giz

TERMS OF REFERENCE

PROMOTING AND ESTABLISHING VIABLE VALUE CHAINS FOR 'URBAN-RURAL NUTRIENT AND CARBON CYCLE'

A. Background

The project – Soil Protection and Rehabilitation for Food Security in India (ProSoil) is part of the Global initiative 'Special Initiative – One World No Hunger (SEWOH) by Federal Ministry of Economic Cooperation, Government of Germany (BMZ) and implemented by GIZ. ProSoil India, in strategic partnership with National Bank for Agriculture and Rural Development (NABARD); is implemented in the states of Madhya Pradesh and Maharashtra in collaboration with NGO partners. The objective of the project is to improve soil quality and promote sustainable agriculture practices. One of the key interventions under the project is to close the urban-rural nutrient cycle and provide alternative to chemical fertilizers by encouraging use of organic manures like compost, PROM and TP produced from urban organic waste streams.

Under the Swachh Bharat Mission (SBM), various efforts and initiatives are being made. One of the component under the SBM is 'Municipal Solid Waste Management (MSWM) refers to a systematic process that comprises of waste segregation and storage at source, primary collection, secondary storage, transportation, secondary segregation, resource recovery, processing, treatment, and final disposal of solid waste. The Swachh Maharashtra Mission (SMM) also has initiated HARIT, an initiative to certify and market the products made from urban solid waste. GIZ has been supporting the Swachh Maharashtra Mission (SMM) in planning, scientific processing of waste and also developing and testing products like phosphate rich organic manure (PROM) and/or Terra Preta (TP) from urban organic waste. GIZ also commissioned a 'Waste to Energy Plant' in Nashik. The ProSoil project, furthers the efforts by promoting use of the products from urban solid waste as organic inputs in agriculture.

GIZ in collaboration with International Water Management Institute (IWMI) is also developing viable and operational business plans and models for urban compost, in Maharashtra. These business plans will enable the Urban Local Bodies (ULBs) and its supporting operators to establish business models for processing and supply of compost and other products from urban solid waste. Business models and plans will also be developed for institutions like FPOs that can establish viable business around distribution and delivery of these products.

B. Objective:

GIZ seeks services of the expert institutions here after termed as *'Consultant'* for further strengthening the processes and technology use in urban waste management such that the products thus developed are of acceptable quality, are certified (as per FCRO and HARIT norms) and are competitive in the market. Thereby, ensuring acceptability and adoption by users, primarily in the agriculture sector.

C. Scope of work:

The following is the scope of work for this assignment:

1. *Quality Analysis of products*: Quality analysis and field tests with PROM and TP produced from a biogas plant using both wastewater and organic kitchen waste have to be conducted. The quality of the products need to be tested and analysed to ensure hygienic requirements, nutrients and contents like heavy metals to meet certain standards as per the FCRO guidelines. The quality also need to be ensured for the use of product in agriculture.

2. *Procurement and technical support to establish hygiénization unit in the Nashik waste to energy plant*: The Nashik plant has sufficient supply of waste that needs to be converted to useful products like compost, TP or PROM. However, there is a need for hygienization of the inputs. The consultant will procure and set up the required hygienization unit and provide technical and hand holding support to the ULB and operator to effectively use this technology.

3. *Ensuring marketability of products from urban organic waste*: There is a huge gap in terms of application as well as need of organic manure in agriculture, as most of its produced using agriculture and rural waste. Hence, there is an enormous opportunity to use the compost from urban organic waste in agriculture. This is largely attributed to lack of awareness around compost from urban waste and its use in agriculture. This service contract envisages:
    a. Ensuring competitive product and pricing such that the products are market viable, can be accessed, available and used by the farmers.
    b. Use existing institutions to strengthen the value chain of products from urban organic waste: The project works in close collaboration with the Urban Development Department, Govt. of Maharashtra (UDD), ULBs and Farmer Producer Organisations (FPOs) among others, which are considered as possible key entities for the actual market introduction, promotion, distribution and application of products in agriculture.

