

TERMS OF REFERENCE (TORs)

CONSULTANCY SERVICES FOR DETAILED ENGINEERING DESIGN AND CONSTRUCTION SUPERVISION OF SUB-SCHEMES (CIVIL WORKS) UNDER THE SINDH WATER AND AGRICULTURE TRANSFORMATION PROJECT, AGRICULTURE DEPARTMENT GOVERNMENT OF SINDH **Activity Reference No: PK-SAD-367831-CS-CQS**

1. Background

The project will help kickstart a transformation process that will boost resilience to future climate shocks, such as floods and droughts, through three mechanisms: (i) creating a modern integrated water resources management (IWRM) system; (ii) demonstrating proof of concept in increasing agricultural water productivity for selected farmer organisation (FO) subprojects; and (iii) adjusting key policies that will provide the enabling environment to scale up these successes in the future. A successful demonstration of significant increases in agricultural water productivity at the FO level will have a transformational impact, potentially leading to replication in other areas of Sindh. The project supports critical policy reforms by using investment project financing (IPF) with Performance-based Conditions (PBC) modality.

The project has started its six-year implementation period from January 2023 with the 4 major program components. Component 3 *Agriculture Incentives and Investments* will be the focus of this assignment which includes support for on-farm water management; smart subsidy to incentivize a shift to water-thrifty crops like horticulture, oils seeds and pulses; cost-sharing grants for farmers and SMEs to develop value chains of high-value crops like horticulture; improve agriculture statistics management; modernization of market information management; improve management of salinity-affected lands and water; and help farmers adopt climate-smart agriculture practices and Component 5 *Agriculture Flood Emergency*: This includes support to farmers affected by the floods of August 2022 in their endeavors for restoration of crop cultivation through cash transfers. This is being implemented by the Agriculture Delivery Unit (ADU) under the Agriculture Department, Government of Sindh.

2. Consultancy Services:

Consultancy services are required by the Agriculture Delivery Unit for the civil works to rehabilitate the deteriorated/dilapidated engineering constructed facilities for existing infrastructure of agriculture extension, agriculture marketing and a new building for soil salinity and research lab under agriculture research. The consultant is required to undertake, condition assessment, soil investigations, location assessment, preliminary and conceptual/ detailed designs, construction drawings and act as Project Manager/ Engineer. The consultant will assist the ADU for procurement process, contract management, quality control and supervision of the civil works (sub-schemes).

3. Nature of Civil Works/Sub-schemes and its Locations

The Agriculture Extension Wing of the Agriculture Department has office facilities at several locations that were adversely affected by the 2022 floods and needs rehabilitation keeping in view to upgrade to meet modern usage of the facilities.

Similarly, there are offices of the Market Committees in wholesale markets of 14 district and offices of the Agriculture Marketing Department in head office and 4 divisional headquarters that are in dilapidated condition due to poor operation and maintenance and need urgent rehabilitation and modernization.

Furthermore, the Agriculture Research Department, Sindh has laboratory facilities in most of the districts of Sindh, out of which six labs need rehabilitation and modernization, additionally a new building for establishing Center of Excellence in Soil Salinity and Reclamation at Research Institute in Tandojam is required.

A site visit of the concerned facilities can be organized upon request.

The envisaged civil works/sub-schemes are, but not limited, to those listed in the following table for illustration purposes:

S.No	Sub-Scheme Category	Institution/Department	Location
1	Rehabilitation and modernization of existing offices through renovation at head quarter/field levels/ /wholesale markets.	Agriculture Marketing Department, Sindh	04 locations (Sub-scheme areas to be identified). The numbers of sub-schemes may increase/ decrease depending upon the condition assessment, engineer's estimation and cost allocation.
		Agriculture Market Committees	14 office buildings of the market committees in wholesale markets at District Karachi, Hyderabad, Tando Bago, Mirpurkhas, Sanghar Shahdadpur, Tando Adam, Sukkur, Nawabshah, Larkana, Shahdad Kot, Shikarpur, Jacobabad, Kandh Kot under Agriculture Marketing, Sindh.
2	Rehabilitation/ Modernization of New & Existing Agriculture Extension facilities/ Offices	Agriculture Extension Department, Sindh	Rehabilitation of Agriculture Extension, Sindh offices on Left Bank Canal in 6 districts (Ghotki, Sukkur, khairpur, T.M khan, Sanghar and Badin).

3	Establish & rehabilitation/modernization of new & existing fertilizers and pesticides laboratories		05 Fertilizer & Pesticide Labs – Sukkur, Larkana, Mirpurkhas, Hyderabad and Nawabshah as Sub-Scheme areas.
4	Establishment of Screen house (1200 Sqft)	Agriculture Research Department, Sindh	At Tandojam District Hyderabad
5	Renovation of district soil & water testing laboratories		Sukkur, Khairpur, Sanghar, Mirpurkhas, Hyderabad, and Badin
6	Renovation of glass/ screen house at SS&RRI Tandojam		At Tandojam District Hyderabad
7	Construction of New Building for Centre of Excellence in Salinity and Reclamation Research @Tandojam		At Agriculture Research Institute, Tandojam, District Hyderabad

4. Purpose and Objectives of Consultancy Services

The Agriculture Delivery Unit is implementing the SWAT (Agriculture Component) project and it is seeking Engineering/Architect consultancy services (Consultant) for detailed review and assessment of the proposed sub-scheme sites including site investigation with geotechnical investigations, feasibility studies, preliminary designs, assist ADU in social and environmental screening and cost estimates and specifications for items of works. Once the sites are finalized, the consultant will prepare detailed architectural/engineering drawings and bidding documents. The Consultant will assist ADU in preparing contract packages, preparation of procurement documents, procurement of construction contractors, evaluation of bids, contract award and project management, and detailed supervision of construction for monitoring, evaluation, quality assurance, implementation of environment and social management plan or other safeguard instruments, processing of payments, completion, closing of contracts including provision of required staffing during Defect Liability Period of six months. To provide consultancy services for the identification of new Sub-schemes, conceptual design considering its usage for particular user's needs, detailed engineering design, preparation of bidding documents and contract packages preparation and issuance of construction drawings 6 months and construction supervision for 18 months and keep minimum required staffing for the DLP for additional 12 months. The consultant will provide qualified and reasonable staffing for carrying out the works for the assessment survey, planning and design phase and providing construction supervision services, as mentioned in this TOR for the Sub-schemes under the regulations of the World Bank, or other current relevant regulations. The consultant will provide soil investigations services which will include condition assessment of the sub-schemes, preparation of bidding documents including bidding drawings, BOQs, Engineering estimates, coordination with agencies and

acquiring NOCs and approvals for utilities, collecting and analyzing data to be used to optimize and comply with the design on new standards, undertake the detailed design, preparation of bidding documents and contract packages and finally conduct Construction Supervision and Contract Management, handover the project to the user and undertake all relevant activities to close the project as per the contract agreement.

The Consultant will assess compliance with the World Bank regulations in planning, designing, construction supervision and contract management of the project activities.

Consultants' Selection Method

Consultants will be selected in accordance with the Consultant Qualification Selection (CQS) method as set out in the World Bank's Procurement Regulations September 2023.

5. SCOPE OF SERVICES:

- a. Preparing monitorable time-bound implementation plans for overall schemes and sub-schemes level and lower-level breakdown activities' (with start, finish, milestone dates and cost estimates). These plans will be used for monitoring planned versus actual physical and financial progress. The consultant shall use Primavera P6 to undertake the project management.
- b. Carry out a site survey to assess the damages and needs of rehabilitation and modernization
- c. Collect data related to pre-disaster X-sections, construction drawings & designs and floor plans.
- d. Collect material samples from the sites to analyze and determine the sustainability, this will include the soil classifications, seepage, salinity, and topography of the area.
- e. Conducting subsoil investigations.
- f. Implementation of environment, Social Safeguards, Health and Safety and assist ADU in E&S Screening.
- g. Preparing conceptual/detailed architectural/engineering designs on modern and latest design codes and standards
- h. Preparing Engineer's estimate based on prevailing market rates and cost-breakups with a consolidated BOQ for the work packages.
- i. Assisting in appropriate packaging of construction activities to improve transparency, efficiency and economy considering the locality constraints and other factors like capacity optimization of the contractors, consultants and the ADU.
- j. Preparing draft and final bidding/tender documents (10 copies) (Contract Specification, Condition of Contract, Bill of Quantities) and assisting in the evaluation of bids as per World Bank procurement regulations using appropriate procurement documents
- k. The bidding document shall include Instructions to Bidders customized and contextualized through Bid Data Sheet, Eligibility, Qualifications and Experience Criteria, General Conditions of Contract customized and contextualized through Special Conditions of Contract, Bid Forms, Bill of Quantities and Technical Specifications, and other sections as warranted under World Bank requirements.

- l. Provide necessary support to the Client in all aspects of the procurement process for civil works contracts in accordance with the World Bank Procurement Regulations. The support shall include but not limited to the following:
 - i. Assist in the pre-bid meetings (as per requirement) and site visits of interested bidders (if applicable), preparation of responses for bidders.
 - ii. Assist Procurement Committee in preparation of Bid Evaluation Report with Recommendation of award of contracts.
 - iii. detailing steps to be taken to deliver the full project.
- m. Assisting in evaluation of bids, and attending pre-bid meetings, preparing minutes and issuing addendums or any changes in the bidding documents, issue construction drawings, establish work methodology to undertake detailed supervision.
- n. Assisting in award of contracts, contract management (keeping specified and required contract documents complete, updated and in files including guarantees and warranties).
- o. Performing detailed supervision of construction to ensure complete compliance with the construction drawings, technical specifications, ESMPs and various stipulations contained in the contract documents including construction contractors' personnel's qualifications and strengths.
- p. Keeping track of planned and actual progress, monitoring compliance with all specified duties, obligations, and performance, processing variation orders and extensions, processing of closing out contracts, developing and monitoring progress on 'punch lists' during defect liability periods, etc.)
- q. Developing and implementing plans for assurance of quality of construction including that related to construction contractors' workplans, site facilities, layout of works, workmanship, materials, sampling and testing.
- r. All construction activities will be carried out by the contractors' according to plans approved by consultant who will also be responsible for initial acceptance of satisfactorily completed items of works and for their review and certification in and including the requests for payments by the contractors.
- s. Preparing and submitting periodic progress reports. Frequency and contents of reports will be in accordance with consultations with ADU.
- t. Any change in scope must be monitored and shall be immediately brought into the notice of the ADU with cost estimates and shall be executed as per the approval of ADU and contract agreement relevant clauses dealing with variations.
- u. Review Interim Payments Certificates submitted by the contractors and check all works are completed of payment claimed.
- v. Perform detailed supervision of civil works construction sites to ensure complete compliance with the drawings, technical specifications, or other safeguard instruments, and various stipulations contained in the contract documents including construction contractors' personnel's qualifications and strengths.
- w. Contract management (keeping specified and required contract documents complete, updated, and in files including guarantees and warranties, keeping track of planned and actual progress, monitoring compliance with all specified duties, obligations, and performance, processing variation orders and extensions, processing closing out

- contracts, developing and monitoring progress on ‘punch lists’ during defect liability periods, etc.)
- x. Developing and implementing plans for assurance of the quality of construction including that related to construction contractors’ work plans, site facilities, layout of works, workmanship, materials, sampling, and testing.
 - y. Supervise that all construction activities are conducted by the contractor in according to plans approved by the ADU and Consultant.
 - z. The consultant shall also prepare site specific labor management plan, waste management plan, and design compatible to climate change resilience. The consultant will also outline the OHS plan, site safety plan, emergency preparedness and response plan.
 - aa. Any other responsibility related to the project activities.

The Consultant will report directly to the ADU. The consultant would preferably have office/site offices in project focused areas as per the best engineering practices to control the project so that the project activities can be completed in specified time period, cost and quality. The consultant will coordinate and interact with other stakeholders, government and private agencies, and members of public and beneficiary communities as appropriate. PD ADU will nominate the counterpart team who will coordinate the works.

