COMMAND AREA DEVELOPMENT (CAD) COMPONENT OF GREATER THAL CANAL (GTC) PROJECT (CAD-GTC PHASE-II)

(ADB FINANCED)

PRE-QUALIFICATION DOCUMENT (PQD) OF COMMAND AREA DEVELOPMENT CONSULTANTS (CADCs)



DIRECTORATE GENERAL AGRICULTURE (WATER MANAGEMENT) PUNJAB/ PROJECT DIRECTORATE (CAD-GTC) 21- DAVIS ROAD, LAHORE PAKISTAN

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TERMS OF REFERENCES (TORs) OF COMMAND AREA DEVELOPMENT CONSULTANTS (CADCs)

1. BACKGROUND

The Greater Thal Canal (GTC) offtakes at RD 180+222 from the Chashma-Jhelum (CJ) link canal near Adhi Kot in district Khushab. In total, the GTC project consists of a Main Canal (MC) and five (5) branch canals (Mankera, Choubara, Dhingana, Nurpur and Mehmood sub-Branch). The GTC system comprises of irrigation network extending over 35 km main canal (lined), 342 kms branch canals (lined), over 1,835 kms distributaries and minors alongwith allied structures (regulators, falls, bridges etc.). The GTC has a gross command area (GCA) of 1.918 million acres and canal command area (CCA) of 1.738 million acres in Thal Doab (the area between the Indus and the Jhelum rivers) encompassing Bhakkar (39%), Layyah (30%), Khushab (17%) and Jhang (14%) districts. The canal is a non-perennial channel designed to deliver a total of 2.497 MAF of water annually with 8,500 cusecs discharge with a water allowance of 3.88 cusec/1000 acres.

The Main Canal (MC) of the GTC network has been designed to supply water through cross regulators and head regulators to the Mankera Branch Canal (MBC) with a design flow rate of about 34,384 liters per second (lps) (34.38 m³/sec). The MBC further supplies irrigation water through 8 distributaries and 9 minors to about 544 outlets/ watercourses. The commanded area of MBC is estimated as 257,132 acres (104,060 ha) with a current flow rate of 28,222 lps (28.22 m³/sec). The average commanded area of the MBC is 485 acres (197.8 ha) per outlet/ watercourse. The construction of MC and MBC alongwith its distributaries and minors were completed by the WAPDA in 2008, and later handed over to the Punjab Irrigation Department for its Operation & Maintenance (O&M) while the remaining network of branch canals, distributaries and minors are planned to be constructed. The combined water allowance of the MC and MBC has been estimated as 270 lps (0.27 m³/sec) / 1000 ha. The Choubara Branch Canal (CBC) with a design flow rate of 41,035 lps (41.04 m³/sec) is planned to be constructed under the proposed project alongwith its command area development.

The Asian Development Bank (ADB) has agreed to finance the construction of the remaining systems of the GTC and their Command Area Development (CAD). The proposed project will support the CAD activities in already constructed MC and MBC as well as newly planned CBC covering about 649,000 acres (263,000 ha) traversing Khushab District (Nurpur Tehsil), Bhakkar District (Mankera Tehsil), and Layyah District (Choubara Tehsil).

2. **PROJECT OBJECTIVES**

The Project Development Objective (PDO) of the CAD-GTC is to *develop irrigated agriculture and enhance agricultural productivity* in the project area. The PDO will be achieved by developing climate smart on-farm irrigation and agricultural development infrastructure in the commands of MC, MBC and CBC for enhancing water conveyance, application and use efficiencies through an integrated approach. The CAD-GTC (Phase-II) will have the following key objectives.

- a) Develop irrigated agriculture on **600,000 acres** of culturable waste/ barani/ rainfed land by efficient water conveyance, application and its effective farm level use
- b) Promote on-farm climate resilient agriculture practices on **20,000 acres** through reformatory irrigation, crop production, renewable energy, and on farm irrigated agriculture technologies
- c) Support high value agriculture (HVA) on **10,000 acres** for cultivation of profitable crops for enhancing farmers' productivity vis profitability
- d) Develop capacity of **25,000 farmers/stakeholders** for adopting climate smart and high value agriculture practices for enhancing productivity and profitability
- e) Engage and strengthen capacity of over **50 private sector service providers** for climate resilient irrigated agriculture service delivery
- f) Generate on-farm employment opportunities (on & off farm) for about **1,000 rural youth** for most vulnerable population in project areas to improve livelihoods and alleviate poverty

3. PROJECT COMPONENTS

The major activities to be carried out under the project would include, inter alia, the followings.

A. Development of On-Farm Water Conveyance Network

- A.1. Organize 1,347 Water Users Associations (WUAs)/ farming communities
- A.2. Develop/ construct and carry out lining on 1,347 watercourses
- A.3. Develop **1,000** irrigation schemes/ lining of tubewell watercourses

B. Promotion of Climate Resilient and High Value Agriculture

- B.1. Carry out LASER land levelling on **10,000** acres
- B.2. Install high efficiency irrigation systems (HEISs) on **10,000** acres
- B.3. Install power systems for operating HEISs on 10,000 acres
- B.4. Construct **100** on-farm water storage ponds

C. Agriculture Extension Support Services

- C.1. Provide certified seed to the farmers on 23,400 acres
- C.2. Establish **60** Farmer Field Schools (FFS)

D. Field Wing Support and Services

D.1. Clear right of way (RoW) of **1,272** watercourses/ farm channels

D.2. Develop about **2,290** acres of undulated land through rough land levelling

E. Awareness Creation, Training, Capacity Development of Farmers & Staff and R&D

- E.1. Awareness creation, publicity, and demonstration of project interventions
- E.2. Train and develop capacity of over **25,000** farmers/ water users/ stakeholders
- E.3. Support research & development activities, strategic studies, digitizing operations, crop processing support, piloting modern technologies & practices, etc.

F. Project Management

- F.1. Project administration and supervision
- F.2. Implementation supervision, monitoring & evaluation and third-party validation through Command Area Development (CAD) Consultants

4. COMMAND AREA DEVELOPMENT CONSULTANTS

It is planned to recruit Command Area Development Consultants (CADC) for implementation supervision support and third-party validation of project activities. The objective of the assignment is to engage a team of consultants to provide support for review & approval of design, construction/ installation supervision, quantity certification, quality assurance, technical assistance, and overall coordination of project activities. The consultancy services for project implementation supervision are required to ensure that CAD activities are executed in an orderly manner with a high standard of workmanship and specified quality of materials within the envisaged implementation period as well as in conformity to best possible and latest technical, social and environmental standards.