4. *Providing expertise and hand holding support to ULBs*: Aligning to the mandates of Swachh Maharashtra Mission (SMM), GIZ has commissioned a 'Waste to Energy Plant' in Nashik. This plant is working towards using the digestate to make compost and value-added products like PROM and TP.
   The consultant will provide the expertise and hand holding support to the Nashik, ULB on:
    a. Refining and adapting the product and processes for making the products, thus making it competitive in the market through technology insights and applying international and national experiences
    b. Technology support to ensure the products align to FCRO standards as well as certification under HARIT.
    c. Advice the Nashik Municipal Corporation in certification processes for HARIT
    d. Capacity development of ULB staff and operators on use of technologies and processes
    e. Develop SOPs around PROM and TP

5. *Co-operate and support State Agriculture University on testing of products*: GIZ is collaborating with Mahatma Phule Krishi Vidyapeeth (MPKV), the State Agriculture University based in Rahuri. MPKV will be testing the products like compost, PROM and TP for its suitability and use for agricultural applications. The Consultant will provide the needed support and information to facilitate MPKV, to conduct these experimental trials and tests of products for agricultural use.

6. *Knowledge Sharing and advocacy:*
   The learning and experiences drawn from this project will be captured as brochures and other communication materials, in consultation with GIZ. Consultant will organize consultative workshops with the policy makers and managers in Maharashtra to mainstream the learning from this assignment. Exposure and sensitization efforts will also be made in the other ProSoil project state of Madhya Pradesh, so that learning and experiences from Maharashtra can be adapted.

D. Expected Outputs:

1. Quality analysis against standards of FCRO and HARIT and the related analysis reports, of batches of products (compost, PROM, TP) produced by ULBs including the products from Waste to Energy plant in Nashik; is done. At least 300 samples to be tested
2. One Hygienization Unit is the Nashik WTE plat is set-up and functional
3. Develop at least 3 Standard Operating Procedures (SOPs) for certification and improving the market competitiveness of products, specifically PROM and TP
4. ULBs have tested and operationalised at least one viable business plans and models to close the loop i.e. urban-rural carbon and nutrition cycle
5. Develop 3 publicity and communication products around PROM and TP that can be used to create awareness as well as policy advocacy
6. Organize 2 events / workshops needed for knowledge sharing, capacity building and advocacy around urban organic compost like PROM and TP with the concerned stakeholders like UDD, Swatch Maharashtra Mission (SMM), NABARD, DOA.

E. Period and person days: (below are the stipulated person days required for undertaking this assignment:

a) Period of the assignment: 12 months
b) Person days:
   i. Principal / Lead Consultant: 60 days
   ii. Research Expert / Fellow: 12 months or at least 100 days
   iii. 2 Research Assistants: 6 months each or at least 100 days each

F. The assignment also requires:

a. Procurement, installation and operationalising a Hygienization Unit in the Nashik WTE plant. Estimated cost for installation of this unit is ~ Rs. 10,00,000/- (~ Rs. Ten Lakhs only). This will be based *on Actuals.*
b. Lab testing of PROM, compost and TP. This will be based *on actuals*

G. Travel requirements: (estimated)

Sl No	No. of trips	Trips to	Purpose	No. of days per trip
1	6	Nashik	- Installation of Hygienization Unit - Ensure the operationalization of the Unit - Hand Holding support to the ULB to ensure process testing, processing, certification and also implementation of business plans	4
2	4	MPKV, Rahuri	- Support in testing of compost for application in agriculture	3

3	2	Mumbai and other ULBs in Maharashtra	- Understanding the testing and certification processes in accredited labs - Meeting with partners like NABARD, UDD, DOA in Mumbai	3
4	2	One each to Mumbai and Bhopal	Stakeholder Consultation for sharing and advocacy with the stakeholders	1
5	2	Delhi	Meet the GIZ project team for inception and sharing of draft findings and progress	1

