBAVB	General Terms and Conditions of Contract (AVB) for supplying services and work 2018
ToRs	Terms of reference
TAG	Technical Assessment Grid
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
WASCA	Water Security and Climate Adaptation in Rural Areas
MoRD, Gol	Ministry of Rural Development (MoRD), Government of India
MoJS	Ministry of Jal Shakti (MoJS)
NWM	National Water Mission
PMKSY	Pradhan Mantri Krishi Sinchai Yojana
GP	Gram Panchayat
IWRM	Integrated Water Resource Management
INRM	Integrated Natural Resources management
MGNREGA- EB	Environmental Benefits through Mahatma Gandhi National Rural
	Employment Guarantee Act



1. Context

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Symrise AG and Mars GmbH under SDG Compact framework of develoPPP.de platform have made a strategic alliance and is expected to directly reach 25000+ small-holder farmers by enhancing production systems and strengthening Farmer Producer Organisations (FPO), while contributing to a comprehensive transformation of the sustainable mint farming sector in Barabanki, Uttar Pradesh, India. It will bring fundamental change to the existing system and structural changes to achieve the desired impact on menthol production and the supply chain through positive collaborations among various stakeholders.

Uttar Pradesh is the third poorest state in India with a per capita annual income of US \$ 200. 80% of the people live in rural areas and 66% depend on agriculture for their livelihood. The state's agricultural sector is characterized by very small sized land holdings; around 90% of the farmers in the state are small and marginal farmers. One of the most important crops for smallholder farmers is mint (75% of the Indian mint production is from Uttar Pradesh), which is used as a cash crop in the summer months in rotation with rice, wheat and potatoes as food and cash crops.

Water is one of the most crucial inputs for mint growth and oil yields. Mint is a shallow rooted, high water demanding crop. Its active growth period coincides with the premonsoon hot summer months when the soil moisture is low and soil and air temperature are high, leading to high evapo-transpiration. Flood irrigation is the general practice adopted by the farmers, using ground water extensively as mint requires 10-12 irrigations in one crop cycle. Moreover, it has been observed that water tables are getting deeper year by year, posing a severe threat of water scarcity in the near future.

The DeveloPPP in partnership WASCA (Water Security and Climate change Adpatation) in rural areas – an Indo-German Bilaterla project being implemented byGIZ India, aims to strengthen the water security and optimise the water usage in the mint production cluster of Barabanki, Uttar Pradesh for developing:

- Integrated Water Resource Management (IWRM) plans for each village based on a local hydrological unit level that will enable the coordinated development and management of water, land and related resources with the scope for addressing climate vulnerability.
- Feasible & implementable interventions that enhance the scope for conservation, conjunctive use and management of ground water and surface water resources and for which resources can be mobilized from public schemes like MGNREGA, PMKSY etc.

An agency is required to assist in developing the Integrated Water Resource Management (IWRM) plans using Hydrological & Geo-informatics tools for selected 400+ villages of Barabanki district in the state of Uttar Pradesh.

2. Tasks to be performed by the contractor

A. The main objectives of the assignment are:

- 1. Preparation of geo-informatic & hydrological tools assisted integrated water resource management plan focusing Water-Agriculture-Nexus through leveraging public financing for creating assets related to agricultural & allied based sustainable livelihood
- 2. Capacity development of the public and private stakeholders for enabling them implementation the IWRM plans.



3. Enabling public and private stakeholders to access public financing (flagship programme & schemes of canter and state governments) for creating assets related to agricultural & allied based sustainable livelihood at individual farmer level

B. Scope of work

The assignment will cover 400+ villages of Barabanki district, Uttar Pradesh

1. Preparation of geo-informatic & hydrological tools assisted integrated water resource management plan focusing Water-Agriculture-Nexus will be covered:

1.1. Characterizing Area of Interest (Aol)

- a) Socio-economic profiling of villages and Gram Panchayat
- b) Digitization and geocoding of administrative units via cadastral maps
- c) Digitization and geocoding of Hydrological units.
- d) Mapping of existing infrastructure/assets related to agricultural & allied based sustainable livelihood at individual farmer level
- e) Natural resource profiling: common lands, forests, pastures, degraded and waste lands etc.
- f) Natural resource management (NRM)based livelihood profile: Crop Areas Information, Availability of Drinking water, Status of Irrigation Facilities-Ground Water.

1.2. Profiling Water Resources of Area of Interest (Aol)

- a) Quantifying surface water resources in different units:
- b) Quantifying sub-surface (soil) moisture regime in different units
- c) Quantifying groundwater resources in different units:
- d) Assessment of existing demands:
- e) Preparation of water budget at different administrative and hydrological units:

1.3. Documenting water management practices

- a) Mapping of water management practices:
- b) Contextualizing water use pattern in each Aol
- c) Status of recycling/reuse of water
- d) Assessment of grey water disposal practices
- e) Scoping for optimization of water use & reuse pattern

1.4. Assessing water quality

- a) Analysing water quality datasets
- b) Determining key factors (geogenic and anthropogenic) for water contamination problems
- c) Exploring appropriate alternatives for addressing the water quality concerns

1.5. Capturing climatic/atmospheric conditions (30 years cycle)

- a) Inter and Intra-annual patterns of precipitation, temperature, wind and humidity:
- b) Assessment of intensity and frequencies of peak events related to climatic factors such as precipitation, temperature, wind, humidity etc.
- c) Nature of peak events and its implications on local communities and ecosystems.
- d) Documenting coping strategies and adaptations practices
- e) Assessment of extent and intensity of Evapotranspiration (ET):
- f) Exploring options for enhancing adaptive capacities and community livelihood resilience.



1.6 Water security plan

- a) To address availability of water and expenditure on the provision of water for agriculture.
- b) To predict futuristic scenario with climate change analysis in the districts

1.7 Soil health Profiling

a) Village wise soil major and minor nutrients along with physical and chemical contaminants.

2. Creating an enabling environment for IWRM plan preparation and implementation

- a) Ground-truthing
- b) Participatory planning exercises
- c) Perspective development of identified stakeholders on identified water related issues and challenges
- d) Capturing community's aspiration (in reference of identified water related issues)
- e) Identifying "interventions" for achieving the community's aspirations

3. Capacity Development and Institutional Mechanism

- a) Stakeholder mapping (People, Public & Private) at GP, block and district level:
- b) Promoting the cadre of planners
 - i. Capacity development of facilitators (planning & implementation) (at block level and district level), via ToT, hands-on-training etc. at GP, block and district level
 - ii. Linkage with agencies/experts for technical backstopping of the cadre.
- c) Enabling public and private stakeholders promoted in project areas to access public financing (flagship programme & schemes of canter and state governments) for creating assets related to agricultural & allied based sustainable livelihood at individual farmer level
- d) Liaoning for validation and ownership of IWRM plan readily available for implementation by district/state administration

C. Deliverables

- 400 + villages integrated water resource management (IWRM) plan assisted by Geo-informatic & Hydrological tools focusing Water-Agriculture-Nexus through leveraging public financing for creating assets focusing water resources and in general related to agricultural & allied based sustainable livelihood
- 2. Validated block/district owned IWRM plan readily available for implementation
- 3. A cadre of 50 implementation level planners (public and private stakeholders) promoted in project areas
- 4. 50 enabled public and private stakeholders promoted in project areas to access public financing (flagship programme & schemes of canter and state governments) for creating assets related to agricultural & allied based sustainable livelihood at individual farmer level



D. Timelines

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

Period of assignment: From 1st July 2020 until 30th June 2021

S.N.	Milestone	Timeline
1.	Inception Meeting and Report	15 days of contract
2.	Preparation of geo-informatic & hydrological tools assisted integrated water resource management plan focusing Water-Agriculture-Nexus :	
1.1	 Characterizing Area of Interest (AoI) 	July-Sept, 2020
1.2	 Profiling Water Resources of Area of Interest (AoI) 	Sept-Nov, 2020
1.3	 Documenting water management practices 	Nov-Dec, 2020
1.4	 Assessing water quality 	Jan-Feb, 2020
1.5	 Capturing climatic/atmospheric conditions (30 years cycle) 	Feb, 2021
1.6	 Water security plan 	March-April, 2021
1.7	 Soil health Profiling 	March-April, 2021
2	Creating an enabling environment for IWRM plan preparation and implementation	
	 Ground-truthing Participatory planning exercises Perspective development of identified stakeholders on identified water related issues and challenges Capturing community's aspiration (in reference of identified water related issues) Identifying "interventions" for achieving the community's aspirations 	Jan-March, 2021
3	Capacity Development and Institutional Mechanism	
3.1	Stakeholder mapping (People, Public & Private) at GP, block and district level	Aug, 2020
3.2	Capacity development of facilitators (planning & implementation)	Sept 2020Feb 2021
4	Validated & district/state owned IWRM plan readily available for implementation	March-June, 2020



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). (Point 1.1.- TAG)

The bidder is required to present the actors relevant for the services for which it is responsible and describe the **cooperation** with them. (Point 1.2 - TAG)

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. (Point 1.3 - TAG)

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. (Point 1.4 - TAG)

The bidder is required to describe its contribution to knowledge management for the partner and GIZ and promote scaling-up effects (**learning and innovation**). (Point 1.5 - TAG)

Project management of the contractor (Point 1.6 - TAG)

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

4. Personnel concept and Required Qualification

4.1 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 8), 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 cum IWRM Expert

- 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
- Technical lead for designing & customising tools for assessment of water scenarios
- Customising the planning tools for climate resilient IWRM planning
- Coordinating the assessment and planning aspects of the assignment
- Technical backstopping support for assessment and planning teams

Qualifications of the team leader

- Qualifications (2.1.1): Post-graduate Hydrology from premier national institute
- Language (2.1.2): English and Hindi
- General professional experience (2.1.3): Minimum 20 years of professional experience in hydrological modelling for rural areas
- Specific professional experience (2.1.4): Minimum 15 years in participatory water sector planning using modern technologies, designing and planning of farm & off-farm Water management & drainage engineering
- Leadership/management experience (2.1.5): Minimum 10 years

Other positions stipulated by GIZ

Expert 1: Remote Sensing and Geographical Information System

Tasks of expert 1

- Customize geo-informatics-based solutions for assessment for IWRM planning
- Develop modules for GIS enabled IWRM planning
- Synchronise the tools developed by technical team
- Coordinate with IWRM Expert for finalisation of assessment and planning aspects
- Handholding support to assessment and planning teams
- Conducting ToTs on geo-informatic tools (NRM)
- Deriving essential inputs based on results of IWRM planning for development of "Digital Decision Support System for IWRM"

Qualifications of expert 1

- Qualifications (2.2.1): Post Graduate in Geo- Informatics
- Language (2.2.2): English, Hindi and other regional languages is advantage
- General professional experience (2.2.3): Minimum 5 years of experience in Rural Development & Agriculture sectors
- Specific professional experience (2.2.4): Minimum 3 years of using Geo-Informatic Tools in area of water sector
- Project management experience (2.2.5): Minimum 3 years

Expert 2: Agriculture and Surface Water

Tasks of expert 2

- Designing & customising tools for assessment of water scenarios
- Customising the planning tools for climate resilient IWRM Planning
- Coordinate with GIS Expert for developing assessment and planning modules



- Assist IWRM Expert for incorporating water engineering and CCA aspects
- Conducting ToTs on crop water budgeting and crop management
- Coordinate with the state and district basin teams for practicing the tools developed

Qualifications of expert 2

- Qualifications (2.3.1): MSc/MTech in Agricultural Science/Engineering
- Language (2.3.2): English and Hindi
- General professional experience (2.3.3): Minimum 10 years of experience in agriculture and water conservation
- Specific professional experience (2.3.4): Minimum 10 years of in command area development for agriculture and extension services and

Expert 3: Data Scientist

Tasks of expert 3

- Designing & customising tools for assessment of water scenarios
- Customising the planning tools for climate resilient IWRM Planning
- Coordinate with GIS Expert for developing assessment and planning modules
- Assist IWRM Expert for incorporating water engineering and CCA aspects
- Conducting ToTs on crop water budgeting and crop management
- Coordinate with the state and district basin teams for practicing the tools developed

Qualifications of expert 3

- Qualifications (2.4.1): Master's in applied science
- Language (2.4.2): English and Hindi
- General professional experience (2.4.3): Minimum 10 years of experience in statistical science, data visualisation and communication
- Specific professional experience (2.4.4): Minimum 10 years of in area of data analysis and scenario building for planning, rural/urban development and agricultural related activities.

Short Term Pool of Experts 1 (Geo -Informatics)

Tasks of expert

- Facilitating the district/basin teams in the state for assessment of water scenarios
- Coordinating the IWRM planning exercise in select project locations in the district
- Handholding support to assessment and planning teams in select project locations
- Analyse and synthesize the outcomes of the assessment and planning exercises and extract key results
- Coordination with national and district/basin teams for field visits and expert inputs

Qualifications of experts

- Qualifications (2.5.1): Master of Science & and technical qualification on Remote Sensing & Geographical Information System
- Language (2.5.2): English and Regional languages
- General professional experience (2.5.3): Minimum 5 years of experience in application of RS & GIS for spatial analysis for rural / agriculture sectors
- Specific professional experience (2.5.4): Minimum 3 years of digitising the cadastral maps, overlying of various GIS thematic maps to build the scenarios of agricultural fields

Short Term Pool of Experts 2 (Geo -Informatics)

Tasks of expert

- Facilitating the district/basin teams in the state for assessment of water scenarios
- Coordinating the IWRM planning exercise in select project locations in the district
- Handholding support to assessment and planning teams in select project locations



- Analyse and synthesize the outcomes of the assessment and planning exercises and extract key results
- Coordination with national and district/basin teams for field visits and expert inputs

Qualifications of experts

- Qualifications (2.5.1): Master of Science & and technical qualification on Remote Sensing & Geographical Information System
- Language (2.5.2): English and Regional languages
- General professional experience (2.5.3): Minimum 5 years of experience in application of RS & GIS for spatial analysis for rural / agriculture sectors
- Specific professional experience (2.5.4): Minimum 3 years of digitising the cadastral maps, overlying of various GIS thematic maps to build the scenarios of agricultural fields

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

1.2 Required Qualification/experience for the consulting agency

The agency and / or consortium must have the following administrative and financial requirements for conducting the assignment

- 1. Be a registered as national organization or entity
- 2. In case of bidding consortia: Declaration by consortium
- 3. Average annual turnover for the last three financial years should be at least 1,00,000 Euros
- 4. The agency should have minimum 15 employees as on 31st December 2019
- 5. The agency must have handled at least 3 projects on RS & GIS based services in rural and agriculture sector and 2 reference projects in India in the last three years with minimum commission value of Euro 25,000.

The agency and / or consortium must have the following administrative and financial requirements for conducting the assignment

- 6. Minimum 10 years of experience and technical expertise using Geo-Informatic Tools in for rural development & agriculture
- 7. Minimum 5 years of experience for providing digital solutions / tools for natural disaster risk management such as draught
- 8. Capability of training relevant stakeholders on Geo-Informatic Tools for natural resource management
- 9. Experience in providing climate information services to public and private sector
- 10. Expertise and working experience with small-holder farmers by enhancing production systems.

The agency and / or consortium should have other (non-evaluated) administrative and financial requirements for conducting the assignment



- 11. Good knowledge and rapport with local communities
- 12. Experience in providing consulting services / implementation and excellent track record of completion of tasks according to timelines,
- 13. Excellent reporting and writing skills (English, Hindi)
- 14. Well qualified and experienced key professional staff
- 15. Experience in managing projects with international organisation

5. Costing requirements

Assignment of personnel

Team leader: On-site assignment for 150 expert days

- Expert 1: Assignment in country of assignment for 175 expert days
- Expert 2: Assignment in country of assignment for 175 expert days
- Expert 3: Assignment in country of assignment for 175 expert days
- Expert 4: Assignment in country of assignment for 175 expert days
- Expert 5: Assignment in country of assignment for 175 expert days

Total proposed person days: 1025

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 at Delhi and in the states of Uttar Pradesh as stipulated in Chapter 2 and list the expenses separately by daily allowance, accommodation expenses, flight costs and other travel expenses.

Workshops, training and study trips

- The agency is required to proposed training event for promoting the cadre of planners as per ToR part B (scope of work). The agency is required to proposed training related expenses.
- In addition, the agency is also required to facilitate, coordinate and participate need based workshop, and study trips planned by GIZ and government partners. The agency is not required to proposed workshop and study trips related expenses.

6. Inputs of GIZ or other actors

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

- Introduce the agency to the state administration at the start of the project.
- Suggest additional participants for any meetings, trainings, and workshops
- Any technical support required for the success of this initiative
- Support in the field visit of the participants

7.2 Reporting and Coordination: The agency shall report to Director NRM, GIZ New Delhi and coordinate with the Technical Advisor at GIZ Delhi office.



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).

The complete bid shall not exceed 15 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. The CVs can also be submitted in English (language).

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.

Structure of the Proposal

- The proposal should contain a very brief company profile followed by a detailed approach and methodology to execute the project. The proposal should also contain the project timeline highlighting milestones and deliverables. Please elaborate the roles and responsibilities of the different team members in the proposal;
- The entire proposal including approach and methodology proposed, CVs etc., needs to be in English. The CVs need to be in uniform format with a maximum of three pages; The length of technical proposal should not exceeds 25 pages;
- The template for financial quotes has been attached with the tender documents. The
 potential bidders are advised to follow the attached budget template;
- Strategy for backstopping-services and Ad-hoc activities need to be specified. Back stoppers and Ad-hoc support providers have to be listed and need to be available during the contract duration;
- The agency is expected to be flexible in their approach when it comes to successfully implementing these pilots for community nutrition gardens depending upon the requirements of the government officials;
- The agency must outline the perceived risks associated with the different tasks under the defined scope of work? How does the agency propose to mitigate these risks? How does the agency ensures the quality of deliverables (for all processes, indicators and project steps);
- While the key activities envisaged (as discussed above), the agency is also encouraged to suggest additional activities or even propose alternate approaches, which may help achieve the same end objective.