The Consultants Selection Committee (CSC) will recruit the consultants in accordance with ADB guidelines for selection of consultants using the Quality and Cost Based Selection (QCBS) method at 90:10 quality-cost ratio.

5. MAJOR SCOPE OF SERVICES OF CADCs

- i) Provide project implementation supervision and monitoring & evaluation support services to the PD (CAD-GTC)/ DGA(WM) Punjab, Lahore
- ii) Examine and prepare standards and specifications for watercourse construction works, HEIS equipment, LASER land leveling, water storage ponds, renewable energy and/or other power source/ systems for HEIS as well as other project activities
- iii) Provide support in procurement processes including pre-qualification of private sector supply and services companies (SSCs), advertisements, bid evaluation, award of contracts, etc.
- iv) Draft technical documents, agreements, formats, specifications for design, materials and installation of equipment, itemized list of typical items, cost estimates etc.
- v) Facilitate in finalization of rates for various items and services provided under the project

- vi) Assist in mobilization and screening of farmers/ beneficiaries for various project activities
- vii) Inspect and advise on standards, specifications, and criteria for construction and installation materials/equipment etc.
- viii) Review and approve plans, designs, cost estimates for watercourse improvement, HEISs, LASER land levelling, water storage ponds, renewable or other energyefficient power sources for operation of HEISs etc., extension and field works etc.
- ix) Provide resident supervision on precast concrete parabolic segments (PCPS) yards through deployment of Engineers/ Sub-engineers
- x) Facilitate timely completion of works and recommend onsite design modifications
- xi) Spot-check for quality of works during construction of a minimum of one third by their number
- xii) Certify quantities and quality of completed works and delivered/installed equipment for watercourse improvement, HEISs and LASER land levelling, water storage ponds, power systems for HEISs, seeds/ plants, rough land leveling, bulldozer work etc.
- xiii) Verify financial resource transfer applications as third-party validation
- xiv) Notify the PD (CAD-GTC)/ DGA(WM) Punjab, Lahore of compliance / noncompliance of works with agreed criteria and standards & specifications
- xv) Submit monthly, quarterly, and annual reports of project activities besides other periodic reports as per requirements of project management
- xvi) Provide technical support for training of stakeholders in all project interventions, particularly relating to high efficiency irrigation systems as well as new water management techniques and technologies
- xvii) Provide implementation supervision support for successful implementation of CAD activities to be carried out by the Field and Agri. Ext. Wings under the proposed project
- xviii) Develop and manage an online database for all project interventions for smart project management
 - xix) Submit reconciled physical and financial reports for its onward submission to the donor/ ADB and government
 - xx) Liaise with provincial, divisional, and district project management for smooth execution of field activities
 - xxi) Extend technical support to maintain a website containing information on facilities and services, applications, procedures etc.
- xxii) Support in project management based on modern concepts, implementation of works, including social and environmental management program, implementation of the communication strategy/plan, expenditure planning, budgeting and financing forecast and work plans, as required by the government and financing agency(s) of the project as well as assistance in developing the procurement plans, contract management, and financial management

xxiii) Any other duties assigned by the PD (CAD-GTC)/DGA(WM) Punjab, Lahore/ project management

5.1 SPECIFIC SCOPE OF KEY SERVICES

5.1.1 Watercourse Development/ Construction and Lining

- i) Review the already developed standards and specifications for watercourse improvement/lining works and improve the same as per latest project requirements to assure compliance with agreed criteria
- ii) Prepare a watercourse development/ improvement/ lining manual envisaging step by step guide for carrying out field activities in accordance with the approved project documents
- iii) Assist in mobilization of water users associations (WUAs) and selection of watercourses as per approved criteria
- iv) Facilitate in finalization of rates by District Rate Committee (DRC) for construction materials
- v) Verify rate assessment of construction materials to be procured by the procurement committee for civil work
- vi) Check/ review surveys and cost estimates carried out by the OFWM staff
- vii) Review and approve plans, designs, cost estimates for watercourse improvement
- viii) Check for quality of works during construction according to the agreed quality assurance plan, facilitate timely completion of civil works and recommend onsite design modifications.
 - ix) Recommend financial transactions/ funds transfer to WUAs/ SSCs as per approved criteria
 - x) Certify quality and quantity of completed watercourse improvement/ civil works
 - xi) Take responsibility for completion of works as per standards & specifications and ensure third party validation

5.1.2 LASER/ rough land levelling

- i) Assist in prequalification/ shortlisting of service providers for LASER land levelling services
- ii) Assist in evaluation of bids/ tenders and award of contracts during prequalification/ bidding process of service providers to ensure selection of competent firms and quality services
- iii) Assist in shortlisting of applicants for LASER land levelling
- iv) Certify quantities and quality of LASER/ rough land levelling conformity with specified standards and quantity for payments to service provider
- v) Provide technical support for training of farmers/service providers for LASER land levelling
- vi) Prepare operation, maintenance and management manuals for farm layout planning and LASER land levelling

vii) Develop and maintain a GIS-based database of LASER land levelling acceptable to the Client

5.1.3 High Efficiency Irrigation Systems (HEISs)

- i) Provide technical assistance in preparation of design & specifications, cost estimation of HEIS schemes, prepare guidelines, standardized criteria etc.
- ii) Prepare technical documents/agreement for SSCs including contract conditions, specifications for design, materials and installation of equipment, itemized list of typical items etc.
- iii) Assist in evaluation of the technical and financial proposals of SSCs
- iv) Assist in mobilization and screening of farmers
- v) Facilitate in finalization of rates for various items and services required for system installation
- vi) Review and approve plans, designs, cost estimates for HEIS
- vii) Check quality of material delivered at the site by SSCs conformity with specified standards and quantities based on an agreed quality assurance plan
- viii) Check and certify quantities and quality of all completed works based on agreed quality assurance plan for payments of system cost to SSCs
 - ix) Prepare completion certificates, measurements of on-going/ completed works, and disbursement applications
 - x) Provide technical support for training of OFWM staff in high efficiency irrigation systems
 - xi) Review and advise on standards, specifications and criteria for high efficiency irrigation system best suited to local conditions
- xii) Facilitate timely completion of intended works and recommend onsite design modifications
- xiii) Verify financial resource transfer applications at various stages of works execution
- xiv) Prepare operation, maintenance and management manuals for high efficiency irrigation systems
- xv) Develop and maintain a GIS-based database of HEIS sites

