

# Project Administration Manual

---

Project Number: 47181-002

Loan Number: 0498

September 2016

Republic of Tajikistan: Water Resources  
Management in Pyanj River Basin Project

## **CONTENTS**

I.	PROJECT DESCRIPTION	1
	A. Impact and Outcome	2
	B. Outputs	2
II.	IMPLEMENTATION PLANS	11
	A. Project Readiness Activities	11
	B. Overall Project Implementation Plan	12
III.	PROJECT MANAGEMENT ARRANGEMENTS	13
	A. Project Implementation Organizations–Roles and Responsibilities	13
	B. Key Person Involved in Project Implementation	16
	C. Project Organization Structure	21
IV.	COST AND FINANCING	22
	A. Detailed Cost Estimates by Expenditure Category	22
	B. Allocation and Withdrawal of Loan, Grant, and TA Proceeds	22
	C. Detailed Cost Estimate by Financier	24
	D. Detailed Cost Estimate by Outputs/Components	27
	E. Detailed Cost Estimates by Year	28
	F. Contract Awards and Disbursement Projection	29
	G. Fund Flow Diagram	32
V.	FINANCIAL MANAGEMENT	33
	A. Financial Management Assessment	33
	B. Disbursement	35
VI.	PROCUREMENT AND CONSULTING SERVICES	37
	A. Advance Contracting and Retroacting Financing	37
	B. Procurement of Goods, Works and Consulting Services	38
	C. Procurement Plan	38
VII.	SAFEGUARDS	41
	A. Environmental Safeguard	41
	B. Social Safeguards	42
	C. Prohibited Investment Activities	42
VIII.	GENDER AND SOCIAL DIMENSIONS	43

IX.	PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION	46
	A. Project Design and Monitoring Framework	46
	B. Monitoring	49
	C. Evaluation	50
	D. Reporting	50
	E. Stakeholder Communication Strategy	51
X.	ANTICORRUPTION POLICY	52
XI.	ACCOUNTABILITY MECHANISM	52
XII.	RECORD OF PAM CHANGES	53
ANNEX 1.	DETAILED CONSULTING SERVICES (OUTPUT 1)	57
ANNEX 2.	SCOPE OF SERVICES FOR PROJECT IMPLEMENTATION CONSULTANT FOR (OUTPUT 2)	59
ANNEX 3.	CONSULTING SERVICES FOR FARM MANAGEMENT AND WATER USE CAPACITIES DEVELOPMENT (OUTPUT 3)	61

### **Project Administration Manual Purpose and Process**

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Agency for Land Reclamation and Irrigation, and the Ministry of Energy and Water Resources, the two executing agencies, are wholly responsible for the implementation of ADB financed project, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by executing agencies of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At Loan and Grant Negotiations the borrower and ADB shall agree to the PAM and ensure consistency with the legal and grant agreements.<sup>1</sup> Such agreements shall be reflected in the minutes of the Loan and Grant Negotiations. In the event of any discrepancy or contradiction between the PAM and the Loan and Grant Agreements, the provisions of the Loan and Grant Agreements shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP), changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

<sup>1</sup> These include the loan, grant, and TA agreements, and the Project Agreement.

## ABBREVIATIONS

ADB	–	Asian Development Bank
ALRI	–	Agency of Land Reclamation and Irrigation
CCO	–	Chubek Canal Organization
CIS	–	Chubek Irrigation system
cm	–	Centimeter
CMCHR	–	Chubek Main Canal Head Regulator
EA	–	Executing Agency
GOT	–	Government of Tajikistan
HR	–	Human Resources
I&D	–	irrigation and drainage
IRP	–	Irrigation Rehabilitation Project
ISF	–	irrigation service fee
JFPR	–	Japan Fund for Poverty Reduction
m	–	meter
M&E	–	monitoring and evaluation
M&R	–	modernization and rehabilitation
MEWR	–	Ministry of Energy and Water Resources
MLRWR	–	Ministry of Land Reclamation and Water Resources
NGO	–	nongovernment organization
O&M	–	Operation & maintenance
PFM	–	Public Finance Management
PIG	–	Project Implementation Group
PIO	–	Project Implementation Office
PMO	–	Project Management Office
PS	–	pump station
RM	–	Resident Mission (ADB)
SCADA	–	System Control and Data Acquisition
TA	–	technical assistance
WUASU	–	Water Users' Association Support Unit
WB	–	World Bank
WUA	–	water users' association



## I. PROJECT DESCRIPTION

1. The project will address irrigated agriculture and water resources management (WRM) issues in Pyanj River basin (PRB), in the southern part of Tajikistan. The PRB is the largest of five principal basins (Kafernigan, Pyanj, Syr Darya, Vakhsh, and Zerevshan) in the country. PRB's WRM will influence the country's economy and food security as the basin includes the majority of Khatlon province which has the largest population (2.7 million) and agriculture production (e.g., 774,000 tons cereal), and is the country's poorest river basin (55% in poor population).<sup>1</sup> The PRB also includes the most food insecure zones, comprising the Eastern Pamir Plateau Livestock Zone, due to its poor access to food products, and the Southern Khatlon Cotton, Vegetable and Wheat Zone, among irrigated areas.<sup>2</sup> PRB is also vulnerable to climate change. Gradual shift in the river flow seasonal distribution, and increase of crop water deliveries requirements in irrigation systems are predicted as climate change impacts.
2. For efficient WRM, increase of food security, and reduction of poverty in the PRB, the project will adopt a comprehensive approach to implement appropriate measures at (i) overall basin level; (ii) water supplier level; and (iii) water user level.
3. At overall basin level, the project will support the country's ongoing water sector reform. Some required actions to reform water sector have been undertaken by the Government. The Ministry of Land Reclamation and Water Resources (MLRWR) was abolished in November 2013 and its responsibilities were reassigned to the newly formed Ministry of Energy and Water Resources (MEWR) for the policy and regulations on WRM; and to the Agency of Land Reclamation and Irrigation (ALRI), for development and management of WRM infrastructure. Further reforms include (i) the change from administrative to hydrological areas; and (ii) the establishment of (a) river basin management plans (RBMPs) to clarify and monitor water allocations, and (b) water governance institutions such as river basin organizations (RBOs) and river basin councils, in line with principles of integrated WRM. The project will implement reforms in PRB as highlighted in items (i) and (ii).<sup>3</sup>
4. Given that more than 40% of PRB comprises the territory of Afghanistan and serious flood disasters occurred frequently, both governments of Afghanistan and Tajikistan signed a bilateral agreement for joint hydrological monitoring of Pyanj River in 2010. A road map to establish a joint PRB commission (JPRBC) was drafted in 2013 with ADB assistance to implement the bilateral agreement. The project will also support required activities to implement the road map through a capacity development delegated technical assistance (TA).
5. At water supply level, the project aims at fully operationalizing major WRM infrastructure with modernization and climate-proofing. Among the irrigation systems covering about 120,000 hectares (ha) in PRB, the Chubek Irrigation System (CIS) is the largest located in Khatlon Oblast on the right bank of Pyanj River. Water from the Pyanj River is diverted by gravity without any regulator across the river. The Chubek Main Canal, with original capacity of about 150 cubic meter per second (m<sup>3</sup>/sec), was constructed in 1950 while the distribution system was constructed during 1950–1987 during Soviet times, to supply water to command areas located in Farkhor, Hamadoni, Kulob, and Vose districts. Water is supplied by a combination of gravity and 20 pump units. Some areas require multistage pumping. The total pumping head required for various irrigation areas varies from 8.5 meters (m) to 177.5 m. The CIS commands a total

---

<sup>1</sup> World Bank. 2013. *Tajikistan-Reinvigorating Growth in the Khatlon Oblast*. Washington, DC.

<sup>2</sup> World Food Program. 2013. *Food Security Classification Overview – June 2013*. Dushanbe.

<sup>3</sup> MEWR. 2015. *Water Sector Reforms Programme for 2016-2025*. Dushanbe.

designed area of 50,163 ha; 35,819 ha (71%) is fed by gravity and 14,344 ha (29%) by pumps. Vose District has the highest proportion (57%) while Kulob has only 2% of the command area.

6. The gravity irrigation distribution system consists of 1 kilometer (km) lead channel with a capacity of about 400 m<sup>3</sup>/sec, a complex of head regulator and sediment escape structure at the end of the lead channel, about 17.2 km long Chubek Main Canal, about 400 km of inter-farm canals including main canal, and about 500 structures.

7. The CIS was designed to serve primarily the areas by gravity. Pumps were installed wherever required to irrigate the adjoining high areas. This is evident from the profile of the existing canal which is very close to the natural ground level to minimize cost by keeping the cut and fill at minimum. The canals have a number of falls to keep the profile close to natural ground level instead of keeping the head to minimize pumping for high lands.

8. Maintenance of the CIS has suffered after disintegration of the Soviet Union due to inadequate funding for operation and maintenance (O&M) resulting in accelerated deterioration of canals, drains and pumping stations. Most structures are in very poor condition. The degraded state of irrigation and drainage (I&D) infrastructure including pumping stations combined with poor water management practices, have resulted in low irrigation conveyance efficiency, low energy efficiency, and consequently reduced agricultural productivity and decreased irrigation area to 43,210 ha. Heavy sediment inflow and deposition from Pyanj River without proper O&M is exacerbating the condition of I&D and agricultural productivity.

9. Modernization of the main, inter-farm and on-farm canals, including proper sediment removal together with climate proofing, is required to improve system efficiencies that would lead to restoration of decreased command area and reduce vulnerability to climate changes and O&M requirement. Replacement of the existing dilapidated and low efficiency pumps and modernization of associated equipment and facilities will improve both water conveyance and energy efficiency.

10. At water user level, the project aims to improve capacity of water users associations (WUAs) that are responsible for O&M of on-farm I&D, possibly reorganize WUAs to align them based on hydrological boundaries, increase WUAs' coverage areas in CIS (83% at present) and collection rate of water service fee from water users (46% at present), and increase farmers' water use skills (50% of field application efficiency at present), to increase sustainable O&M and efficient WRM of CIS. Coupled with these measures, introduction of high value crops and production of high-quality seeds will improve the profitability of farm management.

## **A. Impact and Outcome**

11. The impacts of the project are (i) irrigated land in good condition and food security increased by 2021; and (ii) the efficiency of water-resources use increased by 2020. The outcome of the project will be increased agricultural production in the CIS area of PRB.

## **B. Outputs**

### **1. Output 1: Water resources in PRB better managed**

12. This output has two components (i) improving WRM system in the Tajikistan portion of the PRB; and (ii) effective joint management of the PRB. The implementation of the output will



be fully supported by one of three consulting services to be recruited under the capacity development delegated TA funded by the Japan Fund for Poverty Reduction (JFPR).

**a. Improving WRM system in the Tajikistan portion**

13. The project will support the country's ongoing water sector reform, aiming at integrated WRM in PRB (Footnote 3). This would involve establishment of the RBO at Kulob and its sub-office in Gorno Badakhshan Autonomous Oblast (GBAO) and PRB council(s), their capacity development, and support of RBO operations expenses.

14. In particular, this component will support the (i) drafting of a river basin management plan by the RBO and its sub-office to clarify and monitor water allocations; and (ii) review and approval of the river basin management plan by the PRB council(s) with proper and active participation by different water users and women in the consultation process. The capacity development will also be provided to MEWR's local staff and RBOs' staff for accurate measurement and recording of allocated water flow at key sections along Pyanj River (at present, actual flow of Chubek main canal is 63% of recorded allocation) and for appropriate processing of collected data with development of the database and data processing system.

**b. Effective joint PRB management**

15. The component will support the government to establish and implement Afghanistan-Tajikistan Joint Pyanj River Basin Commission (JPRBC) and it would include (i) establishment of a working group in Tajikistan under the chair of MEWR with participations from other relevant authorities; (ii) working group consultations and bilateral meetings with Afghanistan government as needed, (iii) drafting and finalization of an agreement on the formation of the JPRBC and its institutional structure and implementation plan, and regulations on administrative and technical operational procedures, based on international and national laws, and regional experience; and (iv) preparations of plans for capacity building for JPRBC staff and to implement the agreement and capacity building plans.

16. Bilateral meetings will be facilitated to discuss and finalize the draft agreement. Finally, the agreement and the regulations will be signed by the two countries (sectoral ministries and Ministries of Foreign Affairs). The Afghanistan government side is expected to carry out the above tasks with ADB's facilitation.<sup>4</sup> The institutional structure of the JPRBC proposed under ADB's financing regional TA,<sup>5</sup> and reconfirmed by MEWR under ADB's financing project preparatory TA is presented in Figure 1.<sup>6</sup>

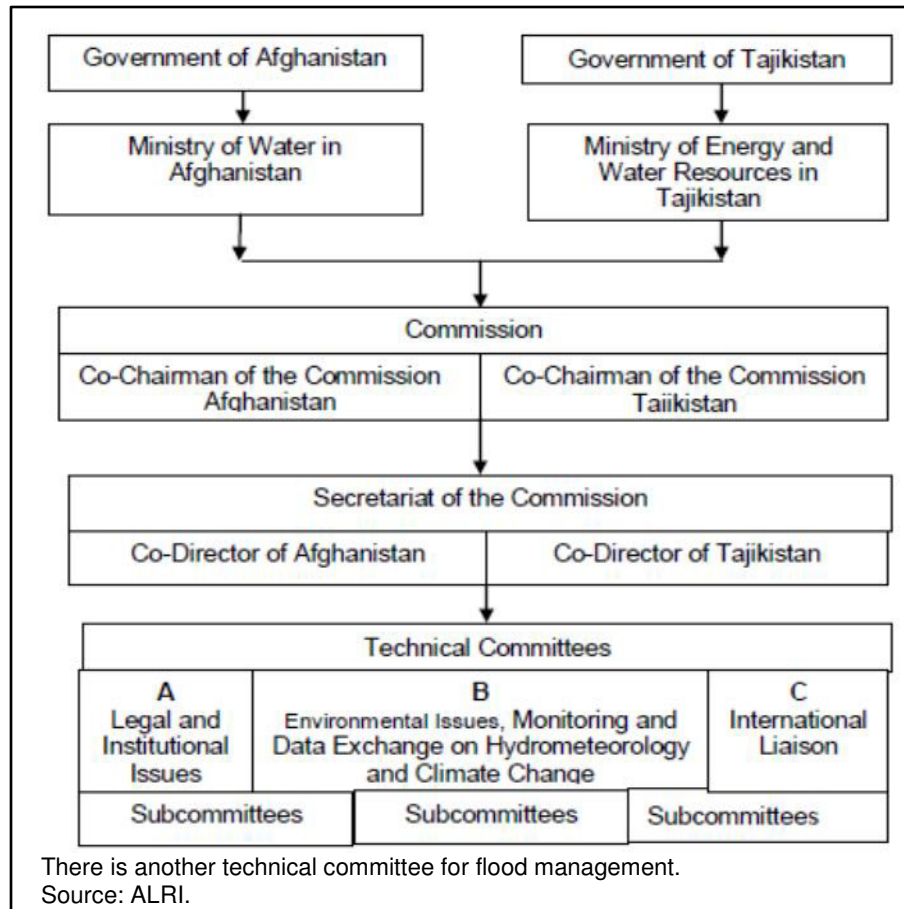
---

<sup>4</sup> Same approach is expected from Afghanistan side under the investment project (Project Number: 48042-001, Proposed Grant and Administration of Grant: Panj-Amu River Basin Sector Project) currently being prepared by ADB.

<sup>5</sup> ADB. 2008. *Regional Technical Assistance for Improved Management of Water Resources in Central Asia (Consultant Draft Final Report, September 2013)*. Manila.

<sup>6</sup> ADB. 2014. *Project Preparatory Technical Assistance for Water Resources Management in Pyanj River Basin*. Manila.

**Figure 1: Structure of JPRBC**



## 2. Output 2: Modernized and climate proofed CIS WRM infrastructure fully operational

17. Output 2 has four components (i) modernization and rehabilitation (M&R) of I&D infrastructure and its climate proofing, (ii) construction of sediment excluding basin, (iii) M&R of pumping units; and (iv) capacity development of local ALRI offices.

### a. M&R of I&D infrastructure and its climate proofing

18. The infrastructures proposed for M&R include Chubek main canal includes head regulator, escape structure, cross regulators, offtake structures, inter-farm and on-farm I&D canals, pump feeding canals, and associated structures. The capacities of these infrastructures have been checked to meet the (i) water requirements for the proposed new and more intensive cropping pattern; and (ii) the climate change risks anticipated during the next 50 years.

19. Except for few instances where climate proofing requires remodeling, most proposed works pertain to addressing deferred maintenance. While the sediments along main and inter-farm canals and drains which have reduced the irrigation conveyance capacity will be removed by ALRI using heavy machineries to be procured under the project, and the sediments along on-farm canals will be removed by farmers and WUAs. The M&R of various structures will be financed under the project.

20. The following are major works required for main canal M&R: (i) rehabilitation of canal banks that serve as inspection roads to facilitate O&M, and access to water monitoring installations; (ii) rehabilitation of Chubek Main Canal Head Regulator (CMCHR) and escape structure; (iii) rehabilitation of existing nine cross regulators; (iv) rehabilitation of existing 13 offtake structures to inter-farm canals; (v) replacement of all gates installed at head regulators and cross regulators; and (vi) installation of automatic water level measuring and recording structures on each diversion structures and new gauging wells upstream of all offtaking and cross regulator structures and system control and data acquisition (SCADA) system which will connect each measuring and recording structures.

21. The following are typical major M&R works required for inter-farm canal depending on deteriorated conditions in each canal: (i) rehabilitation of existing head and cross regulators; (ii) installation of measuring structures (i.e., gauging sections and hydro-post) downstream of head-regulators and canals where sufficient head is available, and all offtakes feeding on-farm canals with provisions of hydro-bridges on canals for measuring the velocity, following international standard; (iii) installation or rehabilitation of cross drainage structures to convey water across drainage channels below and above canals; (iv) reconstruction or rehabilitation of aqueducts; (v) rehabilitation of road bridges and pedestrian crossings; (vi) repair or replacement of gates at the inter-farm head and cross regulators; and (vii) M&R of offtakes to on-farm canals. For the ease of access to water by households, 12 water points along the main canal and 3 water points along each target inter-farm canal will also be provided.

22. The M&R of on-farm canals include the concrete lining or rehabilitation of concrete flumes and installation of flow measurement (hydro-post) at each intake.

#### **b. Construction of sediment excluding basin**

23. Pyanj River carries huge amounts of sediments with about 460,000 cubic meter ( $m^3$ ) of suspended sediments entering the CIS every year posing a huge burden on the O&M budget for cleaning the irrigation network and a cause of accelerated deterioration of pumps. Currently, the bed load is excluded and diverted back to the Pyanj River at the CMCHR through the escape channel with sill level 60 centimeters (cm) lower than the sill level of the CMCHR. As sediment concentration is highly associated with discharge, about 84% of the sediments enter the CIS during the three summer months of June–August. There is a pressing need for minimizing sediments entry to CIS.

24. The Pyanj River flows are much higher than the CIS diversions throughout the year with a minimum of about 3 m head difference from the proposed sediment excluding basin during high flow months creating conditions favorable for effective hydraulic flushing of a large proportion of sediments, thus significantly reducing the cost of dredging. The capacity of the lead channel is  $400 m^3/sec$ , and capacity of the Chubek Main Canal is  $150 m^3/sec$  compared to CIS peak discharge requirement with climate proofing of  $98.69 m^3/sec$ . Thus, at CMCHR, about  $270 m^3/sec$  could be used for flushing the bed load thus releasing  $130 m^3/sec$  in the Chubek Main Canal. Out of the  $130 m^3/sec$ ,  $98.69 m^3/sec$  could be released to meet the peak irrigation water requirement with climate proofing while the remaining, about  $30 m^3/sec$ , could be used for hydraulic flushing at the new sediment excluding basin. Thus, the existing system provides enough capacity for continued flushing of the base load at existing sediment escape channel at the CMCHR and about  $30 m^3/sec$  flow required for hydraulic flushing at the new sediment excluding basin along the left bank of the Chubek Main Canal.

25. Under the existing arrangements for hydraulic flushing of the base load at the CMCHR, the construction of a new sediment excluding basin will remove about 85% of the coarser portion of the suspended sediments, 70% through hydraulic flushing and 15% that settle in the bed, by mechanical equipment. The remaining 15% of the suspended sediment which consist mainly of silt and clay will pass on to the CIS, where about half would settle in the irrigation canals that ALRI local offices and WUAs still need to remove and the remaining half deposited in the fields.

26. The sediment excluding basin will be located about 250 m downstream of the CMCHR on the left side of the Chubek Main Canal. The main elements of the sediment excluding basin are: (i) 100 m long feeder channel from the existing Chubek Main Canal; (ii) intake of sediment excluding basin with gates; (iii) sediment excluding basin (500 m x 100 m) in two compartments which can be operated independently; (iv) gated flushing sluice with 160 m long channel leading to Pyanj River; (v) 650 m channel from sediment excluding basin to the existing main canal; (vi) fall structure at the junction of channel from the sediment excluding basin and the main canal; and (vii) strengthening of the flood embankment between the sediment excluding basin and Pyanj River.

### **c. M&R of pumping units**

27. There are two main cascade pumping systems in CIS. One is Urtaboz cascade pumping system supplying water to agricultural land in Farkhor District through six pump stations (PSs) and the other is the Vose cascade pumping system supplying water through fourteen PSs to agricultural lands of Vose and Kulob districts. The Vose cascade system further consists of three different cascade pumping systems i.e., Kulobdarya, Janubi and Lenin. In addition, there is also one isolated single stage pumping station at Guliston which takes water from the canal and supplies water to 40 ha of farm area.

28. With due consideration of the pump selection criteria, estimated modernization cost, and available funds, Urtaboz pumping system (complete with all PSs of Urtaboz 1, 2, 3, and 4), Janubi pumping system (consisting of Janubi 1 and 2, Perikatchka, and Moskva 1 and 2 PSs), and the central repair and maintenance facility of CIS located in Vose have been selected for M&R.

29. Urtaboz 1 PS is the base of Urtaboz cascade pumping system. It supplies water to 1,130 ha of farm area as well as pumps water to the next level PSs Urtaboz 2, Urtaboz 3, Utoboz 4 and 4A that serve 215 ha, 424 ha and 3,930 ha, respectively. In Urtaboz 1 PS, 6 pumps supply water to Urtaboz 3 and Urtaboz 4 and 4A PSs. Out of the 6 pumps, only 2 are in working condition reducing water supply to 33% of the old design peak water demand of Urtaboz 3 and 4 and 4A PSs. Similarly, 2 pumps each in the Urtaboz 1 PS which supply water to Urtaboz 2 PS and to 1,130 ha are operating at only 50% capacity to meet the old design peak water demand. Urtaboz 3 and 4 and 4A PSs are also operating at reduced capacity of 50%. Urtaboz 4 and 4A PS which supply water to 3,930 ha of area is receiving only 33% of its old design peak water demand. Even if it receives 100% of the peak water demand, major pumps of Urtaboz 4 and 4A PSs, designed to supply water to 3,100 ha out of total 3,930 ha can work at only 50% capacity in the present condition.

30. Overall, this group of PSs covering about 40% of the total pumped irrigation area is in very bad shape and requires priority M&R.

31. In the Janubi cascade, the base PSs are Janubi 1 and 2 with six and five pumps respectively, feeding a command area of 1,520 ha jointly. Both these base PSs also supply water to the next level PSs at Perikachka and Moskava 1 and 2 which serve 725 ha, 180 ha and 178 ha area, respectively.

32. In Janubi 1 PS, only 2 out of 6 pumps and in Janubi 2 PS, only 2 out of 5 pumps are in working condition. This resulted in less than 50% of water supply capacity to meet old design peak water demand. Janubi 1 and 2 PSs supply water to 1,520 ha of area and Perikachka PS, and Moskva 1 and 2 PSs. At Perikachka PS, which supply water to 725 ha of area, only one out of two pumps is operating reducing the capacity to 50% of the old design peak water demand. At Moskva 1 PS, practically no pump is working whereas at Moskva 2 PS, nothing exists except the skeleton of the pump house structure.

33. Overall, the Janubi cascade pumping system covering about 18% of the total pumped irrigation area is in very bad shape and requires M&R on priority.

34. M&R of these two cascade pumping system will cover the following based on the result of diagnostic assessments in each PS completed under ADB's TA:<sup>7</sup> (i) replacements of pumps and motors; (ii) replacement of suction and discharge pipes of pumps and valves; (iii) installations of ventilation and air-conditioning system; (iv) replacement or installation of instruments (e.g., pressure gauges, pressure transmitters, pressure switches, flow meters); (v) provision of local SCADA system; (vi) M&R of electrical system; (vii) M&R of PS buildings; and (viii) replacement or new installations of overhead cranes and material handling devices.

35. With these M&R, the following benefits are anticipated: (i) improved, timely and reliable water supply to farmers; (ii) increased energy efficiency of pumping by more than 25% compared to the existing conditions and reduced O&M cost; and (iii) improved relations of water supplier with farmers by provision of transparent and timely water discharge data recorded and monitored through SCADA system.

36. In addition to the above proposed works, a feasibility study will be carried out to pilot various options for economically viable irrigation and farming at currently pumped irrigated areas outside the scope of the component. The study will explore efficient sources of irrigation water, using more economical irrigation methods, producing high value crops, and other activities that would make production from these areas economically viable. Depending upon the experience gained and results achieved, the pilot study could be replicated to other areas.

#### **d. Capacity development of local ALRI offices**

37. Under the component, the capacities of the local offices of ALRI and WUA Support Unit (WUASU) will improve to enable them to perform their duties more efficiently and effectively. This will include modernization of buildings, provision of office and field equipment, training of the staff, and study tours.

38. The District ALRI Offices in particular lack equipment and facilities to measure water flows and sediment concentration which provides important information for efficient design, monitoring, and evaluation. The output has allocated enough funds in the I&D and M&R component to establish hydroposts at key points, and install automatic electronic devices to record water levels and continuously communicate water level data through SCADA to a central

<sup>7</sup> ADB. 2014. *Project Preparatory Technical Assistance for Water Resources Management in Pyanj River Basin (Consultant Final Report)*. Manila.

office. To support this, the component allocates sufficient funds for procurement of stream gauging and sediment sampling equipment and establishment of a laboratory for analyzing collected sediment samples. This would ensure continuous collection of accurate flow and sediment data and thus facilitate proper monitoring and evaluation (M&E).

39. In addition, ALRI central office staff will receive trainings from a service provider and the NGO that will implement Output 3 for ALRI's use of the M&E system using satellite remote sensing technology to assess water use efficiency and water conveyance efficiency.

40. Coupled with the machineries to be procured under the project for O&M of CIS WRM infrastructure under Output 2 (see para. 19), capacity building of local ALRI staff will enable them to: (i) timely and accurately allocate water volume to each inter-farm irrigation canal and each on-farm canal; (ii) efficiently operate and maintain CIS infrastructure including regular removal of sediment along CIS I&D canals except for on-farm I&D infrastructure; (iii) regularly monitor and evaluate CIS conveyance capacity and efficiency; and (iv) effectively communicate with WUAs to obtain feedback irrigation water need. In addition, coupled with Output 3, capacity building of WUASU will enable them to (i) train and guide existing WUAs in water measurement, farm water management, running WUAs, and record keeping of financial and office proceedings; (ii) possibly reorganize WUAs following hydrological boundaries; and (iii) form new WUAs to increase total O&M coverage to the entire CIS area. The project will also provide office and field equipment to facilitate their establishment, mobility and performance in their assigned tasks including O&M. Further, ALRI Training center at their district offices will be modernized and provided with equipment to be a respectable venue for training.

### **3. Output 3: Farm management capacity and water use skill improved**

41. The objective of this output is to improve the farm management techniques and water use skill in the CIS command area to increase agricultural productivity and profitability. There are three components under the output: (i) demonstration to promote profitable farm management and efficient water use; (ii) production of high-quality seeds of major crops; and (iii) establishment and possible reorganization of WUAs and capacity development of all WUAs and beneficiaries in the CIS area.

42. Women are already actively involved in agriculture at their family farms and, if required, on other farms in the neighborhood. However, their participation in managerial positions such as in WUAs secretariat needs to be encouraged. Women participation will be promoted, and monitored in all the above activities. The project has built in motivation and provision to accommodate gender in the general and specific positions of authority within the limits of the project jurisdiction. The scope of women's active involvement under output 3 will be limited to the CIS command area in Farkhor, Hamadoni, and Vose districts. Special attention will be given to promote simpler value addition techniques in the project area. Women would be the focus of such activities. The non-government organizations (NGO) to be recruited under the output will make preparations to conduct the conference to promote value addition and promote understandings among the stakeholder and if possible, facilitate contracts.

43. Poor financial capacity and lack of credit availability to the project area farmers have been identified as some of the constraints towards achieving higher yields. This being

addressed through the agriculture and income diversification credit line, totaling \$3.8 million made available under ADB's ongoing Grant 0352-TAJ.<sup>8</sup>

44. A reputed international NGO(s) with credible experience with possible experienced university teachers will be recruited to provide consulting services to implement the output including trainings, assessment of the required equipment and supplies, M&E of the performance and preparation of the reports, together with the local staff of the Department of Agriculture, ALRI, and WUASU.

**a. Demonstration to promote profitable farm management and efficient water use**

45. Demonstration plots for a total of 300 ha will promote more profitable farm management using improved agronomic techniques conducive for higher productivity and profitability per unit of farmland. The number of plots, type of activities to be demonstrated in each plot, and geographic distribution of plots will be determined during project implementation. The proposed activities would include but not be limited to the following:

- (i) **Promotion of improved seeds.** Use of certified seeds of improved varieties of wheat, cotton, and other important crops to replace the seeds used from the previous year's produce, or purchase of low quality seeds from the local market, and introduction of hybrid maize to significantly increase yields and value of production compared to those of existing varieties;
- (ii) **Promotion of efficient farm operations and management.** Training on how to make and assess farm management balance sheet; drill sowing of wheat which will require almost half of the seed rate compared to sowing by broadcasting; sowing of wheat with drill without plowing to demonstrate production of two crops a year and saving in the cost of land preparation; other improved farm operations including zero or minimum tillage; and replication of improved practices showcased in the demonstration farms in CIS area;
- (iii) **Promotion of balanced use of agricultural inputs.** Balanced and timely application of fertilizers on wheat, cotton, and other important crops to enhance yields; and herbicide sprays for weed control in wheat, cotton, vegetables, and orchards. It was observed that weed infestation especially in vegetables and orchards is very high in the project area; and
- (iv) **Promotion of High-Efficiency Irrigation System.** Drip irrigation to be introduced for orchards and vegetables in the pumped irrigated area as a measure of introducing water economy in high-cost water as well as to promote decreased cost of inputs, and increased production and productivity for water.

46. An M&E monitoring system using satellite remote sensing technology to assess water use efficiency and water conveyance efficiency was developed under the project preparation technical assistance to prepare the project. The developed M&E system will be used during project implementation to evaluate these performances and to recommend remedial measures to improve efficiencies. The M&E system will be used mainly by NGO with participation from a service provider specializing in satellite remote sensing technology but the service provider and the NGO will also provide training to ALRI staff for their use of the M&E system and will hand over the system to ALRI.

---

<sup>8</sup> ADB. 2013. *Grant to the Republic of Tajikistan for Building Climate Resilience in the Pyanj River Basin Project*. Manila.

47. Simpler value addition techniques particularly to process, preserve, and market perishable fruits and vegetables grown in the project area will also be promoted. Possibilities of value chain will be explored by holding a three-day conference with participants from international and national food companies, farmers in the project area, and government officials.

48. Periodic short training sessions will also be conducted for demonstration and other farmers in CIS area. The topics should address the current issues that farmers are facing, and would generally cover but not limited to the new practices and technologies introduced under the project like information on new crops introduced, double cropping, minimum tillage, efficient methods of irrigation, water conservation and water saving technologies, off-season production, tunnel farming, efficient harvesting and post-harvest, and value addition, financial management, preparing crop budgets, and selecting most suitable crop mix at a farm.

#### **b. Production of high-quality seeds**

49. There are no government seed production farms in the project area, and the field seed laboratories established at the district offices of the Department of Agriculture during the Soviet era are no longer functional. The Department of Agriculture has contract with three larger farms in Vose District for production of certified from the foundation seed provided by the Department of Agriculture. Currently, only wheat and cotton seeds are reproduced.

50. The poorer farmers are particularly suffering from poor quality seeds either from the previous crop or bought from the local market. The component will (i) supply foundation seed to seed growers to produce the seeds by themselves as well as for a large number of smaller farmers; (ii) diversify seed production for vegetable, fruit and other crops in addition to wheat and cotton seeds being produced; (iii) develop capacity of the seed growers in seed production; and (iv) reestablish field seed laboratories at district offices of Department of Agriculture at Hamadoni, Farkhor, and Vose districts and develop their capacity to certify the seeds.<sup>9</sup>

51. The component will procure high quality foundation seed for wheat, cotton, and some other important crops and distribute seed enough for 5 ha during the first year of project implementation to the selected willing seed growing farmers with enough resources to invest in the required inputs. During the growth period, the project-hired NGO and seed specialists from the Department of Agriculture will regularly visit and advice the farmers on ways and means to ensure quality of the seed produced. At the crop maturity, the seed recipient farmers will return to the project one-and-a-half times the seeds they received. The seed returned will be provided to other farmers for further multiplication, and this cycle will continue.

#### **c. Establishment and possible reorganization of WUAs and capacity development of WUAs and beneficiaries**

52. Since the time organization of WUAs started in the country, a total of 27 WUAs covering the entire project area were established with the help of international agencies. At present however, there are only 20 WUAs covering about 83% of the project area. They are organized, generally, on administrative (jamoat) boundaries rather than hydrological. To facilitate their efficient management, the component will support their possible reorganization on hydrological boundaries, which is likely to face resistance from the local administration as well as the

---

<sup>9</sup> The Department of Agriculture will be required to ensure adequate budget allocation and recruitment of adequately qualified and trained staff for seed laboratories and field staff to guide and supervise the private seed producers.



beneficiaries. The component will also facilitate formation of WUAs in the remaining project area, also, on hydrological boundaries.

53. It has been observed that, currently, the WUAs are not adequately equipped and trained to undertake their tasks efficiently. They are not quite conversant with water distribution and measurement in a practical way. The component will build capacity of the existing and new WUAs by providing them with office, field equipment, and training to the office bearers and technical staff to perform their expected tasks in a financially sustainable manner. Their institutional capacity to run WUAs like conducting formal meetings, taking decisions, M&E of their financial status and keeping financial records as well as official proceedings will be improved through training, and study tours.

54. To ensure continued periodic training to the new office bearers and staff, training modules will be prepared in close association with the WUASU, which was established in 2007 in the former MLRWR to facilitate establishment and monitoring of the WUAs. The capacity building to WUASU staff will be provided under output 2 to reactivate WUASU and enable them to take responsibility for all activities related to the WUAs. The WUASU will be associated with project activities implemented by NGO throughout the implementation period to facilitate its capacity development and enable it to undertake similar activities in the future in the project area as well as in other irrigation systems of the country.

## **II. IMPLEMENTATION PLANS**

### **A. Project Readiness Activities**

55. The loan and grant financing from ADB's Special Fund resources for the project, and the grant and TA grant financing from JFPR are expected to become effective in the fourth quarter of 2016. The project is expected to be physically implemented from January 2017 to December 2021 with financial closing in June 2022.

56. Prior to the approval of the loan, grants, and TA grant, the detailed design and the draft bidding documents for the contract of M&R of Ustaboz and Janubi cascade pumping systems have been prepared for international competitive bidding. The advertisement and necessary processing to recruit two consulting services packages for outputs 2 and 3 and one consulting service package for output 1 (i.e. delegated TA) have commenced by the existing project management office (PMO) under the ALRI of ADB-financed Grant 0352-TAJ (footnote 6), which serves the PMO under the ALRI for outputs 2 and 3 of the project, and by the Project Implementation Group (PIG) of MEWR for output 1 with ADB's facilitation to enable them to start implementing their respective outputs immediately after the effectiveness of the loan, grants, and TA grant.

57. Additional ALRI PMO staff will be appointed and/or employed prior to loan, grants, TA grant effectiveness, and key staff in each project implementation office (PIOs) under the ALRI's PMO will be appointed and/or employed prior to the fielding of consultants.

58. The main project readiness activities are provided in Table 1.

**Table 1: Project Readiness Activities**

Indicative Activities	2016												Responsibility	
	1	2	3	4	5	6	7	8	9	10	11	12		
Preparation of detailed designs and bidding documents for the planned contract.		X												ADB
Preparation of the terms of reference and cost estimates for the consulting services to support each output		X												ADB
Start advertisement and processing to recruit three consulting services by PMO				X										GoT
Recruitment of three consulting service packages											X			GoT
<b>Loan and grant negotiations</b>							X							<b>ADB-GoT</b>
<b>ADB Board approval</b>									X					ADB
<b>Loan and grant signing</b>										X				ADB-GoT
<b>Additional PMO staff</b>												X		GoT
<b>Government legal opinion provided</b>											X			GoT
<b>Government budget inclusion</b>												X		GoT
<b>Loan and Grant effectiveness</b>												X		<b>GoT-ADB</b>

ADB = Asian Development Bank; GoT = Government of Tajikistan; M&R = modernization and rehabilitation; PMO = project management office.

Source: ALRI and MEWR.

## B. Overall Project Implementation Plan

59. The project implementation schedule is shown in Figure 2. Implementation of activities will start from January 2017 after loan effectiveness, and the project's physical completion and loan and grants (including TA grant) financial closings are expected on 31 December 2021 and 30 June 2022, respectively.

Figure 2: Proposed Project Implementation Schedule

No.	Outputs/Components/Major Activities	2016				2017				2018				2019				2020				2021				2022			
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
1	Output 1: Water Resources in PRB better managed.																												
	a Improving WRM System in Tajikistan Portion																												
	b Effective Joint PRB Regional Management																												
2	Output 2: Modernized and Climate-proofed CIS WRM infrastructure fully Operational																												
	a M&R of I&D Infrastructure and Its Climate Proofing																												
	b Construction of Sediment Excluding Basin																												
	c M&R of Pumping Units																												
	d Capacity Development of ALRI Staff																												
	e Sediment Cleaning Work Along CIS by ALRI																												
3	Output 3: Farm Management Capacity and Water Use Skill improved																												
	a Demonstration to Promote Profitable Farm Management and Efficient Water Use																												
	b Production of High-quality Seeds																												
	c Establishment and Possible Reorganization of WUAs and Capacity Development																												
	d Sediment Cleaning Work Along CIS On-farm canals by WUAs																												
4	Project Management																												
1	Project Management																												
	a Establishment of PMO and PIOs				X																								
	b Recruitment of Consultant for Each Output																												
	e Review of Feasibility Report and Bidding Documents of Pumps																												
	f Preparation of Detailed Design and Tender Documents																												
	g ICB for M&R of Pumps and Sediment Excluding Basin																												
	h ICB for M&R of I&D Infrastructure																												
	i ICB for Heavy Machinery for O&M of CIS																												
	j Preparation of Other smaller Contracts																												
2	Project M&E																												
	a Preparation of Financial Statements of Expenditures																												
	b Develop M&E System																												
	c Site Specific Environmental Management Plan																												
	d Environment and Health Safety Plan																												
	e Gender Action Plan																												
3	Project Reporting																												
	a Quarterly Progress Reports																												
	b Midterm Socioeconomic Survey and Economic Analysis																												
	c ALRI's Submission of CIS Asset Management and O&M Plan																												
	d Government's Approval of SIC Asset Management and O&M Plan																												
	e Government's Project Completion Report																												

ALRI = Agency of Land Reclamation and Irrigation, CIS = Chubek Irrigation System, I&D = irrigation and drainage, ICB = international competitive bidding, M&E = monitoring and evaluation, M&R = modernization and rehabilitation, O&M = operation and maintenance, PIO = project implementation office, PMO = project management office, PRB = Pyanj River basin, WRM = water resources management, WUA = water users' association.

Source: ALRI and MEWR.

### III. PROJECT MANAGEMENT ARRANGEMENTS

#### A. Project Implementation Organizations–Roles and Responsibilities

60. **EAs.** MEWR and ALRI are the two executing agencies (EAs) for the project. The MEWR is responsible for managing output 1 and ALRI is responsible for managing outputs 2 and 3. They will assign two project officials (one for managing output 1 and another for managing outputs 2 and 3). The official assigned by ALRI will supervise ALRI's PMO activities, and the official assigned by MEWR will supervise MEWR's PIG activities, and they will provide management guidance. They are also responsible for compliance with loan and grant covenants.

61. **PMO and PIO.** The existing PMO under the ALRI of Grant 0352-TAJ (footnote 8) serves as the PMO to implement outputs 2 and 3 for the project with enhancement in certain functions. The current project director will continue to serve as PMO Director. PMO and PIG will facilitate project steering group meetings by inviting representatives from the two EAs to report

implementation status and seek policy and management guidance for the project. Additional ALRI PMO staff and key staff in each PIO will be appointed and/or employed.

62. The PMO and PIG will be responsible for (i) implementing project activities in accordance with the project design; (ii) coordinating activities between ALRI and MEWR, PIOs and other agencies concerned; (iii) ensuring compliance with environmental and social safeguard requirements; (iv) maintaining appropriate accounts, including reports on withdrawal applications and disbursement; (v) carrying out recruitment of consulting services and procurement activities; (vi) developing CIS asset management and O&M plan to comply with the loan covenant; (vii) monitor, evaluate and report on project progress, and disseminate project progress (e.g., planned and completed project activities including procurement) through ALRI's or Project's website; and (viii) preparing quarterly progress and other reports in format acceptable to ADB.

63. Three PIOs under ALRI will be established at the field level. The PIO at Hamadoni district will be responsible for overseeing and monitoring activities of output 2 (i.e., M&R of Chubek main canal, sediment excluding structure, and the I&D network) and output 3 in Hamadoni district. The PIO at Farkhor district will be responsible for overseeing and monitoring activities of output 2 (i.e., M&R of Urtaboz pumping system and I&D network) and output 3 in Farkhor district while the PIO at Vose district will be responsible for overseeing and monitoring activities of output 2 (i.e., M&R of Janubi pumping system and I&D network) and output 3 in Vose and Kulob districts.

64. **Project Steering Group.** The Project Steering Group will be co-chaired by the Director of ALRI and the First Deputy Minister of MEWR, and will comprise senior staff of ALRI and MEWR. Its mandate will include (i) providing PMO and PIG with policy guidance on the implementation of the project; (ii) monitor project impacts; (iii) review and evaluate project performance; (iv) review project audits; and (v) ensure close coordination among agencies involved in the project activities. The Project Steering Group will meet as often as necessary to discharge its functions and in any event not less than quarterly.

65. **Project Steering Committee.** The Project Steering Committee will be chaired by the Deputy Prime Minister with the following members: Director of ALRI, deputy ministers of the Ministry of Finance, Ministry of Foreign Affairs, Ministry of Economic Development and Trade, MEWR, Ministry of Agriculture, Chairman of Committee for State Investment and State Property Management, Committee for Women and Family Affairs, and Committee for Environmental Protection. The Committee will be held upon request and provide the two EAs with strategic and policy guidance on project implementation.

66. The detailed role and responsibilities in each organization is provided in Table 2.

**Table 2: Roles and Responsibilities in Each Organization**

<b>Project implementation organizations</b>	<b>Management Roles and Responsibilities</b>
<b>Ministry of Finance (MOF)</b>	Borrower: <ol style="list-style-type: none"> <li>(i) Sign of loan agreement;</li> <li>(ii) Monitor of project implementation and providing respective coordination and facilitation;</li> <li>(iii) Allocate and release counterpart funds;</li> <li>(iv) Endorse to ADB the authorized staff with approved signatures for withdrawal applications (WAs) processing; and</li> <li>(v) Process and submit to ADB any request, when required, for reallocating the loan proceeds.</li> </ol>
<b>MEWR and ALRI</b>	Executing Agencies: <ol style="list-style-type: none"> <li>(i) Assign project directors (one for output 1 and another for outputs 2 and 3);</li> <li>(ii) Establish the PMO and PIOs with the required staffing (for ALRI);</li> <li>(iii) Overall responsibility for managing of project outputs (MEWR responsible for the output 1, and ALRI responsible for outputs 2 and 3);</li> <li>(iv) Overall responsibility for reporting on physical, non-physical, procurement and financial progress for project activities including the development of the government's project completion report and its submission to ADB;</li> <li>(v) Timely provision of agreed counterpart funds for project activity;</li> <li>(vi) Conduct timely financial audits as per agreed timeframe and taking recommended actions;</li> <li>(vii) Comply with Loan/Grant Agreement covenants; and</li> <li>(viii) Public disclosure of project outputs.</li> </ol>
<b>PMO and FIG</b>	<ol style="list-style-type: none"> <li>(i) Update an overall implementation plan, preparing annual project budget, and request MoF PMO operation budget;</li> <li>(ii) Establish the imprest account and maintaining the accounts;</li> <li>(iii) Update procurement plan, as necessary;</li> <li>(iv) Disseminate project progress (e.g., planned and completed project activities including procurement) through ALRI's or Project's website;</li> <li>(v) Recruit consultants and procuring works and goods;</li> <li>(vi) Coordinate with other government agencies, departments and units, local governments, district office, jamoats, communities as necessary;</li> <li>(vii) Guide the plans, surveys, studies, detailed designs, capacity development activities, demonstration activities, workshops to be prepared or implemented by the consultants;</li> <li>(viii) Monitor and supervise consulting services and PIO operations;</li> <li>(ix) Monitor and supervise works conducted by contractors, and the delivery of goods procured by suppliers with the support of the consultants;</li> <li>(x) Implement gender action plan and updating the plan as necessary;</li> <li>(xi) Monitor project progress and evaluating project benefits and social and environmental impacts;</li> <li>(xii) Conduct economic analysis at the midterm of the project implementation;</li> <li>(xiii) Implement required loan and grant covenants including the development of CIS asset management and O&amp;M plan;</li> <li>(xiv) Manage loan disbursement and maintaining financial accounts; and</li> <li>(xv) Prepare periodic implementation progress reports.</li> </ol>

<b>ALRI PIOs (Hamadoni, Farkhor, and Vose)</b>	<ul style="list-style-type: none"> <li>(i) Day-to-day field level implementation of the respective works and activities for outputs 2 and 3;</li> <li>(ii) Conduct inspection of the quality and standard of works and goods, and provide feedback, guidance, and instruction to the contractors and suppliers;</li> <li>(iii) Supervise the performance and outputs of the contractors, suppliers and consultants;</li> <li>(iv) Prepare periodic progress reports and other required documents for submission to the PMO; and</li> <li>(v) Coordinate implementation activities with district office, local governments, jamoats, communities, and other PIOs.</li> </ul>
<b>ADB</b>	<p>Financier</p> <ul style="list-style-type: none"> <li>(i) Assist the EAs and PMO in providing timely guidance at each stage of the project for smooth implementation;</li> <li>(ii) Review all the documents that require ADB approval upon the submission by the PMO;</li> <li>(iii) Conduct periodic project review missions, a midterm review, and a completion mission;</li> <li>(iv) monitor EAs' compliance of all loan and grant covenants</li> <li>(v) Timely process withdrawal applications and release eligible funds;</li> <li>(vi) monitor EAs' compliance of financial audit recommendations;</li> <li>(vii) Regularly update the project performance review reports with the assistance of the EAs and PMO; and</li> <li>(viii) Regularly post on ADB website the updated project information documents for public disclosure, and the safeguards documents as per disclosure provision of the ADB Safeguards Policy Statement (2009), and ADB Public Communications Policy.</li> </ul>

Source: ALRI.

## **B. Key Person Involved in Project Implementation**

### **1. Executing Agencies and ADB**

#### **Executing Agencies**

##### **ALRI**

Kholmurod Rahmon  
Director  
Telephone:  
Shamsi Street 5/1, Dushanbe, Tajikistan

##### **MEWR**

Usmonali Usmonzoda  
Minister  
Telephone: +992 37 235 3566  
Shamsi Street 5/1, Dushanbe, Tajikistan

Sulton Rahimzoda  
First Deputy Minister  
Telepone: + 992 37 235 9914

##### **ADB**

Environment, Natural Resources and  
Agriculture Division

Akmal Siddiq  
Director  
Telephone No. +63 2 632 6748  
Email address: asiddiq@gmail.com

Mission Leader  
 Ryutaro Takaku  
 Senior Water Resources Specialist  
 Tel (632) 632-5158  
 Fax (632) 636-2017  
 Email: [rtakaku@adb.org](mailto:rtakaku@adb.org)

Resident Mission Focal  
 Gulsun O. Farosatshoeva  
 Senior Project Assistant  
 Telephone: +992 37 221 0558  
 Email: [gfarnosatshoeva@adb.org](mailto:gfarnosatshoeva@adb.org)

## 2. PMO and PIOs

67. The following are staff requirements in the ALRI PMO and PIOs. ALRI is responsible to identify PMO and PIO staff to accomplish implementation of outputs 2 and 3 for the project. Proposed key PMO staff requires ADB's review and approval. The roles and tasks of key PMO and PIO staffs are provided in Table 3. The MEWR will use already institutionalized PIG to implement output 1 of the project, and thus PIG staffs that are the MEWR's regular staff do not require ADB's review and approval.

**Table 3: Roles and Responsibilities of Key PMO and PIO staff**

Position	Roles and Responsibilities
PMO Director	<ul style="list-style-type: none"> <li>(i) Draft annual work programs for each output, submit them to the project director and its deputy and obtaining their agreements;</li> <li>(ii) Consult with the chief accountant to monitor budgetary expenditure, review disbursement requests, prepare the annual budget and submit these the project director and its deputy for agreements;</li> <li>(iii) Ensure the hiring of suitably qualified staff to implement the all outputs in accordance with ADB requirements;</li> <li>(iv) Guide and collaborate with the relevant staff to monitor output implementation in accordance with the agreed work program;</li> <li>(v) Attend, hold or participate in seminars, workshops, media events etc. to represent the project;</li> <li>(vi) Conduct site visits as required to monitor and correct implementation of the project;</li> <li>(vii) Develop and submit recommendations to the project director and its deputy to resolve issues which arise in the course of project implementation;</li> <li>(viii) Support the project director and its deputy in the overall project management and preparation of reports for the Government and its relevant agencies;</li> <li>(ix) Manage all staff directly working on the project, including staff grievance procedures and make recommendations to the project director and its deputy on hiring decisions;</li> <li>(x) Coordinate with relevant key staff to maintain an overview of the day-to-day operations of the project;</li> <li>(xi) Provide operational support to key staff members in the implementation of their responsibilities;</li> <li>(xii) Draft a comprehensive project reporting system, submit it to the project director and its deputy for agreements and implementations;</li> <li>(xiii) Coordinate implementation of project outputs with the relevant project related agencies;</li> <li>(xiv) Draft CIS asset management and O&amp;M plan by updating a linked document to the project document for ALRI's review and approval;</li> <li>(xv) Assist the project director and its deputy to coordinate interaction with relevant ministries and agencies, as may be required;</li> <li>(xvi) Liaise with local government administrations participating in the project to ensure successful implementation of project activities;</li> <li>(xvii) Draft project implementation reports and submit to the project director and its deputy for agreements and distributions;</li> <li>(xviii) Liaise with ADB staff and supervision missions to ensure successful completion of missions and ongoing project monitoring; and</li> <li>(xix) Implement recommendations of ADB supervision missions and associated aide-memoires, as agreed by the project director and its deputy.</li> </ul>

Chief Accountant (PMO)	<ul style="list-style-type: none"> <li>(i) Responsible for taking care of financing, funds flow arrangements, payments, recording, and monitoring of both ADB and Government funds; establish monitoring and management procedures for the imprest account and Statement of Expenditure (SOE) procedures;</li> <li>(ii) Ensure timely preparation of the annual audited project accounts and submission to ADB within 6 months of financial year end;</li> <li>(iii) Cooperate with the Project Manager and the PMO staff to develop a strategy for guiding and supporting purchase operations made by the PMO in regard to project components;</li> <li>(iv) Maintain an information on ADB disbursement guidelines, and other resources needed by staff in carrying out disbursements, imprest account operation, SOE procedures;</li> <li>(v) Negotiate and prepare standard bidding packages and specifications to evaluate, enter into contracts, oversee delivery, issue invoices, inspect/test procured items, and make payments to suppliers/contractors;</li> <li>(vi) Coordinate with the specialists of the PMO, to develop and implement payment mechanisms and procedures to support purchases of goods, technical assistance, and construction services; and</li> <li>(vii) Communicate through the Project Director information and/or documentation to the Government or ADB for their inspection, obtaining comments and/or for commencement of funding.</li> </ul>
Procurement Officer (PMO)	<ul style="list-style-type: none"> <li>(i) Develop an Operational Manual covering the procurement policies, procedures and standard documents in order to minimize cost and ensure a scheduled carrying out of procurement activities in line with the requirements of the Government and ADB;</li> <li>(ii) Maintain an information database on procurements of technical services, suppliers of equipment, ADB procurement guidelines, standard and model bidding documents, and other resources needed by staff in carrying out project components;</li> <li>(iii) Negotiate and prepare standard bidding packages and specifications to evaluate, enter into contracts, oversee delivery, issue invoices, inspect/test procured items, and make payments to suppliers/contractors;</li> <li>(iv) Establish a monitoring system within the procurement unit of the PMO for overseeing project procurement actions and coordinating necessary approvals or correcting shortcomings in procedures; and</li> <li>(v) Communicate through the Project Director information and/or documentation to the Government or ADB for their inspection, obtaining comments and/or for commencement of funding.</li> </ul>
Environment Officer (PMO)	<ul style="list-style-type: none"> <li>(i) Ensure that EMP will be updated during detailed design completed;</li> <li>(ii) Ensure that bidding documents include all requirement to implement IEE and its EMP;</li> <li>(iii) Ensure that the bidder selected will have adequate resources to implement and update EMP;</li> <li>(iv) Undertake environmental safeguards monitoring activities and prepare environmental safeguard reports to be submitted to ADB; and</li> <li>(v) Ensure that the any works are implemented in accordance with ADB SPS 2009 as well as the government law and regulation related to environment.</li> </ul>
Gender and Social Development Officer (PMO)	<ul style="list-style-type: none"> <li>(i) Ensure that LARP and GAP will be updated during detailed design and planning completed;</li> <li>(ii) Ensure that bidding documents, capacity building programs, demonstration activities, any activities for output 1 include all requirement to implement LARP and GAP;</li> <li>(iii) Ensure that the bidder selected will have adequate resources to implement and update LARP and GAP;</li> <li>(iv) Undertake social safeguards and gender monitoring activities and prepare social safeguard and gender reports to be submitted to ADB; and</li> <li>(v) Ensure that the any works are implemented in accordance with ADB SPS 2009 as well as the government law and regulation related to resettlement.</li> </ul>
M&E Officer (PMO)	<ul style="list-style-type: none"> <li>(i) Ensure that an appropriate M&amp;E strategy and plans are developed to assess the achievement of each project output;</li> <li>(ii) During initial phase of the implementation of the project, reconfirm and/or update: (a) activities with milestones, performance targets and indicators with baselines, all of which are defined in the Design and Monitoring Framework, (b) requirements indicated in the Summary Poverty Reduction and Social Strategy, and (c) Gender Action Plan;</li> <li>(iii) Ensure to update (a) activities with milestones, performance targets and indicators with baselines, all of which are defined in the Design and Monitoring Framework, (b) requirements indicated in the Summary Poverty Reduction and Social Strategy at the project completion, and (c) Gender Action Plan;</li> <li>(iv) Ensure that baseline, intermediate and end-of project socio-economic surveys and impact assessment in each output of the project are planned and conducted;</li> <li>(v) Collect necessary information to draft CIS asset management and O&amp;M plan; and</li> </ul>



	(vi) Disseminate project progress (e.g., planned and completed project activities including procurement) through ALRI's or Project's website.
PIO manager (Hamadoni, Farkhor, and Vose)	<ul style="list-style-type: none"> <li>(i) Serve as the 'Engineer' and 'Coordinator' for all activities including civil works, delivery of goods, services, capacity building, demonstration activities for outputs 2 and 3;</li> <li>(ii) Oversee all activities for outputs 2 and 3, specifically monitor their implementation in relation to the agreed work plan;</li> <li>(iii) Report any deviations from the work plan to the PMO director;</li> <li>(iv) Establish monitoring and evaluation system for output implementation;</li> <li>(v) Support the PMO director for the execution of the outputs 2 and 3;</li> <li>(vi) Identify any operational problems and raise them with the PMO director;</li> <li>(vii) Coordinate with district ALRI office, WUA support unit, district office of Ministry of Agriculture, local governments to resolve any issues in implementing outputs 2 and 3, inform them of the outputs status;</li> <li>(viii) Organize orientation or training programs to educate project participants; and</li> <li>(ix) Cooperate with the PMO director, to draft an annual work plan for the PIO, which will be submitted to the Project Director for approval.</li> </ul>

Source: ALRI.

68. The detailed staffing requirements and estimated salaries of ALRI's PMO and PIOs are provided in Table 4.

**Table 4: Staffing Requirement for ALRI's PMO and PIOs**

Expected Effectivity Date	30-Dec-16				
Scheduled Cloding Date	30-Jun-22				
PMO and PIOs started operating on	01-Jan-17				
PMO and PIOs staff started getting salaries	01-Jan-17				
<b>ALRI's PMO Staff for WRM of PRB Project</b>					
Designation	Total PM	Month/Year	P-Months	Rate, \$/Month	Total, \$
PMO Head (currently working under G0352-TAJ)	60.00	1/17 -- 6/19	30.00	382.50	11,475.00
		7/19 -- 6/22	36.00	662.50	23,850.00
Procurement Specialist (currently working under G0352-TAJ)	60.00	1/17 -- 6/19	30.00	318.00	9,540.00
		7/19 -- 12/21	30.00	412.50	12,375.00
Engineer	60.00	1/17 -- 12/21	60.00	412.50	24,750.00
Accountant (currently working under G0352-TAJ)	60.00	1/17 -- 6/19	30.00	125.00	3,750.00
		7/19 -- 6/22	36.00	250.00	9,000.00
Cashier Accountant (currently working under G0352-TAJ)	60.00	1/17 -- 6/19	30.00	320.00	9,600.00
		7/19 -- 6/22	36.00	500.00	18,000.00
M&E Specialist (currently working under G0352-TAJ)	60.00	1/17 -- 6/19	30.00	232.50	6,975.00
		7/19 -- 6/22	36.00	412.50	14,850.00
Environmental Specialist (currently working under G0352-TAJ) Intermittent inputs	30.00	1/17 -- 6/19	15.00	232.50	3,487.50
		7/19 -- 12/21	15.00	412.50	6,187.50
Driver (Not in G0352-TAJ)	66.00	1/17 -- 6/22	66.00	250.00	16,500.00
Guard (3 persons) (After stopping salary under G0352-TAJ)	30 x 3	7/19 -- 6/22	102.00	100.00	10,200.00
Cleaner (After stopping salary under G0352-TAJ)	30.00	7/19 -- 6/22	36.00	62.50	2,250.00
Chief Accountant (Not in G0352-TAJ)	30.00	1/17 --6/19	30.00	500.00	15,000.00
Accountant (Not in G0352-TAJ)	60.00	1/17 -- 6/22	66.00	412.50	27,225.00
Chief Specialist/Procurement (Not in G0352-TAJ)	60.00	1/17 --12/21	60.00	412.50	24,750.00
Social and Gender Specialist (Not in G0352-TAJ)	60.00	1/17 --12/21	60.00	412.50	24,750.00
			<b>TOTAL</b>		<b>274,515.00</b>
<b>Three ALRI's PIOs, One Each at Hamadoni, Farkhor, and Vose</b>					
<b>Staff</b>					
Deputy Director, Project Manager	60 x 3	1/17 -- 12/21	180.00	518.75	93,375.00
Specialist - Infrastructure Engineer	60 x 3	1/17 -- 12/21	180.00	412.50	74,250.00
Driver	60 x 3	1/17 -- 12/21	180.00	250.00	45,000.00
Cleaner	60 x 3	1/17 -- 12/21	180.00	62.50	11,250.00
Guards (three in each PIO)	60 x 3 x 3	1/17 -- 12/21	540.00	100.00	54,000.00
			<b>TOTAL</b>		<b>277,875.00</b>
<b>Administration</b>					
Administrator, Secretary, Accountant, Cashier	240.00		240.00	412.50	99,000.00
Admin assistant	240.00		240.00	200.00	48,000.00
Translator/Interpreter	240.00		240.00	412.50	99,000.00
			<b>TOTAL</b>		<b>246,000.00</b>
<b>GRAND TOTAL</b>					<b>798,390.00</b>

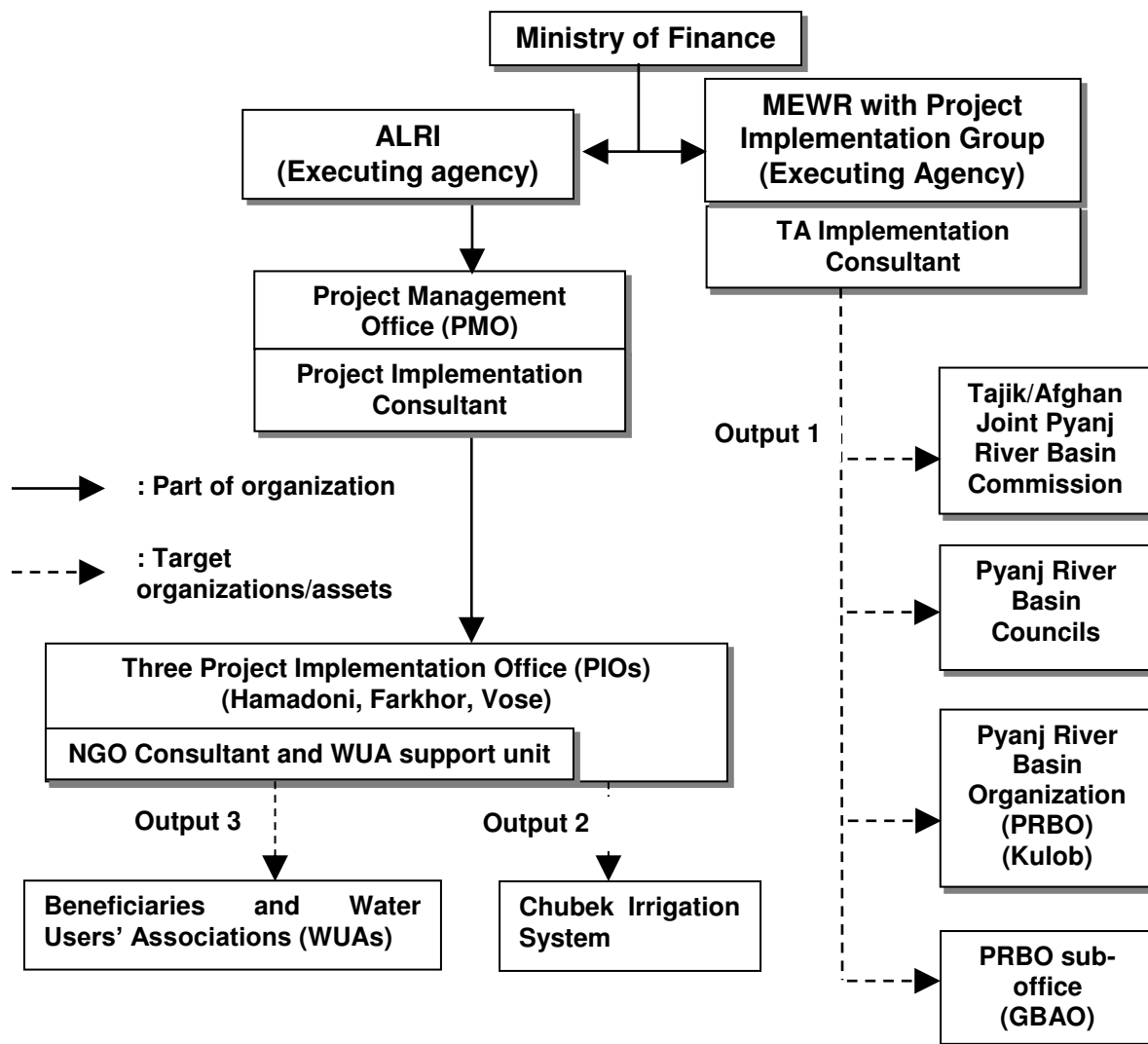
ALRI = Agency of Land Reclamation and Irrigation; M&E = monitoring and evaluation, PIO = Project Implementation Office; PMO = Project Management Office; G0352-TAJ = Building Climate Resilience in Pyanj River Basin Project.

Source: ALRI.

### C. Project Organization Structure

69. Organization structure for project implementation is given in Figure 3.

Figure 3: Project Organization Structure



Source: ADB.

#### IV. COST AND FINANCING

##### A. Detailed Cost Estimates by Expenditure Category

70. Expenditure accounts project cost summary is given in Table 5 below.

**Table 5: Detailed Cost Estimates by Expenditure Category**  
(\$ million)

Item		Foreign Exchange	Local Currency	Total Cost	% of Total Base Cost
<b>A. Investment Cost</b>					
1	Civil Works	2,462,161	12,058,276	14,520,437	50.9
2	Mechanical and Equipment				
	a Vehicles	256,957	38,543	295,500	1.0
	b Machinery	2,811,217	421,683	3,232,900	11.3
	c Pumps, Motors and Auxiliaries	3,929,421	589,413	4,518,834	15.8
	d Supplies, Others	651,304	97,696	749,000	2.6
3	Survey, Study and Design	36,821	492,479	529,300	1.9
4	Training and Workshops	7,645	102,257	109,902	0.4
5	Consulting Services				
	a Project Management	1,034,882	782,086	1,816,968	6.4
	b Capacity Developemnt	816,357	402,878	1,219,235	4.3
	<b>Subtotal</b>	<b>12,006,765</b>	<b>14,985,310</b>	<b>26,992,076</b>	<b>94.6</b>
<b>B. Recurrent Costs</b>					
1	PMO and PIO Salaries	0	997,988	997,988	3.5
2	Office Accommodation	0	274,000	274,000	1.0
3	O&M Equipment	0	76,041	76,041	0.3
4	Office/Vehicle O&M	0	202,458	202,458	0.7
	<b>Subtotal</b>	<b>0</b>	<b>1,550,486</b>	<b>1,550,486</b>	<b>5.4</b>
	<b>Total Base Cost</b>	<b>12,006,765</b>	<b>16,535,796</b>	<b>28,542,562</b>	<b>100.0</b>
<b>C. Contingencies</b>					
1	Physical	496,093	713,890	1,209,983	4.2
2	Price	474,258	682,469	1,156,728	4.1
	<b>Subtotal</b>	<b>970,351</b>	<b>1,396,359</b>	<b>2,366,711</b>	<b>8.3</b>
<b>D. Financing Charges During Construction</b>					
1	Interest	699,000	0	699,000	2.4
2	Commitment	0	0	0	0.0
	<b>Subtotal</b>	<b>699,000</b>	<b>0</b>	<b>699,000</b>	<b>2.4</b>
	<b>TOTAL</b>	<b>13,676,117</b>	<b>17,932,156</b>	<b>31,608,272</b>	<b>110.7</b>

O&M = operation and maintenance, PIO = project implementation office, PMO = project management office.  
Source: ADB estimates.

##### B. Allocation and Withdrawal of Loan and Grants Proceeds

71. The government has requested a loan in various currencies equivalent to SDR 13,758,000 (\$19.15 million) from ADB's Special Funds resources to help finance the project. The loan will have a 32-year term, including a grace period of 8 years, an interest rate of 1% per annum during the grace period and 1.5% per annum thereafter, and such other terms and conditions set forth in the draft financing agreement. The government has requested a grant not exceeding \$5.85 million from

the ADB's Special Funds resources to help finance the project. The JFPR Grant will provide a grant equivalent to \$3 million for output 3, which will be administered by ADB.<sup>10</sup> The government will contribute \$3.6 million by way of taxes (including social tax) and duties foregone.

**Table 6: Allocation and Withdrawal of Loan and Grants Proceeds**

**1. ADB ADF Loan**

Category			ADF Loan Financing
Number	Item	Amount Allocated [SDR]	Percentage and Basis for Withdrawal from the Loan Account
		Category	
1	Civil Works; Vehicles; and Pumps, Motors and Auxiliaries	11,802,000	100% of total expenditure claimed.*
2	Supplies and Others; Office Accommodation; and Office Equipment	319,000	100% of total expenditure claimed.
3	Interest During Construction	502,000	100% of amount due
4	Unallocated	1,135,000	
	<b>Total</b>	<b>13,758,000</b>	

\* Exclusive of taxes and duties imposed within the territory of the Beneficiary.

**2. ADB ADF Grant**

Category			ADF Grant Financing
Number	Item	Amount Allocated [\$]	Percentage and Basis for Withdrawal from the Grant Account
		Category	
1	Machinery; Survey, Study and Design; PMO and PIO salaries; and Consulting Services	5,079,145	100% of total expenditure claimed.*
2	Training and Workshops; and Office/Vehicle Operation and Maintenance	234,360	100% of total expenditure claimed.
3	Unallocated	536,495	
	<b>Total</b>	<b>5,850,000</b>	

\* Exclusive of taxes and duties imposed within the territory of the Beneficiary.

**3. JFPR Grant**

Category			JFPR Grant Financing
Number	Item	Amount Allocated [\$]	Percentage and Basis for Withdrawal from the Grant Account
		Category	
1	Civil Works; Machinery; Survey, Study and Design; and Consulting Services	2,016,878	100% of total expenditure claimed.*
2	Supplies and Others; and Training and Workshops	733,000	100% of total expenditure claimed.
3	Unallocated	250,122	
	<b>Total</b>	<b>3,000,000</b>	

\* Exclusive of taxes and duties imposed within the territory of the Beneficiary.

Source: ADB estimates.

<sup>10</sup> In addition, the JFPR TA will provide a TA grant equivalent to \$2 million for Output 1, which will be administered by ADB.

## C. Detailed Cost Estimate by Financier

**Table 7: Detailed Cost Estimate by Financier (Consolidated All Financiers)**  
(\$ million)

Item		ADB ADF Loan	ADB ADF Grant	JFPR Grant	Government	Total Costs
		Amount	Amount	Amount	Amount	
A. Investment Cost						
1	Civil Works	12,240,489	0	385,978	1,893,970	14,520,437
2	Mechanical and Equipment	4,280,377	2,311,217	1,155,000	1,049,639	8,796,234
	a Vehicles	256,957	0	0	38,543	295,500
	b Machinery	0	2,311,217	500,000	421,683	3,232,900
	c Pumps, Motors and Auxiliaries	3,929,421	0	0	589,413	4,518,834
	d Supplies, Others	94,000	0	655,000	0	749,000
3	Survey, Study and Design	0	308,261	152,000	69,039	529,300
4	Training and Workshops	0	31,902	78,000	0	109,902
5	Consulting Services	0	1,661,276	978,900	396,026	3,036,203
	a Project Management	0	1,579,972	0	236,996	1,816,968
	b Capacity Developemnt	0	81,304	978,900	159,031	1,219,235
	<b>Subtotal</b>	<b>16,520,866</b>	<b>4,312,657</b>	<b>2,749,878</b>	<b>3,408,675</b>	<b>26,992,076</b>
B. Recurrent Costs						
1	PMO and PIO Salaries	0	798,390	0	199,598	997,988
2	Office Accommodation	274,000	0	0	0	274,000
3	O&M Equipment	76,041	0	0	0	76,041
4	Office/Vehicle O&M	0	202,458	0	0	202,458
	<b>Subtotal</b>	<b>350,041</b>	<b>1,000,848</b>	<b>0</b>	<b>199,598</b>	<b>1,550,486</b>
	<b>Total Base Cost</b>	<b>16,870,907</b>	<b>5,313,504</b>	<b>2,749,878</b>	<b>3,608,272</b>	<b>28,542,562</b>
C. Contingencies						
1	Physical	804,938	278,178	126,867	0	1,209,983
2	Price	775,155	258,318	123,255	0	1,156,728
	<b>Subtotal</b>	<b>1,580,093</b>	<b>536,496</b>	<b>250,122</b>	<b>0</b>	<b>2,366,711</b>
D. Financing Charges During Construction						
1	Interest	699,000	0	0	0	699,000
2	Commitment	0	0	0	0	0
	<b>Subtotal</b>	<b>699,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>699,000</b>
	<b>TOTAL</b>	<b>19,150,000</b>	<b>5,850,000</b>	<b>3,000,000</b>	<b>3,608,272</b>	<b>31,608,272</b>

Source: ADB estimates.

**Table 8: Detailed Cost Estimate by Financier (ADF Loan, ADF Grant, and Government)**  
(\$ million)

Item	ADB ADF Loan		ADB ADF Grant		Government		Total Costs
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	
<b>A. Investment Cost</b>							
1 Civil Works	12,240,489	87.0	0	0.0	1,836,073	13.0	14,076,562
2 Mechanical and Equipment	4,280,377	56.6	2,311,217	30.5	974,639	12.9	7,566,234
a Vehicles	256,957	87.0	0	0.0	38,543	13.0	295,500
b Machinery	0	0.0	2,311,217	87.0	346,683	13.0	2,657,900
c Pumps, Motors and Auxiliaries	3,929,421	51.9	0	0.0	589,413	13.0	4,518,834
d Supplies, Others	94,000	1.2	0	0.0	0	0.0	94,000
3 Survey, Study and Design	0	0.0	308,261	87.0	46,239	13.0	354,500
4 Training and Workshops	0	0.0	31,902	100.0	0	0.0	31,902
5 Consulting Services	0	0.0	1,661,276	87.0	249,191	13.0	1,910,468
a Project Management	0	0.0	1,579,972	87.0	236,996	13.0	1,816,968
b Capacity Developemnt	0	0.0	81,304	87.0	12,196	13.0	93,500
<b>Subtotal</b>	<b>16,520,866</b>	<b>69.0</b>	<b>4,312,657</b>	<b>18.0</b>	<b>3,106,143</b>	<b>13.0</b>	<b>23,939,666</b>
<b>B. Recurrent Costs</b>							
1 PMO and PIO Salaries	0	0.0	798,390	80.0	199,598	20.0	997,988
2 Office Accommodation	274,000	100.0	0	0.0	0	0.0	274,000
3 O&M Equipment	76,041	100.0	0	0.0	0	0.0	76,041
4 Office/Vehicle O&M	0	0.0	202,458	100.0	0	0.0	202,458
<b>Subtotal</b>	<b>350,041</b>	<b>22.6</b>	<b>1,000,848</b>	<b>64.6</b>	<b>199,598</b>	<b>12.9</b>	<b>1,550,486</b>
<b>Total Base Cost</b>	<b>16,870,907</b>	<b>66.2</b>	<b>5,313,504</b>	<b>20.8</b>	<b>3,305,741</b>	<b>13.0</b>	<b>25,490,152</b>
<b>C. Contingencies</b>							
1 Physical	804,938	74.3	278,178	25.7	0	0.0	1,083,116
2 Price	775,155	75.0	258,318	25.0	0	0.0	1,033,473
<b>Subtotal</b>	<b>1,580,093</b>	<b>74.7</b>	<b>536,496</b>	<b>25.3</b>	<b>0</b>	<b>0.0</b>	<b>2,116,589</b>
<b>D. Financing Charges During Construction</b>							
1 Interest	699,000	100.0	0	0.0	0	0.0	699,000
2 Commitment	0	0.0	0	0.0	0	0.0	0
<b>Subtotal</b>	<b>699,000</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>699,000</b>
<b>TOTAL</b>	<b>19,150,000</b>	<b>67.7</b>	<b>5,850,000</b>	<b>20.7</b>	<b>3,305,741</b>	<b>11.7</b>	<b>28,305,741</b>

Note: The estimated Government's financing includes taxes and duties by way of exemptions and social taxes as part of cash contributions.

Source: ADB estimates.

**Table 9: Detailed Cost Estimates by Financier (JFPR Grant and Government)**  
(\$ million)

Item	JFPR Grant		Government		Total Costs
	Amount	% of Cost Category	Amount	% of Cost Category	
<b>A. Investment Cost</b>					
1 Civil Works	385,978	87.0	57,897	13.0	443,875
2 Mechanical and Equipment	1,155,000	93.9	75,000	6.1	1,230,000
a Vehicles	0	0.0	0	0.0	0
b Machinery	500,000	87.0	75,000	13.0	575,000
c Pumps, Motors and Auxiliaries	0	0.0	0	0.0	0
d Supplies, Others	655,000	100.0	0	0.0	655,000
3 Survey, Study and Design	152,000	87.0	22,800	13.0	174,800
4 Training and Workshops	78,000	100.0	0	0.0	78,000
5 Consulting Services	978,900	87.0	146,835	13.0	1,125,735
a Project Management	0	0.0	0	0.0	0
b Capacity Development	978,900	87.0	146,835	13.0	1,125,735
<b>Subtotal</b>	<b>2,749,878</b>	<b>90.1</b>	<b>302,532</b>	<b>9.9</b>	<b>3,052,410</b>
<b>B. Recurrent Costs</b>					
1 PMO and PIO Salaries	0	0.0	0	0.0	0
2 Office Accommodation	0	0.0	0	0.0	0
3 O&M Equipment	0	0.0	0	0.0	0
4 Office/Vehicle O&M	0	0.0	0	0.0	0
<b>Subtotal</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>
<b>Total Base Cost</b>	<b>2,749,878</b>	<b>90.1</b>	<b>302,532</b>	<b>9.9</b>	<b>3,052,410</b>
<b>C. Contingencies</b>					
1 Physical	126,867	100.0	0	0.0	126,867
2 Price	123,255	100.0	0	0.0	123,255
<b>Subtotal</b>	<b>250,122</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>250,122</b>
<b>D. Financing Charges During Construction</b>					
1 Interest	0	0.0	0	0.0	0
2 Commitment	0	0.0	0	0.0	0
<b>Subtotal</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>
<b>TOTAL</b>	<b>3,000,000</b>	<b>90.8</b>	<b>302,532</b>	<b>9.2</b>	<b>3,302,532</b>

Source: ADB estimates.



## D. Detailed Cost Estimate by Outputs/Components

**Table 10: Project Cost Summary by Outputs/Components**  
(\$ million)

Item		Total Costs	Output 2		Output 3	
			Amount	% of Cost Category	Amount	% of Cost Category
<b>A. Investment Cost</b>						
1	Civil Works	14,520,437	14,076,562	96.9	443,875	3.1
2	Mechanical and Equipment					
	a Vehicles	295,500	295,500	100.0	0	0.0
	b Machinery	3,232,900	2,657,900	82.2	575,000	17.8
	c Pumps, Motors and Auxiliaries	4,518,834	4,518,834	100.0	0	0.0
	d Supplies, Others	749,000	94,000	12.6	655,000	87.4
3	Survey, Study and Design	529,300	354,500	67.0	174,800	33.0
4	Training and Workshops	109,902	31,902	29.0	78,000	71.0
5	Consulting Services		1,910,468		1,125,735	
	a Project Management	1,816,968	1,816,968	100.0	0	0.0
	b Capacity Developemnt	1,219,235	93,500	7.7	1,125,735	92.3
	<b>Subtotal</b>	<b>26,992,076</b>	<b>23,939,666</b>	<b>88.7</b>	<b>3,052,410</b>	<b>11.3</b>
<b>B. Recurrent Costs</b>						
1	PMO and PIO Salaries	997,988	997,988	100.0	0	0.0
2	Office Accommodation	274,000	274,000	100.0	0	0.0
3	O&M Equipment	76,041	76,041	100.0	0	0.0
4	Office/Vehicle O&M	202,458	202,458	100.0	0	0.0
	<b>Subtotal</b>	<b>1,550,486</b>	<b>1,550,486</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>
	<b>Total Base Cost</b>	<b>28,542,562</b>	<b>25,490,152</b>	<b>89.3</b>	<b>3,052,410</b>	<b>10.7</b>
<b>C. Contingencies</b>						
1	Physical	1,209,983	1,083,116	89.5	126,867	10.5
2	Price	1,156,728	1,033,473	89.3	123,255	10.7
	<b>Subtotal</b>	<b>2,366,711</b>	<b>2,116,589</b>	<b>89.4</b>	<b>250,122</b>	<b>10.6</b>
<b>D. Financing Charges During Construction</b>						
1	Interest	699,000	699,000	100.0	0	0.0
2	Commitment	0	0	0.0	0	0.0
	<b>Subtotal</b>	<b>699,000</b>	<b>699,000</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>
	<b>TOTAL</b>	<b>31,608,272</b>	<b>28,305,741</b>	<b>89.6</b>	<b>3,302,532</b>	<b>10.4</b>

Notes: The total cost includes taxes and duties including social tax of \$3.6 million to be financed from the government resources. All prices are year-end-2015 prices. Physical contingencies computed at 5% for all expenditure accounts given the detailed technical due diligence. Price contingencies computed at 1.1% on foreign exchange costs and 5% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate. Financing charges include interest during construction for ADB loan which was computed at the rate of 1% per annum. Source: ADB estimates.

## E. Detailed Cost Estimates by Year

72. Accumulative by year project expenditures is given in Table 11.

**Table 11: Project Components by Year, Including Contingencies**  
(\$ million)

Item	Total Costs	Year 1	Year 2	Year 3	Year 4	Year 5
<b>A. Investment Cost</b>						
1 Civil Works	14,520,437	363,011	3,741,433	5,048,272	3,823,715	1,544,006
2 Mechanical and Equipment						
a Vehicles	295,500	7,388	76,141	102,736	77,815	31,422
b Machinery	3,232,900	80,823	833,011	1,123,972	851,330	343,765
c Pumps, Motors and Auxiliaries	4,518,834	112,971	1,164,353	1,571,048	1,189,960	480,503
d Supplies, Others	749,000	18,725	192,992	260,402	197,237	79,644
3 Survey, Study and Design	529,300	13,233	136,383	184,020	139,382	56,282
4 Training and Workshops	109,902	2,748	28,318	38,209	28,941	11,686
5 Consulting Services						
a Project Management	1,816,968	45,424	468,172	631,699	478,468	193,204
b Capacity Development	1,219,235	30,481	314,156	423,887	321,065	129,645
<b>Subtotal</b>	<b>26,992,076</b>	<b>674,802</b>	<b>6,954,958</b>	<b>9,384,245</b>	<b>7,107,913</b>	<b>2,870,157</b>
<b>B. Recurrent Costs</b>						
1 PMO and PIO Salaries	997,988	24,950	257,148	346,967	262,803	106,119
2 Office Accommodation	274,000	6,850	70,601	95,261	72,153	29,135
4 O&M Equipment	76,041	1,901	19,593	26,437	20,024	8,086
5 Office/Vehicle O&M	202,458	5,061	52,167	70,388	53,314	21,528
<b>Subtotal</b>	<b>1,550,486</b>	<b>38,762</b>	<b>399,509</b>	<b>539,052</b>	<b>408,295</b>	<b>164,868</b>
<b>Total Base Cost</b>	<b>28,542,562</b>	<b>713,564</b>	<b>7,354,467</b>	<b>9,923,297</b>	<b>7,516,208</b>	<b>3,035,026</b>
<b>C. Contingencies</b>						
1 Physical	1,209,983	30,250	311,772	420,671	318,629	128,662
2 Price	1,156,728	28,918	298,050	402,156	304,605	122,999
<b>Subtotal</b>	<b>2,366,711</b>	<b>59,168</b>	<b>609,823</b>	<b>822,826</b>	<b>623,234</b>	<b>251,660</b>
<b>D. Financing Charges During Construction</b>						
1 Interest	699,000	62,910	111,840	146,790	174,750	202,710
2 Commitment						
<b>Subtotal</b>	<b>699,000</b>	<b>62,910</b>	<b>111,840</b>	<b>146,790</b>	<b>174,750</b>	<b>202,710</b>
<b>TOTAL</b>	<b>31,608,272</b>	<b>835,642</b>	<b>8,076,129</b>	<b>10,892,914</b>	<b>8,314,192</b>	<b>3,489,396</b>
<b>% Total Project Costs</b>	<b>100.0%</b>	<b>2.6%</b>	<b>25.6%</b>	<b>34.5%</b>	<b>26.3%</b>	<b>11.0%</b>

Source: ADB estimates.

## F. Contract Awards and Disbursement Projection

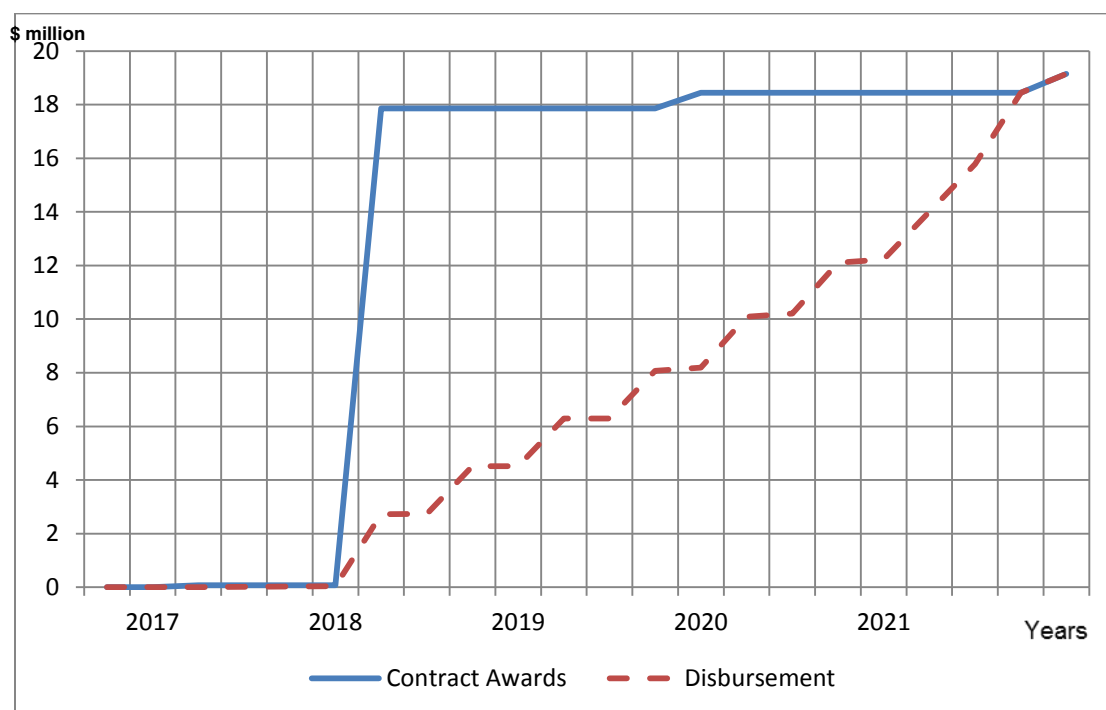
73. Projections of contract awards and disbursements will be confirmed with the executing agencies (EAs) during ADB inception mission and the PAM will be updated accordingly. The forecasted contract award and disbursement profile at project design stage is shown in Table 12.

**Table 12: Asian Development Fund (Loan)**  
(\$ million equivalent)

Year	Projections for Contract Award					Projections for Disbursement				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.07	0.00	0.00	0.00	0.07	0.01	0.01	0.01	0.01	0.04
2018	17.79	0.00	0.00	0.00	17.79	2.68	0.01	1.79	0.00	4.48
2019	0.00	0.00	0.00	0.59	0.59	1.78	0.00	1.78	0.12	3.67
2020	0.00	0.00	0.00	0.00	0.00	1.90	0.12	1.90	0.12	4.03
2021	0.70	0.00	0.00	0.00	0.70	1.78	1.78	2.67	0.70	6.93
Total					19.15					19.15

Source: ADB estimates.

**Figure 4: Contract and Disbursement S-curve**  
(\$ million)



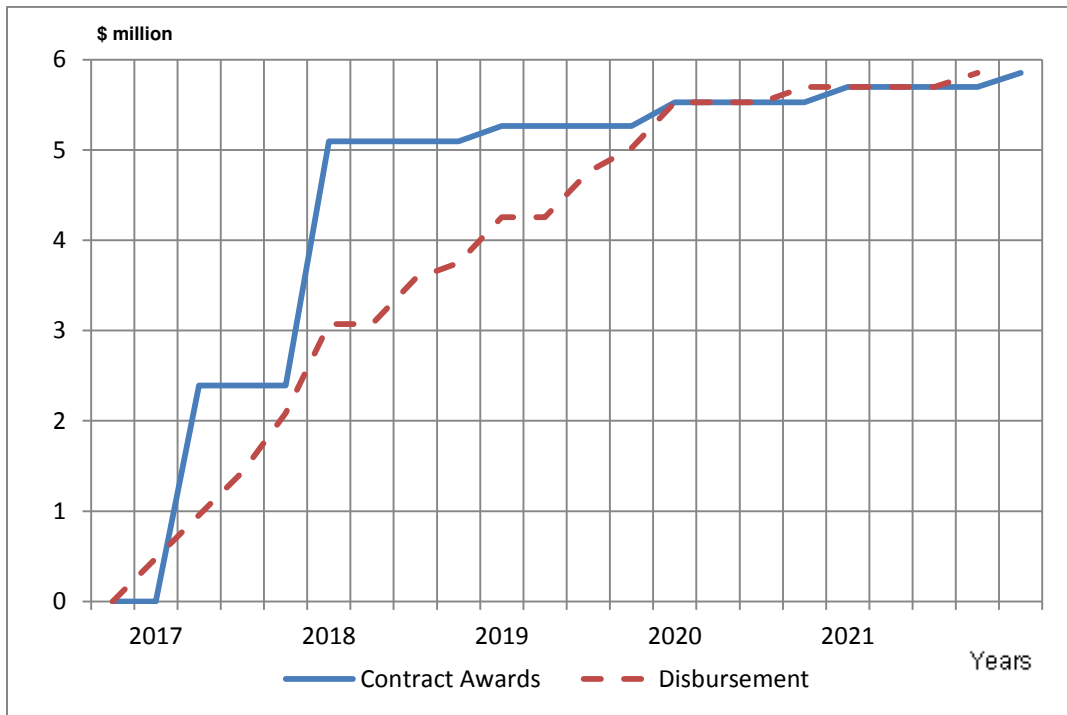
Source: ADB estimates.

**Table 13: Asian Development Fund (Grant)**  
(\$ million)

Year	Projections for Contract Award					Projections for Disbursement				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	2.39	0.00	0.00	2.70	5.09	0.48	0.48	0.48	0.65	2.09
2018	0.00	0.00	0.00	0.17	0.17	0.98	0.00	0.51	0.17	1.66
2019	0.00	0.00	0.00	0.26	0.26	0.51	0.00	0.51	0.26	1.27
2020	0.00	0.00	0.00	0.17	0.17	0.51	0.00	0.00	0.17	0.68
2021	0.00	0.00	0.00	0.16	0.16	0.00	0.00	0.00	0.16	0.16
<b>Total</b>					<b>5.85</b>					<b>5.85</b>

Source: ADB estimates.

**Figure 5: Contract and Disbursement S-curve**  
(\$ million)



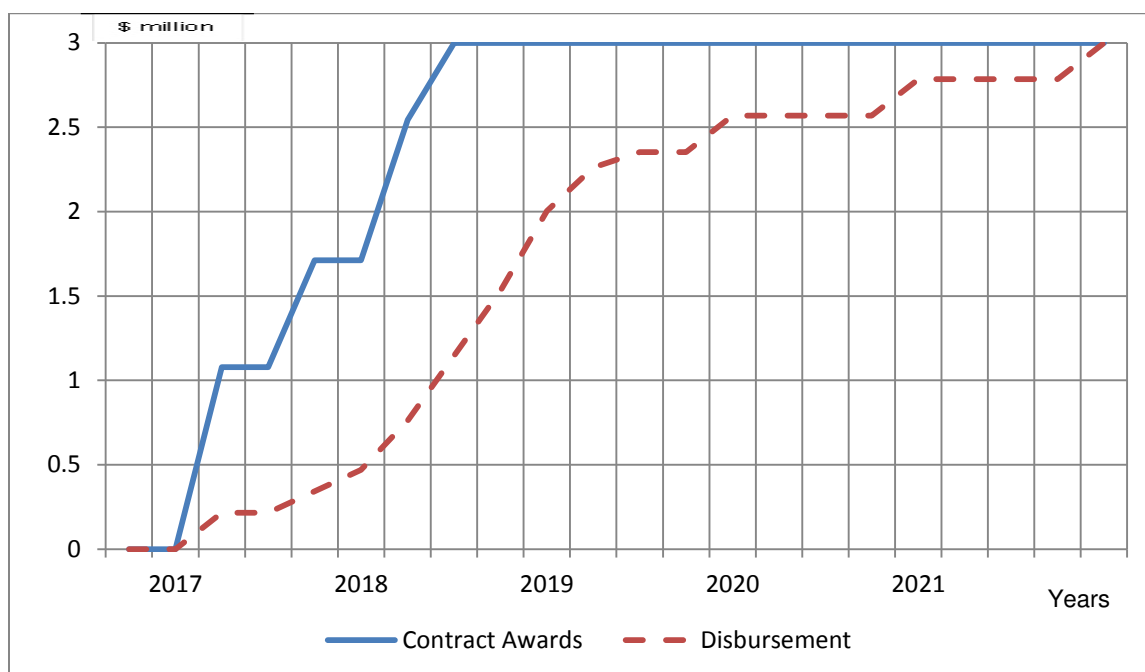
Source: ADB estimates.

**Table 14: JFPR Grant**  
(\$ million)

Year	Projections for Contract Award					Projections for Disbursement				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2016				0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	1.08	0.00	0.63	0.00	1.71	0.22	0.00	0.13	0.13	0.47
2018	0.83	0.46	0.00	0.00	1.29	0.29	0.38	0.38	0.47	1.54
2019	0.00	0.00	0.00	0.00	0.00	0.26	0.09	0.00	0.22	0.56
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22
Total					3.00					3.00

Source: ADB estimates.

**Figure 6: Contract and Disbursement S-curve**  
(\$ million)

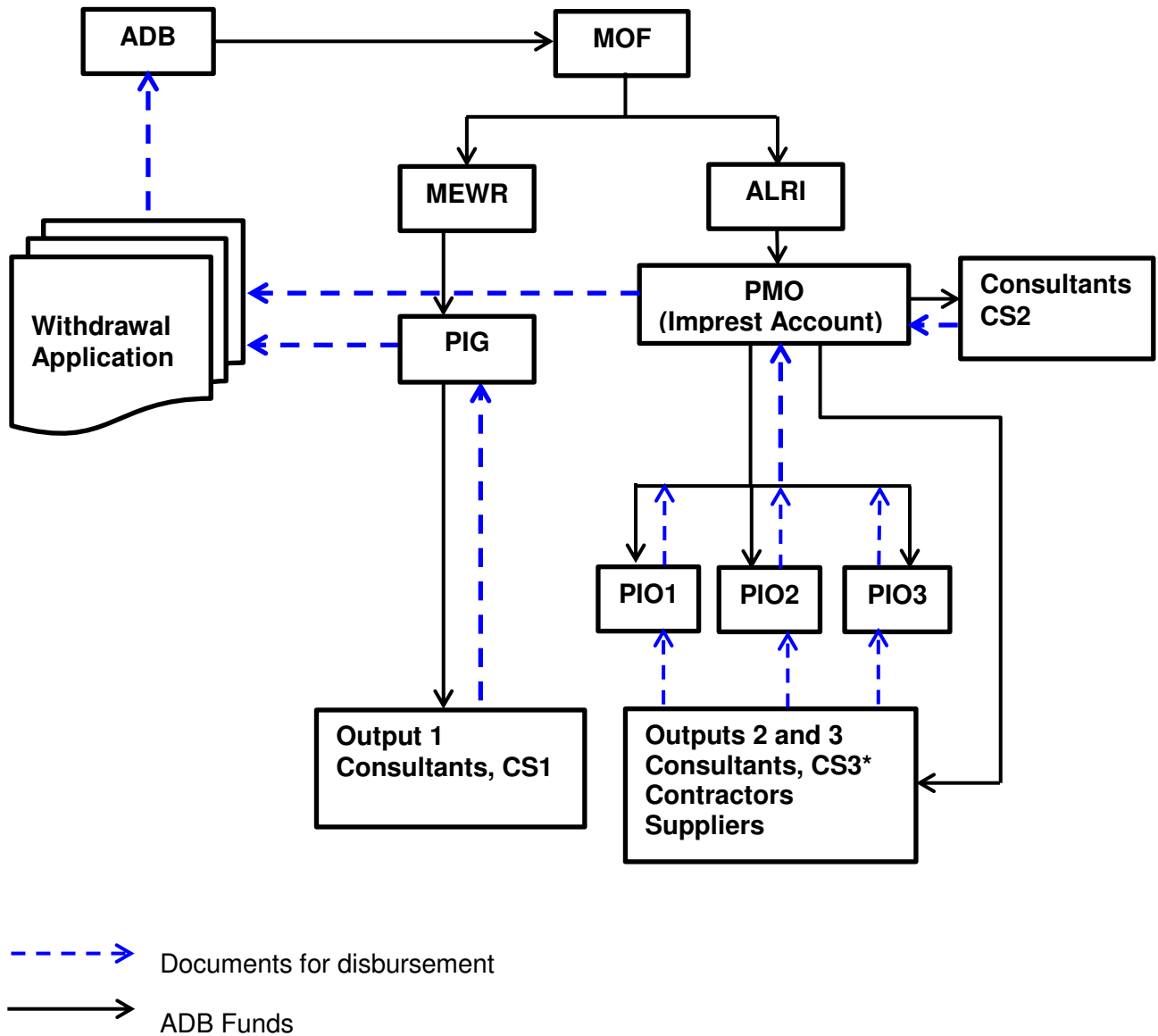


Source: ADB estimates.

**G. Fund Flow Diagram**

74. The fund flow arrangement is depicted in Figure 8.

**Figure 7: Proposed Funds Flow Diagram**



ADB = Asian Development Bank; MOF = Ministry of Finance; ALRI = Agency for Land Reclamation and Irrigation; CS1 = Consulting Service package 1; CS2 = Consulting Service package 2; CS3 = Consulting Service package 3 (\* Output 3 only); MEWR = Ministry of Energy and Water Resources; PIG = Project Implementation Group; PIOs = Project Implementation Offices; PMO = Project Management Office.  
 Source: Asian Development Bank.

## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

75. The country public financial management (PFM) system was assessed by reviewing a public expenditure and financial accountability (PEFA) assessment completed in November 2012. Financial Management Assessments (FMA) have been performed on EAs with reference to the Guidelines for the Financial Management and Analysis of Projects,<sup>11</sup> and Financial Management Technical Guidance Note.<sup>12</sup> The assessments focus on accountability and transparency, and covers (i) internal controls, (ii) funds flow arrangements, (iii) accounting and financial reporting, and (iv) independent audit.

76. **PFM system Assessment.** The latest PEFA report indicates that overall, less than one-third indicators for PFM system of Tajikistan scores well. Relatively strong performance was found for budget credibility, and for comprehensiveness and transparency, but weak in most of other dimensions. Areas which were found to be weaker include overall internal control, accounting, recording and reporting, and external scrutiny and audit.

77. **Implementation Arrangement.** ALRI will be the EA to implement outputs 2 and 3 of the Project. MEWR will be the EA responsible for implementing output 1. The existing PMO under ALRI, established for ADB Grant 0352 Building Climate Resilience in the Pyanj River Basin Project, will be responsible for implementing the proposed project's outputs 2 and 3. MEWR will implement output 1 through its PIG.

78. At the field level, three Project Implementation Offices (PIOs) will be established at Hamadoni, Farkhor, and Vose, to implement Outputs 2 and 3. The PIOs will be led by PIO Heads, who report to PMO Project Director. The PMO and PIOs will be supported by a team of international and national consultants in project preparation and implementation, including capacity development of various agencies.

79. **Experiences with Donors.** The ALRI and the PMO are experienced in implementing projects financed by international donors, including World Bank, ADB, Global Agriculture and Food Security Program (GAFSP), Kuwait Development fund (KDF), and Islamic Development Bank (IDB).

80. **Staffing.** The PMO currently has 2 accountants working for ADB Grant 0352-TAJ: Building Climate Resilience in the Pyanj River Basin Project. The Government and ADB Fact-Finding Mission agreed to strengthen PMO's financial management by adding two additional positions in the PMO, including a chief accountant and a financial management specialist (FMS), to cope with the additional workload, to ensure that a strong and capable workforce remains in place. The accountants and FMS will be trained with ADB policies and procedures on disbursement, financial reporting and auditing.

81. **Planning and Budgeting.** The PMO will prepare the project's annual budgets including required social tax for PMO and PIO staff for ALRI's approval. Once approved, it will be submitted to MOF for final approval. During project implementation the actual expenditures are compared with planned budgeted expenditures on a monthly and quarterly basis, and reports on an analysis of variations is prepared. Significant variations in budgeted expenditure need to be approved by the Project Director prior to actual expenditure.

<sup>11</sup> ADB. 2005. *Guidelines for the Financial Management and Analysis of Project*. Manila.

<sup>12</sup> ADB. 2015. *Financial Management Technical Guidance Note*. Manila.

82. **Safeguard Over Assets.** ALRI and the PMOs have procedures that assure sufficient controls are undertaken over project assets, and safeguards are in place to protect assets from fraud, waste, and abuse. An annual physical inventory of all stocks and materials is carried out, and the fixed assets inventory is required to be updated every two years.

83. **Internal Audit.** ALRI does not have a department or unit for conducting internal audit of either the ALRI or project operations, a deficiency in the internal control environment of the agency's financial management system. Although the PMOs of ongoing projects executed under ALRI prepare monthly, quarterly, and annual financial statements to the financial and economic department of the ministry, these are not intended for internal audit purposes.

84. **Project Financial Reporting and External Audit.** The government engaged one audit firm each year to audit several ADB financed projects for fiscal year 2011 (FY2011), FY2012, FY2013, and FY2014. Quality of project audit submissions, including audited annual project financial statements (APFS), audit report (AR), and management letter (ML), is one of the best among developing member countries in Central and West Asia. However, the audit firm pointed out that EAs and IAs maintain disbursement records without preparing APFS, and the audit firm had to help prepare APFS. This raises concerns on (i) audit firm's independence in performing the audit; and (ii) capacity of project accountants to prepare APFS. ADB Financial Audit Consultation Mission (June 2014) recommended that accounting software be installed in all PMOs for ADB financed projects. The PMO for this project has 1C accounting software installed and used for ADB Grant 0352: Building Climate Resilience in the Pyanj River Basin Project. The PMO is experienced in implementing WB and ADB financed projects. Its staff members are familiar with donors' requirements, including financial reporting and auditing.

85. **Risk Assessment and Risk Mitigation Measures.** The assessments and proposed measures are shown in Table 15.

**Table 15: Financial Management Risk**

<b>Risk Type</b>	<b>Risk Description</b>	<b>Risk Rating<sup>a</sup></b>	<b>Risk Mitigation Measures</b>
<b>Inherent Risk</b>			
1. Internal controls	Internal control is less effective for payroll controls and non-salary expenditure.  Procurement related internal control is strong in legal and regulatory framework, but lack of information and the basis on contract awards, weak in using competitive procurement methods, and an independent administrative procurement complaint system.  Internal audit is less effective without meeting recognized professional standards; recommended measures do not address the underlying cause of the problems.	S	Capacity building and information system development are essential to improve internal control.
2. Accounting and financial reporting	Accounts reconciliation is strong in all dimensions. Information on resources received by service delivery units, and quality and timeliness of in-year budget reports, are weak.	S	The existing PMO will implement the Project applying international standards on accounting, reporting, and auditing  Training on financial reporting and auditing should be provided.



Risk Type	Risk Description	Risk Rating <sup>a</sup>	Risk Mitigation Measures
	Consolidated government statements are prepared, but not fully compliant with recognized international accounting standards.		
3. External audit	The Law on the Supreme Audit Institution (SAI) was adopted in 2011, but no SAI has yet been established. External audit is not yet in place.	H	The Project will be audited annually by independent private auditors in accordance with international standards on auditing.
Overall inherent risks		S	
Control risks			
1. Staffing	Lack of capacity for the PMO to manage ADB funds.	M	Additional accounting and financial management staff will be recruited to strengthen PMO capacity. PIG will also assign an accountant for the Project. Training and consultant support should be provided.
2. Funds flow	The fund flow risks concerns the delays of payments to contractors, which will delay project implementation activities.	M	The majority funds will be through the PMO to avoid delays.  PIG manages CS1 for Output 1.
3. Accounting and financial reporting	Low risk for PMO, as staff are experienced following cash basis IPSAS with 1C accounting software.  Moderate risk for MEWR to prepare Project FS due to low capacity.	M	Majority funds would be through PMO.  PIG manages CS1 for Output 1 only using direct payment procedure.
4. Internal Controls and internal audit	Internal control environment in PMO and MEWR needs strengthening.	S	Establishing a well-staffed and resourced internal control system is recommended.
5. External Audit	There would be low risk in conducting audit by private audit firm(s) on project FS prepared by PMO and PIG.	L	Majority funds will pass through PMO.  Project FS prepared by PMO and PIG will be audited by independent private audit firms.
6. Rotation of auditors	The same audit firm to audit an organization for a long period of time has risks due to complacency and familiarity with Management and staff.	L	It is proposed that auditors be rotated every three to five years in line with international best practice.
<b>Overall control risks</b>		<b>M</b>	
<b>Overall risks</b>		<b>S</b>	

ADB = Asian Development Bank; CS1 = Consulting Service package 1; FS = financial statements; IPSAS = International Public Sector Accounting Standards; MEWR = Ministry of Energy and Water Resources; PIG = Project Implementation Group; PMO = Project Management Office.

<sup>a</sup> H = High, S = Substantial, M = Moderate, L = Low.

Source: Asian Development Bank.

## B. Disbursement

86. The loan, grants, and delegated TA grant proceeds will be disbursed in accordance with ADB's Loan Disbursement Handbook (2015, as amended from time to time),<sup>13</sup> and detailed arrangements agreed upon between the government and ADB.

<sup>13</sup> Available at: <http://www.adb.org/documents/loan-disbursement-handbook>.

87. **Direct payment.** The procedures will generally be used for civil works contracts and consulting services.<sup>14</sup> All disbursements for output 1 will be through direct payment.

88. **Imprest account.** The ALRI's PMO shall establish a separate imprest account in US Dollars for each fund source (ADF Loan, ADF Grant, and JFPR Grant) for the project at a bank acceptable to ADB. (National Bank of Tajikistan). The request for initial advance to the imprest account should be accompanied by an Estimate of Expenditure Sheet<sup>15</sup> setting out the estimated expenditures for the first six (6) months of project implementation, and evidence that the imprest account has been duly opened. For every liquidation and replenishment request of the imprest account, the borrower will furnish to ADB (i) Statement of Account (Bank Statement) where the imprest account is maintained, and (ii) the Imprest Account Reconciliation Statement (IARS) reconciling the above mentioned bank statement against PMO's records.<sup>16</sup>

89. The total outstanding advances to the imprest account will not at any time exceed the estimated ADB financed expenditures to be paid from the imprest account for the next 6 months.<sup>17</sup>

90. The statement of expenditure (SOE) procedure, as described in the Loan Disbursement Handbook, will be used to reimburse eligible expenditure and to liquidate and replenish the imprest account for individual payments of up to \$100,000 equivalent. SOE records should be maintained and made readily available for review by ADB's disbursement and review mission or upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.<sup>18</sup> Individual payments in excess of the SOE ceiling should be accompanied by full supporting documents when submitting the withdrawal application to ADB.

91. Before submitting the first withdrawal application, the Government must submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is set in accordance with the Loan Disbursement Handbook (i.e., \$100,000 equivalent). Individual payment below this amount should be paid by the PMO and subsequently claimed from ADB (i) through reimbursement; or (ii) from the imprest accounts, unless otherwise accepted by ADB.

### **C. Project Financial Reporting, Auditing, and Public Disclosure**

92. The PMO and PIG shall (i) maintain separate accounts and records for the Project by funding source for all expenditures incurred on the project; (ii) prepare annual financial statements for the Project in accordance with cash-based International Public Sector Accounting Standard; (iii) have such project financial statements audited annually by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB, in accordance with international standards for auditing or the national equivalent acceptable to ADB; (iv) as part of each such audit, have the auditors prepare a report which includes the auditors' opinions on the financial

<sup>14</sup> Direct payments under Loan/Grant disbursement should be used for payments above the minimum WA amount. Payments below the amount should be paid through reimbursement or imprest fund procedures. See paragraph 943.

<sup>15</sup> Available in Appendix 10B of the *Loan Disbursement Handbook*.

<sup>16</sup> Follow the format provided in Appendix 10C of the *Loan Disbursement Handbook*.

<sup>17</sup> The bank charges on the imprest account will be financed from the proceeds of the loan.

<sup>18</sup> Checklist for SOE procedures and formats are available at: <http://www.adb.org/documents/loan-disbursement-handbook>.

statements and use of the Grant proceed<sup>19</sup> and a management letter which sets out the deficiencies in the internal control of the Project that were identified in the course of the audit, if any; and (v) furnish to ADB, no later than 6 months after the end of each related fiscal year, copies of such audited project financial statements, audit report and management letter, all in the English language, and such other information concerning these documents and the audit thereof as ADB shall from time to time reasonably request.

93. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

94. The Government, EAs, PMO, and PIG have been made aware of ADB's approach to delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.<sup>20</sup> ADB reserves the right to require a change in the auditor, or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

95. ADB shall disclose the annual audited financial statements for the project and the opinion of the auditors on the financial statements no later than 14 calendar days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter will not be disclosed.

## VI. PROCUREMENT AND CONSULTING SERVICES

### A. