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

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Study on Analysis of Water Footprint in Cotton Production in Maharashtra and Gujarat	**Project number/ cost centre:** **18.0128.1-002**

0. List of abbreviations

AVB	General Terms and Conditions of Contract (AVB) for supplying services and work 2018
ToRs	Terms of reference

1. Context

The global cotton programme

On behalf of the German Federal Ministry of Economic Cooperation and Development (BMZ) the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) is implementing the global programme 'Sustainability and Value Added in the Cotton Economy'. The partner countries included are Burkina Faso, Cameroon, India and Uzbekistan. The programme is part of BMZ's special initiative "ONE WORLD – No Hunger" (SEWOH). The duration of the programme is from 04/2019 until 03/2023. The objectives of the global programme are to increase the income of cotton farmers and textile workers, to protect natural resources and to create new income opportunities and employment perspectives within the relevant cotton economies. On global level, the programme supports transfer of know-how and innovations between the partner countries.

The German Government broadly supports the implementation and strengthening of sustainable supply chains for various industries including consumer products (e.g. cotton textile and apparel). Within this broad endeavour, the German Federal Ministry of Economic Cooperation and Development (BMZ) – responsible for and financing bilateral and multilateral development cooperation – has set a focus on sustainable supply chains for cotton textiles and the implementation of social and environmental standards along the chain from the field to the consumer. In collaboration with national and international governmental as well as non-governmental organisations, significant progress has been achieved during the last decade promoting sustainable cotton production systems and sustainability concepts for the entire textile chain. Promotion work at global level is ongoing and receives support from public (e.g. ICAC) and private resources (international textile brands and large retail companies, e.g. within the framework of the German Textile Partnership).

The GIZ project "Sustainability and Value Added in the Cotton Economy" is a new project to India within the portfolio of the long-lasting development cooperation between India and Germany. The project itself is a country package within the global programme promoting sustainability and value addition in cotton supply chains. Project activities in India are about to commence in the last quarter of 2019.

On national level, the overarching components of the project in India are two-fold. The first focuses on farmers, agriculture and the promotion of sustainable cotton production. 'Sustainable' cotton production is defined according to the most important international standard systems (Better Cotton Initiative (BCI), Cotton made in Africa (CmiA), Fairtrade Cotton and Organic Cotton) as well as national reference definitions and frameworks. The second focuses on entrepreneurship and the downstream segments of the textile 'pipeline' beyond ginning, in order to develop and strengthen domestic capacities for processing sustainable cotton. The project aims to foster sustainability along the entire supply chain in close cooperation with so-called 'lead firms' of the cotton-based textile and garment value chain, in India as well as internationally.

The GIZ project intends to support the promotion of sustainability and value addition in India's cotton supply chain (from cotton seed to finished product), in close cooperation with the Ministry of Textiles and other implementation partners from public and private sector. Emphasis is given to the states of Maharashtra and Gujarat.

The case of India

Cotton is an important cash crop in India sustaining livelihoods of estimated 5.8 million cotton farmers and boasting of largest area under cotton cultivation (11 million hectares) in the world. However, despite its high economic value to the country, diverse challenges in promoting sustainable cotton production is a critical area that requires urgent attention to build a sustainable cotton economy for the farmers.

Cotton cultivation in India is generally characterised by unsustainable use of resources, such as indiscriminate use of pesticides, chemical fertilisers and water for irrigation. The Water footprint has also emerged as a hotspot aspect in the cotton production system and the textile industry (due to the size of its activity). A water footprint has been defined as an indicator of water-use that focuses on both the direct and indirect water use of a consumer or producer. The water footprint of a crop is defined as the total volume of freshwater that is used to produce the goods and services consumed by the individual or community or produced by the farmers. (For more detailed information see here: https://waterfootprint.org/)