H. Location: Maharashtra State (and Madhya Pradesh)

I. Human resources

1. One Lead Consultant:
    a) Should have proven expertise in the field of urban waste management specifically around anaerobic digestion, resource recovery, production and use of innovative products like PROM and TP
    b) Should have a PhD in the relevant topic
    c) Should have more than 10 years of experience in the field of waste treatment and application of innovative technologies in waste management
    d) Should have successfully conducted research around developing and using innovative technologies in urban waste management like like co-generation, bio-methanation, biodegradation, bio-remediation etc. and published research papers and articles in national and international publication of repute
    e) Should have significant experience of working with international agencies and effective project management
    f) Should have worked with the government institutions specifically in Maharashtra
    g) Should have good command over written and spoken English

2. One Research Expert:
    a) Should have knowledge and expertise around testing and application of research methodologies in urban waste management
    b) Should have at least a Master's degree in the relevant field of engineering, natural resources management, urban waste management or related subject
    c) Should have at least 3 years of professional experiences in the relevant field
    d) Should have understanding of the context and worked in the state of Maharashtra
    e) Should be willing to travel to field and rural areas
    f) Should have good command over written and spoken English and Marathi
3. Two Research Assistants
    a. Should have at least a Bachelor's degree in the relevant field of engineering, natural resources management, statistics or related subject
    b. Should have expertise in conducting research, surveys and data collection including stakeholder interviews
    c. Should be willing to travel to field and rural areas
    d. Should have good command over written and spoken English and spoken skills in Hindi and Marathi

J. Payment Guidelines

Sl. no	Activities	Deliverables	Timeline
1	As advance during signing of the contract	First month after signing of contract	Month 1
2	1. Clarity and agreement on activities and timelines 2. Technology and equipment specifications or Hygienization unit is ready and agreed.	Inception report Hygienization Design	Month 3
2	1. Quality analysis of batches of products (compost, PROM, TP) produced by ULBs including the products from Waste to Energy plant in Nashik; is tested as per standards of FCRO and HARIT done 2. MPKV receives the compost, PROM and TP samples for experimental pilots 3. Hygienization Unit in the Nashik WTE plat is set-up and functional 4. Develop Standard Operating Procedures (SOPs) for certification and improving the market competitiveness of products, specifically PROM and TP 5. ULBs test and operationalise the viable business plans and models to close the loop i.e. urban-rural carbon and nutrition cycle	Mid Term report and field validation	Month 9
3	1. At least 3 stakeholders consultation is done with UDD[1], SMM[2], DOA[3] and NABARD in Maharashtra and Madhya Pradesh 2. Minimum of 3 publicity material (brochure, fact sheets, operating guide etc.) are developed and disseminated	• Draft Report • Final report • All the print ready soft copy of publicity materials • Workshop proceedings (including list of participants and discussions)	Month 12

K. Eligibility

The bidder should have proven experience:

- Sound expertise and experience on use of technologies like anaerobic digestion, resource recovery, production and use of innovative products like PROM and TP in urban waste management and specifically processes around composting
- Should have significant experiences and expertise in urban waste management, specifically around composting

[1] Urban Development Department
[2] Swatch Maharashtra Mission
[3] Department of Agriculture

- Should have past experiences in organizing policy consultations and workshops around urban waste management
- Should have produced quality documents around the topic of the assignment that includes
- Experience of Working with international organizations
- Provision of experienced staff - more than 10 years as team leader and at least 3 years of experience of research expert
- Should have worked in Maharashtra and have good understanding on urban waste management initiatives in the state

The bidder should be a registered entity in India and working for at least 5 years in India and with an average turn-over of INR 10 lakhs in last 3 consecutive years.

If the bid is through a consortium, the above financial eligibility criterion will be applicable to the Lead agency in the consortium.

L. Documents:

a. Capability document of the firm responding to the experiences and expertise as required by the assignment
b. Proposal:
    i. Part A: Technical Proposal detailing the following:
        - Understanding and response to the objectives and scope of work of the assignment
        - Details of Proposed Methodology
        - Intervention plans and activities
        - Work Plan
        - Execution and management of the project
        - Monitoring Plan
    ii. Part B: Financial Proposal (in the GIZ format)

c. Names and Resumes of the lead consultant / principal investigator and research expert highlighting the expertise and experiences as required for the assignment
d. At least last three consecutive years audited statements
e. Registration Certificate of the firm / lead firm
f. PAN and TAN details
g. Account details