**CNFA-AMD Project**

**US-Pakistan Partnership for Agricultural Market Development**

**SCOPE OF WORK**

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| Project Name | CNFA-AMD/ Project Number AID-391-C-15-00003 |
| Consultancy Assignment | ISTTA Consultant – High Value/Off Season Vegetable Program |
| Consultant Title | ISTTA for On farm water management (HEIS-Drip Irrigation) & fertigation for HVOSV sector. . |
| Reports to | Chief Technical Advisor& Senior Value Chain Specialist – AMD |
| Place of Performance | Punjab |
| LOE | 21 Days |
| Est. Period of Performance | July 17 to August 12,2017 |

**Project Description:**

The U.S.-Pakistan Partnership for Agricultural Market Development (AMD) activity in Pakistan is a USAID funded activity implemented by CNFA with the goal of supporting the development of Pakistan’s commercial agriculture. This is envisioned to be achieved through improving the ability of Pakistan’s agriculture and livestock sectors to meet both international and domestic demands and requirements in AMD’s four targeted product lines: Citrus, Mango, High Value/Off Season Vegetables and Livestock. AMD envisions transforming the four targeted product lines into efficient, private sector-led value chains that deliver competitive products to domestic and export markets. AMD’s targeted training, matching grants, and technical assistance will leverage private sector investment and encourage innovation. Together, these approaches will support upgrades, streamlining of supply chains, optimization of profit margins, and an increase in the participation of women entrepreneurs, ultimately making Pakistani mango, citrus, meat and HV/OSV more profitable and competitive.

**Background Information:**

The horticulture sector contributes about 12% of GDP and provides employment and incomes to several actors along the value chains. An estimated 13.67 MMT of horticultural products are grown annually with post-harvest losses averaging about 25%. Only 4% of the annual production is exported, garnering less than 50% of average world prices due to poor quality of produce and to sales in low-value markets.

Most fruits and vegetables are sold in fresh form. Little value is added in the way of sorting, grading, or packaging and post-harvest losses are unsustainably high. A very low percentage of fruits and vegetables are processed. Farmers face numerous challenges maintaining product value from harvest to market. The limited availability of cold chain facilities is a major constraint, resulting in products with a short shelf life that quickly loses its freshness.

Over 35 kinds of vegetables are grown in various ecological zones in Pakistan. At the moment Pakistan is exporting very limited number and quantity of vegetables mainly to GCC, some European countries and neighboring Afghanistan. Vegetable production in Pakistan, especially HV/OSV, faces marketing constraints due to a lack of post-harvest handling facilities for grading, sorting, packaging, pre-cooling and cold storage. According to estimates, up-to 40% of fresh produce is lost at post-harvest stage. Amongst other reasons, the prime reason for these losses is the absence of field heat removal and cold chain management at all levels. AMD aims to strengthen the HV/OSV value chain by partnering with private-sector investors to upgrade or establish centralized grading, packing and refrigerated cold storage hubs.

As part of an integrated strategy to formalize a consistent and improved supply of produce, where appropriate, AMD intends to support competitively selected businesses to establish/upgrade cold chain facilities at processor level, which will reduce post-harvest losses and increase marketing time for the fresh vegetables.

**Objective of the Technical Assistance:**

AMD intends to hire an international Horticulture (specialized in vegetable production under controlled production systems with HEIS to support the fertigation).

**Assignment Scope:**

The consultant’s tasks will include but not be limited to:

Demonstrate hands on training and TA for use of High efficiency irrigation systems particularly drip irrigation for the best use of water and water conservation as a resource. Also demonstrate the use of controlled fertilizer application through fertigation systems.

* Scoping for Greenhouse and semi controlled HVOSV for water management and HEIS systems at selected program sites
* Detailed GAP analysis for technology use for precision irrigation and water management to enhance the water use efficiency and precision in input use for fertilizers and nutrients.
* High efficiency irrigation system- in the controlled and semi controlled green houses, vegetable tunnels
* HEIS for open field and low tunnels of vegetable production systems at AMD selected sites.
* Onsite trainings for irrigation requirements according to the environment and phonological stages of summer and winter vegetables.
* Application dose and time of fertilizers and micro nutrients with safe use of water to enhance the quality and production of vegetables under controlled environment.
* Develop appropriate strategies to assist program beneficiaries for better water harvest under HEIS systems for high value vegetable to enhance the quality and meet the food safety standards for high end export markets.

**DELIVERABLES:**

1. Develop a detailed plan and a brief suggested methodology during the period of assignment and get it approved by AMD COP or his designee. This should be finalized prior to travel to Pakistan;
2. Evaluate present issues of the vegetable sector and make commendations to stakeholders in Pakistan;
3. Assist the HV/OSV grantees to link with value added businesses for the marketing of B & C grade natural produce for value addition;
4. Provide 1-page biweekly updates to the COP, or his designee;
5. Submit the draft of the final report along with power point presentation to CNFA within 10 business days after the Design and Recommendations of the Horticulture Value Chain activity
6. Submit Final Report along with power point presentation to CNFA, using AMD template, within 5 business days upon completion of the assignment.
7. Any other tasks assigned by the COP or Chief Technical Advisor relating to design and development of vegetable production, processing, and handling practices interventions.

**QUALIFICATIONS:**

* Graduate or doctorate degree in Agriculture, horticulture, Agribusiness or other related field;
* Over 10 year’s practical industry experience in use of Drip Irrigation and controlled environment plant production systems including greenhouses, shade-houses.
* Work experience with international donors, preferably with USAID-sponsored programs or other similar development projects;
* Demonstrated understanding of Pakistan and/or the region, a plus.
* Hands on experience in sourcing of raw material, nutrients, growth regulators, packaging material, washing, grading, transportation and marketing both local as well as international markets.
* Hands on experience in Good Agricultural practices and Global GAP certification for individual growers and groups.
* Understanding of phyto sanitary practices and regulations for compliance.
* Experience in training and development of workers in greenhouse production

**LOE, Period and Place of Performance**:

The level of effort (LOE) and the periods for this consultancy include 21 days around July 15 onward.

Estimated level of effort (LOE) for the assignment::21 Days (detail given below)

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| --- | --- | --- | --- | --- | --- | --- |
| **Weeks** | **W1** | **W2** | **W3** | **W4** | **W5** | **Total days** |
| Activity |  |  |  |  |  |  |
| Review of back ground information, reports reading, contacts for meetings and work plan development | 03 |  |  |  |  | 03 |
| Development of appropriate strategies to assist program beneficiaries in improved and best management practices in controlled vegetable operations. |  | 03 |  |  |  | 03 |
| Technical assistance and onsite trainings for drip irrigation and fertigation to the HVOSV farmers. |  | 03 | 04 | 03 |  | 10 |
| Submit a final report covering all aspects of the STTA using the AMD template within 10 business days of completion of assignment. |  |  |  |  | 03 | 03 |
| Power Point presentation and first draft review with AMD team |  |  |  |  | 02 | 02 |
| Total STTA days | 03 | 06 | 04 | 03 | 05 | 21 |