The water footprint in the cotton production system assumes greater significance in the light of ill-effects of climate change, adversely affecting monsoons in India- and thereby resulting in a greater variance in rainfall patterns. Substituting rainfed production with irrigation facilities is one response that becomes more important. Further, the extensive usage of chemical fertilisers and other inputs, along with variance in soil-types also has bearing on water-consumed in the cotton-production. It therefore highlights the relevance and urgency on assessing the current status of the water footprint of cotton production and then accordingly taking commensurate measures to reduce the water footprint to ensure an element of sustainability in the cotton production system. The Water footprint assessment is a useful tool to quantify and locate water footprints, to evaluate whether footprints are sustainable and to identify options to reduce water footprints where necessary.

2. Tasks to be performed by the contractor

Within the scope of this assignment, the consultancy (hereafter referred to as ‘the Contractor’) should mainly focus on quantifying water consumption in the cotton production system by understanding the current water footprint Maharashtra and Gujarat, and how to improve it. It is aimed at contributing to building a sustainable cotton production system- characterised by a production-system that can maintain levels of production with minimal environmental impact, can support viable producer livelihoods and communities, and can do so in the face of long-term ecological constraints and socioeconomic pressures.

The study recommendations would be useful as it is intended to inform better decision making on reducing the water footprint in cotton production system under the project.

Objectives of the study

- To map and compile a project baseline data on water footprint in cotton production in project implementation areas in Maharashtra and Gujarat
- To understand and assess the water footprint in select plots of cotton in relation to different varieties in different production sites in Maharashtra and Gujarat
- To understand the environmental impact of certain cotton production systems on water resources in both the states
- To understand the economic impact of certain cotton production systems (water footprint of defined production unit and water foot print of defined profit unit)
- To assess potential risks of water footprint on achieving sustainable cotton production
- To recommend measures on reducing water footprint in cotton production system in both the states

Scope of work:

- Assessment of the water footprint in select plots of cotton with respect to rainfed and irrigated cotton plots and for different cotton varieties in Maharashtra and Gujarat
    - Calculate total water use in m3 of water per unit of cotton production
    - Calculate total water-use per unit of income generation (say per INR thousand of income) through cotton production

- Mapping and understanding the impact of different production methods on the water footprint in Maharashtra and Gujarat:
    - Inputs used (fertiliser, pesticides, weedicides, insecticides, seeds)
    - Direct water use in growing the crop (based on an applicable evapotranspiration model)

- Assessment of water footprint with respect to types of water used:
    - **Green water:** Water evaporated through crop growth that originates from rainfall
    - **Blue water:** Irrigation water that is not returned to either the surface or groundwater environment
    - **Grey water:** Amount of fresh water required to assimilate pollutants to meet specific water quality standards

- Understanding the extent of water-use in cotton production vis-a-vis the total water resource available in the project area for agriculture purposes

- Assessment of whether this current proportion of water use in cotton production presents risks to the environment, communities, or to business, now or in the future in both the states

- Recommend ways and practical measures for reducing the water footprint of cotton production (short-term, medium terms and long-term measures, with potential cost implication for each of these suggested measures)

Implementation details

1. *Kick-off workshop and preparatory desk study (Timeframe: 2 weeks)*
    - The project of the study will start with a kick-off workshop (1 day) which will either take place in India (Delhi or Mumbai) or via video conference. On that occasion, the Contractor has to present his project proposal, discuss open questions and agree with GIZ's project management team about the final project design. During the kick-off, the Contractor also has to present a list with potential interview partners/stakeholders in India
    - The first component will be a desk study evaluating existing data and studies concerning the relevant topic.
    - Finally, and after clearance with GIZ, the Contractor has to establish communication with concerned stakeholders for fulfilling the objective and scope of the study.

2. *Field research and interviews (Timeframe: 2 week)*
    - The relevant contacts, data, information and sources to realize the study will be collected through site visits, interviews, including field testing of questionnaire etc.
    - The Contractor validates the scientific tool(s) to be used for the study.
    - The Contractor is conducting the relevant interviews with the concerned stakeholders for fulfilling the objective and scope of the study.

3. *Submission of interims report, presentation of questionnaire (Timeframe: 1 week)*
    - The Contractor submits the interim report.
    - These documents will be discussed with the GIZ project team via video conference.
    - Depending on feedback from GIZ, the documents will be revised by the Contractor.

4. *Field research, application of appropriate scientific tools, analysis and interviews (Timeframe: 7 weeks)*
    - The relevant contacts, data, information will be collected through site visits, interviews, interaction with experts, application of agreed scientific tool(s), etc.

5. Submission of interim report (Week 9)
    - Based on initial trends, key observations and analysis

6. *Finalization of the study (Timeframe: 4 weeks)*
    - During the final project stage, the summary of the interviews conducted as well as a summary report will be elaborated by the Contractor's project team.
    - Depending on the feedback of GIZ, the drafts of the study documents will have to be revised by the Contractor and submitted to the GIZ again.
    - During the study finalization process, the Contractor's project team will present the results of the study at the GIZ's premises India (Delhi or Mumbai).

The contractor is responsible for providing the following services:

- Contractor's concept paper on implementing the study (project proposal) (5 pages) (Week 1)
- Interim report summarizing objective and scope of work (max. 10 pages, including current status, challenges, defining methodology of study, sample, questionnaire after field testing, etc) (Week 5)
- Interim report (max. 10 pages (based on initial trends, key observations and analysis) (Week 9)
- Draft report and presentation for comments by GIZ (Week 14)
- Final report (Week 16)

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

Milestone	**Deadline/place/person responsible**
Signing of Contract	First week of December, 2019
Kick-off meeting	Second week of December, 2019
Finalisation of research instruments and sampling frame, and field testing	First week of January, 2020
Presentation of the preliminary outcomes of the assessment to GIZ	First week of February, 2020
Submission of draft report for feedback and sharing the study outcome to a multi-stakeholder platform for feedback	Second week of March, 2020
Submission of the final report after incorporating of suggestion from GIZ and workshop	First week of April, 2020

Period of assignment: From 5 December, 2019 until 10 April, 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).

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 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.

Other specific requirements

The bidder needs to include in its bid an elaborative methodology that it proposes to employ for the assignment. The methodology should clearly indicate sample size with justification, frequency of sample and data collection, framework of data analysis etc.

Secondary research:

- Desk research and study of various publications on water footprint conducted by different institutions (nationally/ internationally) on cotton and other crops through publicly available secondary sources
- Reference to be made for methodology and structure: C&A Foundation study (with focus limited on conventional production system) https://waterfootprint.org/media/downloads/Assessm_water_footprint_cotton_India.pdf
- Reference to be made to Water Footprint Assessment Manual - https://waterfootprint.org/media/downloads/TheWaterFootprintAssessmentManual_2.pdf

Interaction with stakeholders:

- Interaction with key agencies/ institutions involved in sustainable cotton cultivation to understand their perspectives on water footprint in cotton and measures to deal with the challenge
- A structured questionnaire survey with an appropriate (statistically significant) number of farmers (number to proposed by agency, to be agreed on with GIZ) would be conducted to get the primary quantitative data with regard to input application at different stages of cotton production.
- Focused group discussion with individual cotton farmers, farmers clubs, Self Help Groups (SHGs), Farmer Producer Organisations (FPOs) engaged in cotton cultivation, etc
- The farmers' profile to be prepared which would capture details such as name, location, age and level of education, as well as details of the land they farmed, such as farm size, cotton yield, soil type, irrigation schedule and irrigation method, climate and meteorological data, fertiliser and pesticide application and the concentrations of their active ingredients. Specific irrigation, fertiliser and pesticide schedules, along with the yield.
- The focus of sample-selection of farmers should be mostly small and marginal farmers. The number of farmers would be decided based on the number of plot-selections made, representing each identified parameters.

The bidder needs to elaborate above aspects in the proposal.

Elaboration of Scientific Tools to be used:
The agency needs to clearly indicate scientific tool or method that it proposes to use in the study for meeting the objective and scope of the study. The logical explanation of the tool suggested to be employed for this study needs to be clearly established in the proposal, focusing on distinctiveness in approach, its relative advantages over other existing tools, and intended output. The agency would also clearly elaborate key secondary data sources that it intends to use for the study.

The data on various parameters under study would be compiled and analysed using descriptive statistical analysis methods. The same needs to be elaborated in the technical proposal.

Sample size:

The bidder needs to identify and explain the proposal crucial parameters for assessing the water footprint. Different parameters suggested are:

- Rainfed vs irrigated plot
    - (In irrigated plot, parameters of drip irrigated crop vs flood irrigated crop)
- Soil type and its water holding capacity (deep black soil vs medium black soil)
- Difference in seed-varieties with respect to short crop-duration (150 days) as against conventional crop duration of 180-210 days
- Different cultivation techniques like high density plantation and conventional farming

The above parameters are indicative, and agency may choose and/or add parameters which best fulfils the study-objectives (section 2 of the ToR). The Contractor should propose and elaborate the sampling frame to ensure a statistically useful standard-deviation for all parameters. It is proposed that at least three (3) plots with a homogene pattern are selected per parameter, and accordingly combinations and permutations taking different parameters to be worked out and explained in the proposal. The bidder is required to include detailed methodological framework suitable for the defined scope of the study and the stipulated time frame. The framework would include the statistical tools and techniques that would be used during data analysis.

Sample selection should also ensure coverage of project implementation areas in Maharashtra and Gujarat.

The bidder should provide a tool to avoid fake- or manipulated interviews (e.g. questionnaire with “trap”-questions and best run interviews with tablets by tracing the position and link it directly with SSPS-software system (for quantitative interviews only)).

Study area:

The study area would be Marathwarda in Maharashtra and Saurashtra in Gujarat. The project districts and talukas, and the farmer-selection/ plot selection would be decided in consultation with GIZ.

Project management of the contractor:

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

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.

4. Required experience of the Contractor:

The bidder is required to submit detailed technical and financial proposal comprising a profile that contains the current CVs and summary of relevant professional experiences of both—organizational as well as individual experts.

- Minimum eight (8) years of experience and technical expertise in conducting high quality studies in Natural Resource Management and/ or agriculture, scientifically and statistically of value (publications can be made available) in similar thematic areas of water analysis in agriculture.
- Familiarity with status and challenges of sustainable cotton production in India, particularly in states of Maharashtra and Gujarat (prior experience of working in these two states would be preferred).
- Well-qualified team of professionals and experts in (agronomist, water-experts, economics, scientists covering Integrated Pest Management, Soil science, Plant nutritionist and others etc) to carry out the research study
- At least five (5) years of experience of conducting such large-scale technical assignments in scientific crop-based water analysis, and prior experience of undertaking water footprinting study would be preferred.
- The bidder should have a team (CVs to be provided) of field investigators, specialised in qualitative interviews (e.g. preferably scientists by themselves or others with a comparable background) for sample/data collection
- The bidder should have proven ability to mobilize resources and support and deep knowledge of cotton textile sector in India
- Excellent reporting, writing and presentation skills
- Prior experience of working with GIZ or other multi-lateral/ bilateral organizations would be preferred

Bidder should have following administrative and financial requirement in conducting the assignment:

- Average annual turnover for the last three financial years should be at least 100,000 Euro
- Number of employees as at 31.12.2018 should be at least 10
- The technical assessment is only based on reference projects (water sector) with a minimum commission value of 20,000 Euro

5. Personnel concept

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

Team leader

Project Team:

- Considering the scope of work and the stipulated timeframe, it will be necessary to assign a working team of two experts (team leader and expert). Both experts should be knowledgeable in the cotton production-system, water sector in agriculture (esp. water footprinting) and must have extensive work/consulting experience in the agriculture and water sector in India.
- Both experts assigned by the Contractor have to be fluent in English.
- The contractor should also mobilize need-based number of experts equipped with skillsets of data collection from the farmers. They should be subject matter specialists and well-adept and experienced to collect the technical primary data during field visits.

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

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 and field investigators
- Regular reporting in accordance with deadlines

Qualifications of the team leader

- Education/training (2.1.1): University qualification in Rural Management/ Natural Resource Management/ Environment studies/ Agriculture and/or water management sector, or related fields
- Language (2.1.2): Good business language skills in English. Familiarity with any regional language of Maharashtra/ Gujarat would be an advantage
- General professional experience (2.1.3): At least 12 years of professional experience in the water management and analysis sector in agriculture sector and large scale consulting
- Specific professional experience (2.1.4): At least 10 years of experience in specific water sector in agriculture related to relevant aspects such as water footprinting, water-budgeting, ground and surface water management and modelling, crop-based specialised studies, etc
- Leadership/management experience (2.1.5): At least 8 years of management/leadership experience as project team leader or manager in a company
- Regional experience (2.1.6): At least 8 years of experience in projects in India. Any experience of working in Gujarat and Maharashtra would be preferred.
- Development Cooperation (DC) experience (2.1.7): 5 years of experience in DC projects
- Other (2.2.8): NA

Expert 1

Tasks of expert 1

- Support the project leader in implementing the project and the reporting

Qualifications of expert 1

- Education/training (2.2.1): University qualification (Diploma/Master) in Rural Management/ Natural Resource Management/ Environment studies/ Agriculture and/or water management sector, or related fields
- Language (2.2.2): Good business language skills in English.
- General professional experience (2.2.3): At least 5 years of professional experience in the water management and analysis sector in agriculture sector and large scale consulting
- Specific professional experience (2.2.4): At least 5 years of experience in specific water sector in agriculture related to relevant aspects such as water footprinting, water-budgeting, ground and surface water management and modelling, or similar themes
- Regional experience (2.2.6): At least6 years of experience in projects in India
- Development Cooperation (DC) experience (2.2.7): NA
- Other (2.2.8): NA

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 with at least 5 members

Tasks of the short-term expert pool

- Support team leader and expert in field data collection and need-based support in analysis

Qualifications of the short-term expert pool for field investigation

- Education/training (2.6.1): At least post graduate degree from a recognised university (specialised in qualitative interviews, agriculture, - e.g. involved scientists by themselves or others with a comparable background) or in rural management, agriculture and water sector or related fields.
- Language (2.6.2): Good business language skills in English. Familiarity with any regional language of Maharashtra/ Gujarat would be an advantage
- General professional experience (2.6.3): At least 5 years of professional experience in the primary data collection and analysis of water management and analysis sector in agriculture sector and large-scale consulting
- Specific professional experience (2.6.4): At least 5 years of experience in specific water sector in primary data collection in the field and analysis agriculture related to relevant aspects such as water footprinting, water-budgeting, ground and surface water management, etc
- Regional experience (2.6.5): Experts with at least 5 years of experience in India (experience in states of Maharashtra and Gujarat) would be preferred.

- Development Cooperation (DC) experience (2.6.6): NA
- Other (2.6.7): NA

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

6. Costing requirements

Assignment of personnel

Team leader: Assignment for 30 expert days

Expert 1: Assignment in country of assignment for 50 expert days

Pool of field investigators: 80 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.

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 30 pages (excluding CVs).

The CVs of the personnel proposed in accordance with Chapter 5 of the ToRs must be submitted using the format specified in the terms and conditions for application. The CVs of each expert 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.

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.

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:** If the GIZ Global Programme “Cotton” asks for more suggestions, the contract can be extended by two months (team leader expert days: 20, expert days; 30).

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