5.1.4 Power Systems for Operating HEIS

- i) Review designs and cost estimates of the power systems for operating HEIS
- ii) Provide technical assistance in preparation of designs & specification, cost estimation of renewable energy power systems, prepare guidelines, standardized criteria etc.
- iii) Prepare technical documents/agreement for SSCs including contract conditions, specifications for design, materials and installation of equipment, itemized list of typical items etc.
- iv) Assist in evaluation of the technical and financial proposals of SSCs for power systems

- v) Assist in mobilization and screening of farmers
- vi) Facilitate in finalization of rates for various items and services required for power system installation
- vii) Review and approve plans, designs, cost estimates prepared by the SSCs
- viii) Check quality of material delivered at site by SSCs, conformity with specified standards and quantities based on an agreed quality assurance plan
- ix) Certify quantities and quality of all completed works for payments of systems cost to SSCs
- x) Prepare completion certificates, measurements of on-going/ completed works and disbursement applications
- xi) Provide technical support for training of OFWM staff in high efficiency irrigation systems and renewable or other energy-efficiency power systems for HEISs etc.
- xii) Review and advise on standards, specifications and criteria for high efficiency irrigation system best suited to local conditions
- xiii) Facilitate timely completion of intended works and recommend onsite design modifications/ improvements
- xiv) Check for quality of works during installation based on agreed quality assurance plan
- xv) Verify financial resource transfer applications at various stages of works execution
- xvi) Prepare operation, maintenance and management manuals for HEWS and its power system
- xvii) Develop and maintain a GIS-based database of HEIS sites

5.1.5 Construction of Water Storage Pond

- i) Review the designs of the water storage pond for storing/ capturing water
- ii) Provide technical assistance in preparation of the design and cost estimation of the water storage pond, prepare guidelines, standardized criteria etc.
- iii) Prepare technical documents including contract conditions, standards for design, and itemized list of typical items etc.
- iv) Assist in mobilization and screening of farmers
- v) Facilitate in finalization of rates for various construction materials and services required for construction of water storage pond
- vi) Review and approve plans, designs, cost estimates prepared by the staff
- vii) Check quality of material delivered at the site, conformity with specified standards and quantities based on quality assurance/ standards
- viii) Certify quantities and quality of all completed works for payments of WSP cost to the beneficiary farmers
- ix) Provide technical support for training of OFWM staff in water storage pond construction and operation

- x) Facilitate timely completion of intended works and recommend onsite design modifications/ improvements
- xi) Spot-checking for quality of works during construction
- xii) Verify financial resource transfer applications at various stages of works execution
- xiii) Prepare operation, maintenance and management manuals for water storage ponds

5.1.6 Extension & Field Services, Awareness Creation, Training, Capacity Building, and Construction of Building Activities

- i) Review and certify Agri. Extension and Field wing activities as per approved procedures
- ii) Provide support for construction of office buildings/ training center as and when required
- iii) Develop the overall framework of social mobilization, awareness creation, training and capacity building, which is gender-responsive
- iv) Assist in social mobilization of farmers, community and WUAs, including women farmers.
- v) Carry out training and capacity Building of farmers, community and WUAs, with separate training for women farmers
- vi) Prepare Training Needs Assessment (TNA) reports as and when required
- vii) Assist the WMTI and WMRF in implementation of Component-E of the project
- viii) Coordination with PID, PAD, PIC, farmers, community and WUAs for successful completion of CAD activities envisaged under the proposed project

5.1.7 Monitoring and Evaluation

- i) Develop the overall framework of monitoring and evaluation plan including collecting, analysing, and reporting project data for continual effective tracking of project development objectives
- ii) Work on formulated set of key performance indicators and means of assessment against these indicators for project activities to be implemented
- iii) Monitor and evaluate the implementation of project activities and their outcomes and impacts on socio-economic welfare of farming community in project areas
- iv) Propose recommendations about project modalities to ensure achievement of envisaged development objectives
- v) Contribute to development of annual work plan, ensuring alignment with project strategy, agreement on annual targets and inclusion of M&E activities in the work plan
- vi) Oversee and execute M&E activities of water management practices and techniques and extension support and services with particular focus on results and impacts as well as in lesson learning
- vii) Any other duty assigned by the project management

The Consultants will perform the role of "**The Engineer**" and undertake agreements in respect of civil works, goods, equipment, etc. to be procured under the project, and will be responsible for inspection and third party validation of these works in order to ensure that works undertaken and goods & equipment supplied are in accordance with the deigns, specifications and terms & conditions of the relevant contracts and standards. The Consultants shall ensure that procurement of goods, services, improvement works contracts are in accordance with the approved polices and guidelines as well as contracts are signed, and managed properly including any changes or variation orders during implementation.

The Consultants will provide support to DGA(WM) Punjab, Lahore/ PD (CAD-GTC) in overall project management activities such as preparation of project implementation plans, expenditure planning, budgeting and financing forecast and plans, monthly, quarterly and annual progress reports or work programs as required by the Government of Punjab and ADB/ financiers of the project. They will also help in developing the procurement plans, contract management, and financial management. The plans will be updated on a regular basis as required by the Client.

6. TEAM COMPOSITION AND QUALIFICATION REQUIREMENTS FOR THE KEY EXPERTS

The Consultants will be encouraged to use the expertise available in Pakistan to the extent possible. However, international experience and experience with the ADB financed projects are necessary to carry out the assignment. The consultants are free to propose a staffing plan and skill mix in order to ensure that necessary requisite objectives and scope of services are achieved. If all the required skills are not available within the consulting firms, they are encouraged to make joint ventures with other firms. The detail of consulting service inputs is given in Table below.

Sr. No.	Name of Expert	Qualification and Experience	Input/ man- months
1	Team Leader/ Project Manager K-1	 Qualification: Post-graduate degree in Agricultural Engineering / Water Resources Engineering / Irrigation Engineering/ Water Engineering & Management/ Civil Engineering with specialization in water resources or equivalent after B.Sc. Agri. Engineering. Experience: 15 years in implementation of multi-sectoral projects with 10 years of implementing foreign funded on farm water management projects. 	72 (1 position)
2	Design Engineer K-2	 Qualification: Post-graduate degree in Agricultural Engineering/ Irrigation Engineering/ Water Resources Engineering/ Water Engineering & Management or equivalent after B.Sc. Agri. Engineering. Experience: Seven (7) years in designing of water management technologies/ methods/ techniques including three (3) years' specific experiences of designing on farm water management interventions. 	72 (1 position)

3	Financial Management Specialist K-3	 Qualification: Degree of Chartered Accountant or ACMA/ ACCA/ MBA Experience: Five (5) years in financial management in public/ private sector organizations preferably under a donor assisted project. 	36 (1 position)
4	Agricultural Economist K-4	 Qualification: Post-graduate degree in Economics/ Agricultural Economics/ Development Economics Experience: 10 years in economics including five (5) years in carrying out economic and financial analysis in agricultural/ water management sectors under foreign funded projects 	36 (1 position)
5	M&E Specialist K-5	 Qualification: Post-graduate degree in Agricultural Engineering / Water Resources/ Irrigation Engineering/ M&E/ Project Management or equivalent after B.Sc. Agri. Engineering Experience: Seven (7) years in M&E of water resources including five (5) years' specific experiences in M&E of on farm water management interventions 	72 (1 position)
6	Field Engineers In-charge/ Field Coordinators K-6 & 7	 Qualification: Graduate/ Bachelor's degree in Agricultural Engineering/ Water Engineering & Management/ Civil Engineering or related field/ equivalent Experience: 10 years including five (5) years' experience in on farm water management/ irrigated agriculture development projects 	144 (2 position)
7	Field Engineers K-8 to K-21	 Qualification: Bachelor's degree in Agricultural Engineering. Post-graduate degree in relevant field will be given preference. Experience: Three (3) years in water resources management including one (1) year in on farm water management projects 	1,008 (14 position)
B.	Non-key Experts/ Support Staff		
1	Irrigation Agronomist	 Qualification: Post-graduate degree in Agriculture/ Agricultural Engineering or equivalent with specialization in Irrigation Agronomy or related field. Ph.D. qualification will be given preference Experience: 10 years in irrigation agronomy or related field including three (3) year work experience in irrigation agronomy under on farm water management projects 	36 (1 position)
2	Social & Gender Expert	 Qualification: Post-graduate degree in sociology, development studies, anthropology or a closely related social sciences field. Ph.D. qualification will be given preference Experience: Seven (7) years in social safeguards, impact assessment, resettlement monitoring, participatory planning, development of community organizations, preparation and implementation of gender action plans including three (3) years in water resources/ agricultural development projects 	36 (1 position)
3	GIS and RS Expert	• Qualification: Post-graduate degree in Remote Sensing & GIS or Bachelor/ Post-graduate degree in Agri.	36 (1 position)

		 Engineering/ Water Resources or equivalent with specialization in GIS/RS Experience: Five (5) years of work experience in GIS & RS applications in public/ private sector organizations preferably in water resources/ agricultural development projects 	
4	Groundwater Management Specialist	 Qualification: Post-graduate degree in Water Resources Management/ Groundwater Management/ Groundwater Hydrology/ Water Engineering & Management/ Agriculture Engineering or similar degree with specialization in Groundwater Management after B.Sc. Agricultural Engineering. Ph.D. qualification will be given preference. Experience: 10 years in groundwater management including three (3) years in groundwater management under on farm water management/ agricultural development projects 	18 (1 position)
5	Agricultural Engineers/ Resident Engineers	• Qualification: Bachelor's degree in Agricultural Engineering	504 (7 positions)
		Total	2,070

a) Team Leader/ Project Manager (National, 72 person-months, One position)

Qualifications: The Team Leader (TL)/ Project Manager (PM) will possess a postgraduate degree in Agricultural Engineering / Water Resources Engineering / Irrigation Engineering/ Water Engineering & Management/ Civil Engineering with specialization in water resources or equivalent after graduation/ B.Sc. in Agri. Engineering. He should possess 15 years' experience in implementation of multi-sectoral projects with 10 years of implementing foreign funded on farm water management projects and management of similar consultancy services with demonstrated ability to work with government officials, technical field staff, private sector, and farmers. In addition, the TL/PM would be required to have familiarity with the principles and practices of participatory community development, irrigated agriculture, water management related issues, and knowledge of project management information systems besides having fluency in spoken and written English. The major responsibilities of the TL/PM will include, but not limited, to the following:

- i) Report to the Client/ DGA (WM)/ PD (CAD-GTC) for project management
- ii) Assume overall responsibility for management of CAD Consultants' team
- iii) Work as the "the Engineer" as per Client's agreement with the Water Users Associations (WUAs)/ beneficiary farmers/ service providers to supervise construction/lining/ installation/equipment delivery etc. with the best professional and consulting standards to ensure that works/ schemes are completed satisfactorily
- iv) Keep the Client informed of technical issues and progress of all works both by direct contacts and through discussions or digital correspondence
- v) Attend, at the project level, all meetings as required and keep a record of all such meetings.
- vi) Assist the Client in amicable solution of project implementation challenges/ issues

- vii) Ensure preparation and submission of regular project reports/ project completion report (PCR)
- viii) Assist the Client in preparing the response to audit observations
- ix) Assist the Client in preparing response to financiers/ ADB or other queries, observations, requirements etc.
- x) Provide technical input in smooth implementation of project activities
- xi) Coordinate with all project stakeholders/ organizations for project implementation
- xii) Any other task assigned by the project management/ Client

b) Design Engineer (National, 72 person-months, One position)

Qualifications: The Design Engineer should possess a post-graduate degree in Agricultural Engineering/ Irrigation Engineering/ Water Resources Engineering/ Water Engineering & Management or equivalent after B.Sc. Agri. Engineering with seven (7) years' experience in designing of water management technologies/ methods/ techniques including three (3) years' specific experiences of designing on farm water management interventions. Work experience in related computer tools, good communication skills, fluency in English and proven satisfactory record of similar consultancies would be preferred. The major responsibilities of the Design Engineer will include but not limited to the followings:

- i) Supervise designs and cost estimations of project interventions/ technologies and provide technical assistance and backstopping to field engineers/ staff
- ii) Monitor the designing process carried out by the supply & service companies (SSCs)/ service providers/ OFWM staff to ensure socially acceptable, economically feasible, and environmentally friendly designs in accordance with the prescribed standards and specifications
- iii) Assist the Client/ department in the whole bidding process of award of contracts
- iv) Develop computer-based designs of all project interventions and provide training to project/ SSCs staff
- v) Carry out continuous monitoring of designing process and maintain liaison with implementation staff/ other stakeholders
- vi) Assist in reviewing and modifying the designs of project interventions for cost effectiveness and technical suitability
- vii) Coordinate for ensuring adoption of international/ national standards for designs
- viii) Guide the field engineer/ staff in preparation, review and approval of designs
- ix) Prepare/ update design manuals of all project interventions and submit to the Client within one year of mobilization
- x) Perform other duties as assigned by the project management/ client

c) Financial Management Specialist (National, 36 person-months, One position)

Qualifications: The Financial Management Specialist (FMS) should have degree of Chartered Accountant or ACMA/ACCA/ MBA with five (5) years of work experience in financial management in public/ private sector organizations preferably under a donor assisted project. The FMS will be responsible for provision of technical guidance and expertise in the financial management activities under the project within the framework of prescribed

policies and guidelines of the government and the ADB. The FMS will provide comprehensive support to the DGA(WM) Punjab, Lahore/ PD (CAD-GTC) regarding establishment and maintenance of finance and accounting systems, processes and procedures, and ensuring adherence to the donor/ ADB/ government requirements. The major responsibilities of FMS will include, interalia, the followings.

- i) Provide technical assistance to DGA (WM)/ PD(CAD-GTC) for financial management activities
- ii) Assist in managing all accounts, budget and audit matters
- iii) Supervise in preparing cash flows, their planning, and management
- iv) Prepare financial management reports including monthly SOE (Statement of Expenditure) reports and other reports as per requirement of the donor/ client
- v) Support in dealing with the ADB/ donor on financial management issues
- vi) Monitor the financial resources and accounting to ensure accuracy and reliability of financial reports
- vii) Establish an efficient, accurate and updated reporting mechanism, preferably a real time transaction recording and reporting system including asset register management, receipt book and cash book-keeping, invoice register management, contract register, contract ledger management etc.
- viii) Consolidate the periodic financial progress reports and submit to the PD (CAD-GTC)/ DGA(WM) Punjab Lahore for review/approval and/or all stakeholders in accordance with the prescribed requirements
 - ix) Assist in preparation of various financial reports as and when required by the Client
 - x) Organize cash management processes, including liquidity management, recommendation about imprest level, risk assessment, bank relationship management, timely accounting and reconciliation of all transactions, security for cash assets on site etc.
 - xi) Carry out capacity building of the provincial, regional and district level finance & accounts teams
- Provide support in carrying out internal and external audits timely and regularly to improve financial process as well as suggest corrective actions on all recommendations/ observations
- xiii) Help in securing approvals of competent authority regarding budget allocations/ disbursements and release of funds
- xiv) Assist in tax-related matters as and when required by the Client
- xv) Any other relevant duties assigned by the DGA (WM) Punjab, Lahore/ PD(CAD-GTC)

d) Agricultural Economist (National, 36 person-months, One position)

Qualifications: The Agricultural Economist will possess a post-graduate degree in Economics/ Agricultural Economics/ Development Economics with 10 years' experience in economics including five (5) years in carrying out economic and financial analysis in agricultural/ water management sectors under foreign funded project. The work experience in a developed country in related field with demonstrated ability to work with government officials, technical field staff, private sector, and farmers would be preferred. Work experience in related computer tools, ADB rules/procedures, good communication skills, fluency in

English, and proven satisfactory record of similar consultancies would be preferred. The responsibilities of the Agricultural Economist will include but not limited to the followings:

- i) Supervise collection, compilation and analysis of data/ information/ pictorial evidence before and after project interventions
- ii) Lead surveys/information collection activities for impact assessment of project activities
- iii) Carry out economic and financial analysis of project activities as and when required
- iv) Train the consultants team/staff in collection of periodic/seasonal data for impact assessment of project activities, etc.
- v) Assist the M&E Expert in data collection plans and preparation of formats
- vi) Prepare a framework for gathering feedback of beneficiaries/ communities/WUAs
- vii) Assess the social, economic and environmental impacts of project interventions
- viii) Impart guidance and training on economic analysis to project staff
- ix) Submit quarterly and yearly reports highlighting project impacts acceptable to the Clients
- x) Assist the OFWM staff in determining economic feasibility of project interventions
- xi) Design and complete special impact assessment studies as per requirement of project management
- xii) Any other relevant duties assigned by the DGA (WM) Punjab, Lahore/PD(CAD-GTC)

e) M&E Specialist (National, 72 person-months, One position)

Qualifications: The M&E Specialist will possess a post-graduate degree in Agricultural Engineering / Water Resources/ Irrigation Engineering/ M&E/ Project Management or equivalent after B.Sc. Agri. Engineering with Seven (7) years in M&E of water resources including five (5) years' specific experiences in M&E of on farm water management interventions with demonstrated ability to work with government officials, technical field staff, private sector, and farmers will be preferred. The responsibilities of the M&E Specialist will be but not limited to the following:

- i) Lead the consultant's M&E team for provision of technical assistance to PD (CAD-GTC)/ Client in monitoring and evaluation of project activities and impacts
- ii) Supervise implementation of overall monitoring and evaluation plan including collecting, analyzing, and reporting project data for continual effective tracking of project objectives
- iii) Monitor and report project impacts, outputs, and outcomes as envisaged in project logical framework
- iv) Carry out impact evaluation of project activities alongwith the Agriculture Economist to assess project benefits
- v) Monitor project activities to ensure implementation of project activities in accordance with the prescribed standards, specifications, and procedures
- vi) Carry out continuous monitoring of project plans and maintain liaison with implementation staff/ other stakeholders
- vii) Ensure adoption of international/ national standards for monitoring of project activities
- viii) Submit quarterly / yearly M&E reports envisaging monitoring of indicators against the logical framework and other indicators acceptable to the clients

ix) Any other relevant duties assigned by the DGA (WM) Punjab, Lahore/ PD(CAD-GTC)

f) Field Engineers In-charge/ Field Coordinators (National, 144 person-months, Two positions)

Qualifications: The Field Engineers In-charge/Field Coordinators should possess a graduate degree in Agricultural Engineering/Water Engineering & Management/Civil Engineering or related field with 10 years' work experience including five (5) years' experience in on farm water management/irrigated agriculture development projects. Work experience in related computer tools, coordination, good communication skills, fluency in English and proven satisfactory record of similar consultancies would be preferred. The responsibilities of the Field Engineers In-charge/Field Coordinators will include but not limited to the following:

