

PRE-QUALIFICATION DOCUMENT (PQD)

PUNJAB IRRIGATED - AGRICULTURE PRODUCTIVITY IMPROVEMENT PROJECT (PIPIP)

Installations of High Efficiency Irrigation Systems

1. Introduction

Successful international models of agricultural developments envisage integrated/comprehensive development approach, which provides a complete package of on farm water management interventions required at the farm level. A package of OFWM interventions comprising of watercourse improvement, additional lining of already improved watercourses, development of barani irrigations schemes, LASER land leveling, high efficiency irrigation systems, irrigation management advisory service (irrigation scheduling) etc. has, accordingly, been prepared under the scheme. Almost all components of proposed project are under implementation/recently completed as independent schemes and the same are planned to be promoted through integrated approach.

2. The Project

The World Bank assisted “Punjab Irrigated-Agriculture Productivity Improvement Project (PIPIP)” is under implementation since July 2012 in the entire province. It spans over a period of five years (2012-13 to 2016-17) with a total cost of Rs. 36,000 million (government share of Rs. 21,250 million, all IDA financing, and farmers’ contribution of Rs. 14,750 million). The PIPIP envisages installation of high efficiency irrigation systems (HEISs) on 120,000 acres, improvement of 5,500 unimproved watercourses, completion of lining on 1,500 already improved watercourses in canal commands, rehabilitation of 2,000 irrigation schemes outside the canal commands and provision of 3,000 LASER units to the farmers/service providers.

3. Project Objectives

The overall project development objective (PDO) is to improve water productivity i.e. producing more crop per drop. It will be achieved through increasing delivery efficiency, adopting improved irrigation practices, promoting crop diversification, and

effective application of non-water inputs. The PDO would contribute to increased agricultural production, more employment opportunities in rural areas, higher incomes from the farming, better living standards of the farmers, and improved environment.

4. Key Components

- ◆ Installation of drip and sprinkler irrigation systems on 120,000 acres
- ◆ Provision of 3,000 LASER units to farmers/service providers
- ◆ Improvement of 5,500 unimproved canal area watercourses
- ◆ Completion of 1,500 partially improved watercourses
- ◆ Rehabilitation of 2,000 irrigation schemes outside canal commands

5. Installation of High Efficiency Irrigation Systems (HEISs)

It is well established fact that irrigation water is the most critical factor in crop production and its efficient use enhances productivity of other non-water inputs as well. The Punjab is facing severe shortage of irrigation water for last many years on one hand and there is inefficient use of available resources on the other. The same is resulting in much lower agricultural productivity from highly productive resource base of the province. High efficiency irrigation systems have been found water and nutrient efficient and most appropriate option to address various crop production issues.

Drip, bubbler, conventional sprinkler, rain-gun, center pivot etc. are together referred to as high efficiency irrigation systems (HEISs) which use pipes for conveyance of water from the source to points of use. In drip or trickle irrigation, water is provided to individual plants by means of small emitters in the form of droplets. Bubbler irrigation is very similar to trickle irrigation except that the water is delivered to the plants through micro sprinklers mounted on small spikes. In rain-gun irrigation systems, water is pumped at high pressure through a piped system and sprayed over the field.

2.1 Drip Irrigation System

Drip irrigation also called as trickle/micro irrigation is the most efficient technology that makes highly effective use of water, fertilizers, and nutrients. Its main principle is to apply water and other inputs slowly, regularly, and frequently as close to the plant roots as possible through emitters installed on plastic pipes laid out in the field. Regular and timely availability of nutrients throughout the plant growth period as per exact requirements and maintenance of favorable soil moisture conditions facilitate to maximize crop productivity. Drip irrigation technology is best suited for orchards and high value row crops such as cotton, maize, sugarcane, vegetables etc. It has become the most valued innovation, which optimizes use of water and fertilizers by enhancing the irrigation efficiency as much as 95

percent. A typical drip system includes a pumping unit, fertilizer tank, connecting/jointing fittings, filters, underground main pipeline with field hydrants, header pipes, laterals, emitters etc.

2.2 Sprinkler Irrigation System

The sprinkler system is the overhead irrigation whereby water is sprayed on the soil/crop somewhat like rain. A typical sprinkling unit comprises of an electric or diesel pumping unit, a portable or buried main pipeline with hydrants at predetermined intervals, and one or more sprinklers units attached to hydrants or hose.

6. Cost Sharing for HEIS

HEISs are being installed on cost sharing basis between government and the beneficiary farmers whereby, government is providing 60 percent subsidy of total scheme while the remaining 40 percent cost is contributed by the beneficiary farmers. In addition, government is also providing Rs. 10,000 per acre of scheme area for construction of water storage pond, if needed, on the basis of site specific technical requirements.

7. Procedure for Installation of HEISs

Installation of high efficiency irrigation systems (HEISs) component of Punjab Irrigated-Agriculture Productivity Improvement Project (PIPIP) is being executed on turnkey basis through supply and service companies (SSCs) pre-qualified by the Agriculture Department with following arrangements.

- i. At the start of financial year, applications from interested farmers are invited through advertisement in the print and electronic media
- ii. The eligible applicants select SSC of their own choice amongst pre-qualified firms.
- iii. The selected SSC survey the site, prepares design and bill of quantity (BOQ), and submits to the Project-Implementation Supervision Consultants (PISC) for review and approval.
- iv. The farmer, after approval of design and cost estimates deposits his/her entire share in the form of pay order/bank draft drawn in the name of selected SSC.
- v. After receipt of farmer share, Director General Agriculture (WM)/Project Director issues the work order and advises the concerned SSC to supply the HEIS equipment/material at site, which is afterwards verified by the PSC for quality and quantity viz-a-viz approved standards/specifications.
- vi. After material verification, the concerned SSC completes installation of system at site.
- vii. On completion of installation, the Project-Implementation Supervision Consultants (PISC) certifies the final completion as per approved design and standards/specifications.

- viii. All HEIS works are executed under a tripartite agreement signed between Department, SSC, and the beneficiary farmer.

8. Eligibility Criteria for Prequalification of Supply and Service Companies

The firm(s)/joint venture(s) having the following strength/ background would be eligible for prequalification as SSC for the project period, which will be renewed every year based on satisfactory performance.

- (i) Preferably must have an office in Pakistan and willing to open minimum three (3) more offices/ dealerships/ after sales service center at various Divisional headquarters in the province;
- (ii) Must registered with Income Tax/ Sales Tax Departments (Attach evidence in the form of Registration Certificate/ Number supported by latest / updated renewal);
- (iii) Must be in business for last five years;
- (iv) Must have experience of completing similar assignments on at least 500 acres during last five (05) years (Attach list of projects with location, type of system installed and cost incurred and furnish any additional documents to support relevant experience of firm(s)/Joint Venture(s);
- (v) The local firms are encouraged to make joint ventures with the foreign firms. In case of joint venture of local firm with foreign principal, the experience of later elsewhere in the world will be considered.
- (vi) Must be available inventory of HEIS equipment of standards & specifications approved by the Punjab Agriculture Department to install the systems on at least 150 acres.
- (vii) Must have mix of professional staff including minimum five Engineers, three Agricultural Experts including Agronomist, Horticulturist, Soil Scientist and five Diploma Engineers (Provide list of staff and their C.Vs indicating qualifications, their registration with professional institutions & relevant experience. The firm will also furnish undertaking to recruit the additional staff as per project requirements, if needed);
- (viii) Must have minimum annual turnover of Rs. 5 million;
- (ix) Must provide affidavit confirming that (a) applicant firm (s)/joint venture(s) have never been blacklisted by any government department. (if ever black listed, then provide the case history and current status of the firm regarding this decision) (b) All the information provided by the applicant firm/joint venture are correct.
- (x) Must attach pay order/ bank draft amounting to Rs. 10,000/- in the name of Director General Agriculture (Water Management) Punjab, Lahore as non-refundable processing fee for pre-qualification;

**Directorate General Agriculture
(Water Management) Punjab
21-Agha Khan Soyyum
(Davis) Road, Lahore, Pakistan
Tel: +92-42-99200703
Fax: +92-42-99200702
Email: pipipwm@gmail.com**