6. PROJECT IMPLEMENTATION SCHEDULE

Planning, design and bidding phase will be completed in 6 months and construction supervision phase will be completed in 18 months:

7. REPORTING REQUIREMENTS/DELIVERABLES

The consultant will submit the following reports/deliverables in planning, designing and construction supervision phases.

a) Planning, Designing and Bidding Phase

S.#	Deliverable	Time Lines
1.	Inception Report including include the Consultant’s detailed work program, approach, methodology, scope staffing schedule, inspection procedures, project control mechanism and delivery milestones.	Within 02 weeks of commencement of services
2.	Initial Assessment and Survey & Investigations	One Month after the date of mobilization
3.	Preliminary Designs of Proposed Sub Projects	Two months from date of mobilization
4.	Detail Desings of Proposed Sub Projects	Three months from date of mobilization
5.	Preparation of Detailed Drawings, Estimates, BOQ & Technical Specifications	Four months from date of mobilization
6.	Preparation of Bidding Documents and Contract Packages –	Five months from

	Including Inclusion of ESMP or other safeguard requirements.	date of mobilization
7.	Bid Evaluation/ Recommendation of Award Report	When requirement
8.	Preparation of Construction Drawings	At the completion of the planning & designing phase

b) Construction & Post- Construction Phase

S.#	Deliverable	Time Lines
1.	<p>Monthly Progress Reports</p> <p>Monthly reports are to include works accomplished, the status of payment made, claims for cost or time extensions, changes in scope, variation orders, graphical representation of progress against the approved program, charts of physical progress for major items, relevant photographs, detail of impediments to the works, report, actions required by ADU and give recommendations on how these problems may be overcome. At the initial instance, draft contents of such report are to be prepared and approved by the ADU. Project Schedule will be shared on a Primavera P6 format for project control</p>	Till 10 th of Every Month
2.	<p>Quarterly & Periodic Reports</p> <p>The Consultant will prepare a comprehensive report summarizing all activities including safeguarding the services at the end of each quarter and also at other times when warranted by either party. Such reports shall summarize not only the activities of the “Engineer in charge” but also the progress of the contract including all variations and change orders, the status and brief description of the contractor’s claims (if any), technical & contractual problems being encountered, and other relevant information. At the initial instance, draft contents of such report are to be prepared and approved by the ADU. Project Schedule will be shared on a Primavera P6 format for project control.</p>	After completion of every quarter
3.	<p>Technical Reports</p> <p>The Consultant will produce as necessary technical reports and position papers dealing with technical matters arising during the life cycle of the project</p>	When required by the Client
4.	<p>Project Completion Report Draft and Final, PC-IV and as Built Drawings</p> <p>The Consultant will prepare a comprehensive final completion report once the project reaches the stage of substantial completion. The report 10 Nos. copies along with soft copy must be submitted soon after the “taking over” of the completed works and shall include the key information,</p>	At the completion of the project

	but not limited to the following: <ol style="list-style-type: none"> i. Summarize the method of construction ii. “As-built” drawings and designs with other related records showing the location & details of all works carried out iii. The construction management performed iv. Recommendations for future projects of similar nature to be undertaken by the ADU v. Project Archives vi. Lessons learned 	
5.	Handing/Taking over documents of each package (1 copy)	

8. QUALIFICATION OF THE PROPOSED STAFF

Below is the detail of proposed qualifications and experience of the consultant’s team

S. No	Position	Required Qualification and Experience
A. Key Staff		
1.	Team Leader/CRE	Masters in Civil Engineering/Construction Management after B.Sc. Civil Engineering with 10 years relevant experience
2.	Procurement and Contract Engineer	Masters in Civil Engineering/Contract Management/MBA after B.Sc. Civil Engineering with 08 years relevant experience
3.	Structure Design Engineer	Master’s Degree Civil Engineering with 08 years relevant (Structure Designing experience)
4.	Environmental Expert	Master’s Degree in Environmental Engineering/ Sciences with 07 Years relevant experience
5.	Social and Gender Expert	Master’s Degree in Social Sciences with 07 years relevant experience
6.	Quantity Surveyor	DAE Civil/ BTech Civil with 03 Years similar experience
7.	Resident Engineers	Bachelors in Civil Engineering with 07 Years relevant experience

In addition to the subject experts, the consultants shall also deploy appropriate number of non-key (field, admin support staff etc) for undertaking the task.

9. FACILITIES FROM THE ADU

The ADU will facilitate the Consultant to obtain designs of existing structures if available otherwise the consultant will assess the stability and condition of existing structures using the assessment survey, maps, data, or any other information, available with Agriculture Department, which are needed by the Consultant to carry out the task. The ADU will also provide the Consultants with all permissions, approvals, or other things needed by the Consultant to obtain (if available) maps, and aerial photographs. The ADU will assist the Consultant with NOC and permits if required.