- i) Lead the Field Engineers/ field teams and coordinate project activities amongst various stakeholders
- ii) Act as a bridge between higher management and field formations to ensure resolution of project implementation issues
- iii) Assist the PM/TL in project implementation supervision activities
- iv) Attend all meetings as required and keep a record of all such meetings
- v) Supervise checking and approval of field survey, design and cost estimates
- vi) Coordinate and monitor/ supervise all project activities undertaken in the field and ensure quality of project interventions as well as quantity certification
- vii) Prepare online/ web-based reporting formats of all project interventions acceptable to the Client for online progress reporting
- viii) Develop close liaison with project stakeholders including project management, private sector service providers, farmers etc.
- ix) Any other relevant duties assigned by the DGA (WM) Punjab, Lahore/PD(CAD-GTC)

g) Field Engineers (National, 1008 person-months, 14 positions)

Qualifications: The Field Engineers should possess a Bachelor's degree in Agricultural Engineering and three (3) year work experience including one (1) years in on farm water management projects. Post-graduate degree will be given preference. Work experience in related computer tools, good communication skills, fluency in English and proven satisfactory record of similar consultancies would be preferred. The responsibilities of the Field Engineers will include but not limited to the following:

- i) Assist the OFWM field staff in successful implementation of project activities
- ii) Coordinate and supervise construction/installation activities in the field
- iii) Ensure quality and quantity of works as per approved standards and specifications by spot-checking of envisaged interventions
- iv) Certify financial transactions/ funds for ongoing as well as completed project works as per approved procedures
- v) Assist in finalization of rates of construction material in DRC as and when required
- vi) Bring any deficiency into the notice of the controlling officers of district and provincial governments

- vii) Develop close liaison with project stakeholders including project management, SSCs and the farmers
- viii) Any other relevant duties assigned by the DGA(WM) Punjab, Lahore/ PD(CAD-GTC)

h) Irrigation Agronomist (National, 36 person-months, One position)

Qualifications: The Irrigation Agronomist should possess a post-graduate degree in Agriculture/ Agricultural Engineering or equivalent with specialization in Irrigation Agronomy or related field. Ph.D. qualification will be given preference. He should possess 10 years' work experience in irrigation agronomy or related field including three (3) year work experience in irrigation agronomy under on farm water management projects. Work experience in related computer tools, good communication skills, fluency in English and proven satisfactory record of similar consultancies would be preferred. The responsibilities of the Irrigation Agronomist will include but not limited to the following

- i) Assist the project management in implementation of OFWM and agricultural extension activities
- ii) Develop guidelines and technical manuals about agronomy of different crops sown in the project area for professionals and farmers for successful crop production
- iii) Prepare and implement plans for devising crop production technology including land preparation, planting, irrigation scheduling, inter-culture, fertigation, harvesting, processing and marketing under modern irrigation technologies
- iv) Estimate crop water requirements (CWR) by using climatic data (rainfall, sunshine, humidity, wind speed, temperature etc.) for soil moisture monitoring and proper irrigation scheduling in the project area
- v) Supervise demonstration and evaluation of modern irrigation and crop production techniques
- vi) Assist the Extension wing in carrying out their envisaged activities
- vii) Assist in preparation of most feasible cropping patterns under project interventions and water availability
- viii) Assist the farmers in successful crop cultivation with HEIS and other modern irrigation technologies
- ix) Compile and analyze reports on agronomic aspects of crop and water management for proposing recommendations
- x) Participate in field visits & provide necessary input for crop and irrigation management
- xi) Prepare training curriculum and carryout capacity building programs for technical staff and farmers about irrigation agronomy
- xii) Any other relevant duties assigned by the DGA(WM) Punjab, Lahore/ PD(CAD-GTC)

i) Social & Gender Expert (National, 36 person-months, One position)

Qualifications: The Social & Gender Expert will have a post-graduate degree in sociology, development studies, anthropology or a closely related social sciences field. Ph.D. qualification will be given preference. Professional experience of seven (7) years in social safeguards, impact assessment, resettlement monitoring, participatory planning, development of community organizations, preparation and implementation of gender action plans including three (3) years in water resources/ agricultural development projects is required. In-depth knowledge for similar

water resources development project environment and experience of Punjab will be an advantage. His/her main tasks will be to:

- i) Ensure the equitable participation of women, including women landless farmers in community consultations, and report on the outreach, participation, and communication activities that have been carried out especially for women and vulnerable stakeholders
- ii) Organize women farmers into community-based groups; ensure their regular meetings; ensure that the groups' discussions are recorded in the minutes; and inform and feed these group discussions into WUA meetings, as relevant
- iii) Monitor and evaluate social and gender related impact of project activities
- iv) Prepare and implement GAP
- v) Carry out gender related surveys and studies
- vi) Work with the Agricultural Economist and M&E Specialist for assessment of project impacts
- vii) Provide guidance and training for participation of women/gender in project activities
- viii) Provide gender updates in monthly/ quarterly/ yearly project reports
- ix) Any other relevant duties assigned by the DGA(WM) Punjab, Lahore/ PD(CAD-GTC)

j) GIS & RS Expert (National, 36 person-months, One positions)

Qualifications: GIS and RS Expert should possess a post-graduate degree in Remote Sensing & GIS or Bachelor/ Post-graduate degree in Agri. Engineering/ Water Resources or equivalent with specialization in GIS/RS with five (5) years of work experience in GIS & RS applications in public/ private sector organizations preferably in water resources/ agricultural development projects. He would be responsible for provision of technical guidance and expertise in the development and management of GIS database of all project activities. He will provide comprehensive support to the client regarding database maintenance, data verification, updation of information, upgradation of system for use of data for planning and monitoring activities. The major responsibilities of the consultant will include, interalia, the followings.

- i) Provide technical assistance to DGA (WM)/ PD (CAD-GTC) in developing GIS & RS maps of planned interventions
- ii) Develop GIS applications on different platforms (i.e. ESRI products/ ERDAS Imagine/ ER-Mapper / MapInfo etc.) for project activities
- iii) Develop shape files of all project interventions
- iv) Supervise image processing/ interpretation and analysis of project interventions
- v) Carryout data digitization and geo-tagging of all project interventions
- vi) Manage map production and printing
- vii) Administer spatial data analysis and management
- viii) Develop a GIS-based database of project interventions
 - ix) Organize collection of necessary field data for completion, updating and up-gradation of GIS database
 - x) Build capacity of OFWM staff/IT team in operation, application and management of GIS database, use of GPS and latest GIS software i.e. ArcView, ArcGIS etc.
 - xi) Demonstrate ways to use OFWM GIS database as a management tool in an optimal manner for project planning & monitoring

xii) Produce project maps as and when required by the DGA(WM) Punjab, Lahore/ PD(CAD-GTC)

k) Groundwater Management Specialist (National, 18 person-months, One position)

Qualifications: The Ground Management Specialist should possess a post-graduate degree in Water Resources Management/ Groundwater Management/ Groundwater Hydrology/ Water Engineering & Management/ Agriculture Engineering or similar degree with specialization in Groundwater Management after B.Sc. Agricultural Engineering. Ph.D. qualification will be given preference. He should possess 10 years' experience in groundwater management including three (3) years in groundwater management under on farm water management/ agricultural development projects. Work experience in related computer tools, good communication skills, fluency in English and proven satisfactory record of similar consultancies would be preferred. The major responsibilities of the consultant will include, interalia, the followings:

- i) Develop guidelines and technical manuals about groundwater management strategies for OFWM staff/ professionals and farmers for successful crop production
- ii) Prepare and implement plans for devising sustainable groundwater management plans including planting, irrigation scheduling, treated/ conjunctive or cyclic use of groundwater, fertigation etc., under modern irrigation technologies
- iii) Design/ develop/ recommend ICT-based tools and gadgets for on-farm groundwater monitoring and management
- iv) Prepare most feasible groundwater management options in project areas based on water availability from canal, groundwater and rainfall
- v) Demonstrate and evaluate various groundwater management techniques
- vi) Develop a framework for monitoring groundwater before and after project interventions
- vii) Use computer models to analyze groundwater situation in project areas
- viii) Compile and analyze the reports on groundwater monitoring and management aspects and water management for proposing recommendations
 - ix) Participate in field visits & provide necessary input for groundwater management
 - x) Prepare training curriculum and carryout capacity building programs for technical staff and farmers about groundwater management
 - xi) Any other relevant duties assigned by the DGA(WM) Punjab, Lahore/ PD(CAD-GTC)

I) Resident Engineers/Agricultural Engineers (504 person months, 7 positions)

Qualifications: Resident Engineers/ Agricultural Engineer will possess Bachelor's degree in Agricultural Engineering degree and would be responsible for provision of resident supervision in fabrication/ production of Pre-cast Concrete Parabolic Segments (PCPS) at yards for watercourse lining in the project areas. He will also assist the Field Engineers in performance of field duties and other project activities as and when required.

7. REPORTING REQUIREMENT AND TIME SCHEDULE FOR DELIVERABLES

The Consultant will prepare the following key reports in English and provide the copies as per deliverables and schedule along with respective soft copy.

- a) Inception Report In this report, the Consultant will present their strategy, methodology, timeline, responsibility matrix, risk analysis, risk response methods etc. for successful delivery of consultancy services.
- b) Monthly Progress Reports
- c) Mid-term Report on the format acceptable to the Client
- d) Yearly Impact Assessment/ Evaluation Report
- e) Design Manuals of project activities
- f) GIS/ RS maps of command area on various project activities (before and after) on monthly basis
- g) Quality Assurance Plan (QA/QC Manual)
- h) Revised Planning Commission Proforma-I (PC-I), if needed
- i) Assignment Completion Report (including digital database of all project interventions)
- j) Revised Planning Commission Proforma-IV (PC-IV)
- k) Any special reports as may be necessary from time to time for specific item / issue related to the project.

The schedule for various reports and documents that are likely to be generated by the Consultant has been prepared. Additional reports and presentations shall be prepared as required. The Consultants will supply the deliverables alongwith the respective soft copy thereof to the DGA(WM)) Punjab Lahore/ PD (CAD-GTC) as per schedule given below.

Sr. No.	Document	Soft & Hard Copies	Due
1.	Draft Inception Report	3	3 weeks after the effectiveness of the services
2.	Final Inception Report	5	One week after the issuance of comments by the Client on draft Inception Report
3.	Monthly Progress Report (Physical & Financial)	3	10 th of the following month
4.	Quality Assurance Plan (QA/ QC Manual)	5	Within 45 days after commencement of services
5.	Quarterly Progress Report (Physical & Financial)	3	10 th of the first month of following quarter
6.	Annual Summary Progress Report (Physical & Financial)	3	10 th of the first month of following year
7.	ICT-based online progress reporting/ monitoring system	1	6 months after the effectiveness of the services
8.	Annual Progress Report (Physical & Financial)	3	During first month of the following year
9.	Monthly SOE (Statement of Expenditure) reports	3	10 th of the following quarter

10.	EIO, RFP, PQD, tripartite agreement, etc.	3	As and when required
11.	Impact Assessment Report	3	After each year
12.	Quality Control / Assurance Report	5	After each year
13.	GIS/ RS maps	3	After 6 months, and as and when required
14.	Social and environment progress report/ ESMP report	3	After each six months
15.	Design Manual of each activity	5	Within 6 months after commencement of services
16.	Revised Planning Commission Proforma-I (PC-I)	30	As and when required
17.	Draft Assignment Completion Report	5	At completion of physical works/ activities
18.	Final Assignment Completion Report	25	At completion of physical works and financial transactions
19.	Planning Commission Proforma IV (PC-IV)	50	At completion of the project
20.	Complete inventory of works/ activities in hard and digital form	10	At completion of the project
21.	Special Reports	10	As and when required

8. CLIENT'S INPUT AND COUNTERPART PERSONNEL

- i) The Consultant shall work closely with the Director General Agriculture (Water Management) Punjab, Lahore/ Project Director (CAD-GTC), Lahore to whom they will be reporting on day-to-day basis. The Consultant will establish their offices in Lahore and project areas at suitable places. Most of the consultants' staff will be located in the field/ project areas.
- Director General Agriculture (Water Management) Punjab, Lahore/ Project Director (CAD-GTC) will be representative of the Client who will also resolve various administrative issues relating to Consultants arising during the course of assignment. The Consultants' Team Leader/ Project Manager will be the principal contact and will be expected to be readily available during project implementation.
- iii) The Consultants shall be responsible for all aspects of performance of services as set forth in these TORs.
- iv) All records and sites will be made available to the Consultant to enable them to perform their functions. The Consultants will be required to ensure confidentiality of the record.

9. CLIENT WILL PROVIDE THE FOLLOWING INPUTS, PROJECT DATA AND REPORTS TO FACILITATE PREPARATION OF THE PROPOSALS

All relevant documents regarding on farm water management and command area

development activities are freely accessible at OFWM website (http://ofwm.agripunjab.gov.pk), which may be useful for interested consultants/ consulting firms.

10. EXPRESSION OF INTEREST (EOI)

Country:	Pakistan		
Project Name & Number:	Command Area Development (CAD) Component of		
-	Greater Thal Canal (GTC) Project (CAD-GTC Phase-		
	II) (49372-PAK)		
Consulting Services:	Command Area Development Consultants (CADC)		
Deadline for Submission:	21 January 2022 by 11:00 Hours of Pakistan		
	Standard Time		
Procurement/ Recruitment	QCBS (National)		
Method:			
Implementing Agency (IA):	Punjab Agriculture Department (PAD) through		
	Director General Agriculture (Water Management)		
	Punjab/ Project Director (CAD-GTC)		

The Asian Development Bank (ADB) has agreed to finance the Command Area Development (CAD) of Grater Thal Canal (GTC). The Command Area Development (CAD) Component of Greater Thal Canal (GTC) Project (CAD-GTC Phase-II) has been approved by the Provincial Development Working Party (PDWP) on 07.07.2021 and subsequently cleared by Central Development Working Party (CDWP) on 06.10.2021. The project has been approved at a total cost of Rs. 19,078 million including ADB. share of Rs. 14,653 million, Punjab Government share of 1,869 million and farmers' contribution of Rs. 2,555 million for its implementation during six (6) years (2021-22 to 2026-27). The project is under process for approval by the CDWP/ ECNEC. A part of the ADB loan proceeds will cover the consultancy services cost for command area development consultants of the CAD-GTC.

The Greater Thal Canal (GTC) offtakes from the Chashma-Jhelum (CJ) link canal near Adhi Kot in district Khushab. The GTC has a gross command area (GCA) of 1.918 million acres and canal command area (CCA) of 1.738 million acres in Thal Doab (the area between the Indus and the Jhelum rivers) encompassing Bhakkar (39%), Layyah (30%), Khushab (17%) and Jhang (14%) districts. The CAD-GTC Phase-II project envisages command area development of already constructed Main Canal (MC) and Mankera Branch Canal (MBC) as well as newly planned Choubara Branch Canal (CBC) with CCA of about 649,000 acres (263,000 ha) traversing through Khushab, Bhakkar and Layyah districts.

The Project Development Objective (PDO) of the CAD-GTC is to *develop irrigated agriculture and enhance agricultural productivity* in the project area. The project envisages development/ construction and lining of 1,347 community watercourses, development of 1,000 irrigation schemes/ lining of tubewell watercourses, carrying out Laser land levelling on 10,000 acres, installation of high efficiency irrigation systems (HEISs) on 10,000 acres, installation of renewable energy and/or other power source/ systems for operating HEISs on 10,000 acres, construction of 100 on-farm water storage ponds, provision of certified seed to the farmers on 23,400 acres, establishment of 60 Farmer Field Schools (FFS), clearance of right of way (RoW) of 1,272 watercourses/ farm channels, development of about 2,290 acres of undulated land through rough land levelling, training and capacity development of over 25,000 farmers/ water users/ stakeholder, awareness creation, publicity, & demonstration of project interventions and supporting research & development activities, strategic studies, digitizing operations, crop processing support, piloting modern technologies & practices, etc.

The recruitment/ engagement of Command Area Development Consultants (CADCs) has been planned for implementation supervision support and third party validation of project activities. The objective of the assignment is to engage a team of consultants to provide support for review & approval of designs, construction/ installation supervision, quantity certification, quality assurance, technical assistance, and overall coordination of project activities. The consultancy services for project implementation supervision are required to ensure that CAD activities are executed in an orderly manner with a high standard of workmanship and specified quality of materials within the envisaged implementation period as well as in conformity to best possible and latest technical, social and environmental standards.

This advertisement/ publication calls engineering consultancy firms to submit Expression of Interest (EOI) to deliver engineering consultancy services for the assignment. The request for EOI and Terms of References (TORs) for CAD consulting services can be downloaded from websites of OFWM, PPRA and the Consulting Management System (CMS) of the ADB (https://selfservice.adb.org/OA_HTML/adb/xxcrs/jsp/ADBCsrnFwd.jsp?sel=171876). The "Source of Selection" will be "National Shortlisting". Consultants may associate with other firms to enhance their qualifications but should indicate clearly whether the association is in the form of a Joint Venture (JV) and/or a sub-consultancy. In the case of a JV, all the partners in the JV shall be jointly and severally liable for the entire contract, if selected. Only shortlisted firms/ JVs will subsequently be invited to submit technical and financial proposals on the prescribed RFP. The names and addresses of shortlisted firms will also be posted on the CSM-ADB and OFWM website. The selected firm/ JV, having the highest technical and financial scores, will be invited to negotiate the contract. The interested applicant may refer to ADB -Project Administration Instructions "ADB Procurement Regulations for ADB Borrowers (2017)", for further information on selection of consultants.

Directorate General Agriculture (Water Management)/ Project Directorate (CAD-GTC) invites eligible consulting firms from ADB member countries to express EOI in providing the required consultancy services. For preparation of the EOI, ADB's templates must be used, which can be downloaded from <u>www.adb.org/documents/recruitment-firms-individual-consultants-executing-agencies</u>. Engineering consultancy firms of international and national origin, having sufficient experience and desirous of undertaking the assignment should submit the EOI online through CMS-ADB. The shortlisting criteria will be based on technical and managerial capacity of the firm. Applicant firms are requested to provide only relevant information specific to the proposed services and avoid submitting generic promotional literature. The PQD/ information related to project may be downloaded immediately from ADB or OFWM website free of cost.

The Implementing Agency (IA) reserves the right to: (i) cancel this recruitment process at any time and interested firms are responsible for all costs incurred arising out of, or in relation to this request; and (ii) amend or withdraw the terms of reference, budget, this EOI, and any or all attachments at any time. Interested firms are advised to address their enquiries (not later than 10 days before submission date) and submission to the following address:

Director General Agriculture (Water Management) Punjab Project Director (CAD-GTC) 21-Agha Khan Soyyum (Davis) Road Lahore-54000, Punjab, Pakistan Tel: +92-42-99200703 Fax: +92-42-99200702 E-mail: pipipwm@gmail.com Website: www.ofwm.agripunjab.gov.pk