Terms of Reference

Situational Analysis of Post-Harvest Losses across F&V value chains in Karnataka

Commissioned by GIZ - Green Logistics and Green Innovation Centre Project

1. Background and context

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH cooperates with the Department of Horticulture Government of Karnataka in implementing the "Sustainable Supply Chains for Perishables into Cities", Green Logistics Project – GLP and with the Ministry of Agriculture & Farmers Welfare (MoA) Government of India in implementing the Green Innovation Centres project. Both projects are working on agricultural value chains.

With the Green Logistics Project (GLP), GIZ supports the Government of Karnataka to improve the access of urban populations to fresh, regional food products in an adequate hygienic setting. The project aims at higher efficiency and reduced wastage in the fruit and vegetable supply chains. In order to make a contribution towards achieving this supply chain related output, the GLP will work with 5 horticultural FPOs.
Green Innovation Centre project (GIC) together with its partners is promoting tomato and potato value chains in the states of Karnataka and Maharashtra. Working with small scale farm enterprises as well as with up- and downstream businesses the project aims to increase farmer's income, employment and to improve regional food supply.

GIZ is a global service provider in the field of international cooperation for sustainable development. As a public-benefit federal enterprise, GIZ supports the German Government – in particular the Federal Ministry for Economic Cooperation and Development (BMZ) – and public and private sector clients in around 130 countries in achieving their objectives in sustainable development. With this aim, GIZ works together with its partners to develop effective solutions that offer people better prospects and sustainably improve their living conditions. Germany has been cooperating with India by providing expertise through GIZ for more than 50 years.
It is estimated that approximately 30% of fresh produce across value chains is lost due to wastage during its journey from the farm gate to consumer markets. The nature of post-harvest losses varies with crop, season and region. In horticultural produce, the stages at which post-harvest losses occur can be divided into five such as harvest, storage, transportation, marketing and consumption. In 2011-12, there was a loss of Rs 2.13 lakh crore on account of post-harvest losses) ASSOCHAM, 2013). Besides, market prices seem to influence losses significantly (e.g. dumping of tomatoes by farmers). There is a need to control this wastage in-order to address

food shortage and price issues for the consumer and ensure appropriate economic incentives for the producer.

2. Objectives of the assignment

In line with the conceptual approaches of the two projects the following fruits and vegetables were selected for the aforesaid study in consultation with the Department of Horticulture and the MoA:

Fruits and Vegetables	Reasons for taking up the study
Banana	• Highly perishable • Ranks No 1 fruit in terms of production in Karnataka • Complex supply chain including post-harvest handling and ripening • Availability almost throughout the year **Performance indicators (GLP)** Reduction of wastage from 29% to 20%
Tomato	• Highly perishable • Availability almost throughout the year • High losses caused by price fluctuations • Karnataka ranks No 2 in terms of production in India **Performance indicators (GLP/GIC)** Reduction of wastage from 20% to 14%
Greens (Spinach and coriander)	• Highly perishable • Gender sensitive • Highly nutritious **Performance indicators (GLP)** Reduction of wastage from 35% to 25%

Though the produce flow to different states depending upon the season, the present study will focus local wholesale and retail markets in Karnataka.
The overall objective of the consultant assignment is:

1) Identify and describe the current post harvest losses and post harvest handling, storage, transport and marketing systems for the above selected fruits and vegetables considering external factors like market prices
2) Determine constraints that farmers, producers traders, wholesalers and retailers face during handling, storage, transportation and marketing.
3) Recommend new approaches and define pilots to deal with and overcome some of these challenges

4) Task of consultant(s)

The consultant shall carry out the following tasks and activities:

- Describe and assess in a concise way important framework conditions which are responsible for post-harvest losses (including fluctuation of market prices) in the context of the specified value chains across the sector(see briefing paper template), this includes:
- Describe in a concise way responses to the core problems identified and perform gap assessment;
- Derive the wastages on account of market glut during the course of the study if any. In such a situation, supply- demand and price factors needs to be correlated and studied.
- Identify and prioritize options for closing these gaps;
- Based on these options, recommend interventions / pilot projects for the future which contribute to closing selected gaps
- Compile and prepare a list of relevant documents and literature;
- Prepare a list of relevant data sources, compile relevant data and statistics;
- Prepare a list of relevant persons and institutions;
- Present findings to the project teams; inform project teams on the progress of the study on a regular basis

In detail this includes the following points.

3.1 Preparation and coordination of a detailed work plan for the assignment

- Analysis and assessment of the present wastages across the value chain for the selected produce (quantitative and qualitative)
- Development of an outline of the envisaged plan to study the present wastage level and how to reduce the wastages
- Based on the findings of these assessments, development and coordination of a detailed work plan for the assignment

Expected output: work plan with tasks and timeline and intermediate results on wastages across the value chain and possible scope of improvement in reducing the wastages; identification of economic potential

3.2 Technology Generation - Development of recommendations for reducing the wastages across the value chain

- Development, discussion and documentation of feasible solutions to reduce the wastages –
  - Value chain mapping of the selected produce (based on the mappings that have been conducted before by the two projects)
  - Identify, describe and quantify the current post harvest losses across the specific value chains starting from farm to retailers end of the above selected fruits and vegetables
  - Determine constrains that farmers, traders, local wholesalers and local retailers face during handling, storage, transportation and marketing locally.
  - Finding interventions through which wastages can be reduced

- Elaboration and documentation of methodology and findings
  - Procedure and Process to be followed in the reduction wastage study
  - Quantifying in value terms on the savings by adapting those interventions

Expected output:

- Final Report on wastage reduction intervention submitted to GLP/Green Innovation Centre team for approval.

4 Selection and Profile of consultant firm

Interested consultant firms shall submit 3 documents – Company Profile, Technical Proposal and Financial proposal. The Technical Proposal shall contain details of the approach and detailed work plan with timelines for fulfilling the expected outputs and assignments outlined in Section 3. The Financial Proposal should clearly identify as a separate amount, the local taxes, duties, fees, levies, and other charges imposed under the applicable law on the consultants, sub-consultants and their personnel.

- The consultant firm should have prior experience in conducting similar wastage studies for fruits and vegetables in India
- Proposed interventions recommended by the consultant firm for reducing post-harvest losses in their previous studies being implemented by the partner organisations is desirable.
- Familiarity in terms of cultivation and agro climatic conditions for Karnataka and Maharashtra for selected fruits and veg is desirable
- Ability to deliver results on as per a strict timeline preferably within 3 months

The interested firms should provide a list of key professional positions whose CV and experience would be evaluated

No.	Key professional	Qualification	No of positons	Area and specific expertise
1	Senior Technical Executive	M.Sc Agriculture/ Horticulture / Science/Statistics with 5 years' experience in field research and statistical analysis	1	Experience in leading the team and interpretation of raw data using statistical tools and preparation of reports
2	Junior Technical Executive	BSc agriculture/ horticulture/ science/ statistics Graduate with 3 years' experience in working among farmers.	1	Experience in developing questionnaires and conducting interviews among different stakeholders across the value chain. Excellent oral and written

				communication in English and Kannada is a must

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5. Location and duration

The consultant firm will work in the below mentioned areas where the specified commodities i.e. banana, tomato and greens are produced in Karnataka.

Location	Taluk	District	Produce
Sidhalghatta	Sidlaghatta	Chikkaballapur	
Anekal	Anekal	Bangalore Rural	Tomato, Banana, Greens
Srigiripura	Magadi	Ramanagara	
Yagichi	Belur	Hassan	
Husainpur	Hunsur	Mysuru	
-	Kadur, Chikmagalur,	Chikmagalur	Tomato

The study may be focussed on Anekal for Banana and Greens. For tomato Anekal, Kadur and Chikamagalur to be focussed. Nevertheless as the part of the assignment, the consultant need to visit all the above mentioned location and interact with all the actors in the value chain.

Besides the locations a set of relevant actors has been pre-selected as follows:

No	Name of FPO	Location	Taluk	District
1	Sadahamma Horticulture Farmers Producer Company Ltd	Sidhalghatta	Sidlaghatta	Chikkaballapur
2	Anekal Horticulture Farmers Producer Company Ltd	Anekal	Anekal	Bangalore Rural
3	Srigiripura Horticulture Farmers Producer Company Ltd	Srigiripura	Magadi	Ramanagara
4	Yagichi Horticulture Farmers Producer Company Ltd	Yagichi	Belur	Hassan
5	Husainpur Horticulture Farmers Producer Company Ltd	Husainpur	Hunsur	Mysuru

Additional actors will be identified in coordination with GIZ.

The duration of the contract will be up to 50 expert man days for each produce over a period of 3 months contingent on signing of contract but ideally starting from 1st Oct 2017 to 31st Dec 2017. The tentative schedules are

- 01/10 - 25/10 : Preparation of draft report- up to 25 working days including field work (10 days report writing, 15 days field work)
- 26/10 : Briefing of project team - 1 working day
- 27/10 - 29/10 : Stakeholder workshop - up to 3 working days (2 days preparation + 1 day workshop)
- 01/11 - 03/11: Integrating feedback from stakeholders, incorporation for preparing Intermediate report. Planning of trail schedules

- 04/11 - 20/11 : Conducting field trails and collecting participant data and feedback for inclusion in the report
- 21/12 - 25/12 : Finishing touches to the Study
- 31/12 : Final presentation on report to GIZ project staff and Department of Horticulture and other Government/Public partners

6. **Reporting and deliverables**

The consultant will report to the Technical Expert of the GLP and GIC in Bengaluru and keep the team well informed about the work progress. The Consultant will submit the report in a hard copy and in a soft copy of MS Word along with photos and videos of the field activities conducted during the study. These findings will be written and documented in an easy and understandable way to the staffs of FPO. The reporting template is suggested below:

1. Situation & problem analysis ---------- max. 7 pages

1.1 Agriculture and rural livelihoods (max 1-2 pages)

- Important trends in agricultural development (land resources, inputs, production, marketing, prices, ...)
- Agricultural infrastructure (education, training, extension & advisory services, weather forecasting, information systems, ...)
- Changing rural and agricultural livelihoods (demography and socio-economic profile of farm households, ownership and size of land holdings, role of farm and non-farm income opportunities,
- Identification of core problems for in the value chain of selected fruits and veg (this is the major purpose of this section)

1.2 Post Harvest Management (5-6 pages)

- Framework conditions for Post-Harvest (policies and regulation)
- Inventory and description of existing post-harvest and market infrastructure
- Outreach scope and depth of these resources
- Sustainability-viability of post-harvest and market infrastructure
- Stakeholder analysis: role of government, public and private sector
- Agricultural infrastructure (technology, information systems, PPP's etc)
- Demand for and use, and concurrent availability of post-harvest infrastructure
- Identification of core problems as regards as post-harvest and agri marketing infrastructure to contribute to sustaining rural and agricultural livelihoods / reducing production and go to market wastage incurred of farming and rural households (this is the major purpose of this section)

2. Responses to identified core problems and their gaps ---------- max. 5 pages

- Government policies
- Government programmes, interventions

- Initiatives of important stakeholders (i.e., NABARD, ...)
- Initiatives of the Agricultural industry (public and private)
- Initiatives of agribusiness and other real sector companies
- Initiatives of international organisations / donors
- Models and Relevance of Integrated Risk Management Solutions
- Identification of gaps in these responses with respect to sustaining rural and agricultural livelihoods / reducing risks of farming and rural households (this is the major purpose of this section)

3. Options for closing identified gaps ---------- max. 8 pages

- Which interventions (projects) promise to reduce wastage incurred by farming and rural households through improved post harvest management and related approaches?
- Changes expected from these interventions (projects)
- Which stakeholders would be required and are most probably committed to implement these interventions (projects)?
- Who benefits how from these interventions (projects)?

4. Recommended interventions / projects ----------

Project A

- Main partner:
- Other partners / intermediaries:
- Objective:
- Expected outputs of project activities:
- Institutional capacity building and human resource development measures:
- Target groups/beneficiaries:

Project B

- Main partner:
- Other partners / intermediaries:
- Objective:
- Expected outputs of project activities:
- Institutional capacity building and human resource development measures:
- Target groups/beneficiaries:

Project C

- Main partner:
- Other partners / intermediaries:
- Objective:
- Expected outputs of project activities:
- Institutional capacity building and human resource development measures:
- Target groups/beneficiaries:

Annexes

- List and compilation of relevant documents and literature
- List data and information sources, compilation of relevant data and statistics

- List of relevant persons and institutions
- Other annexes as deemed necessary

Deliverables:

- Report in English language in accordance with the report template;
- Compilation of relevant documents;
- Compilation of relevant data and statistics.

All the deliverables will be produced in English.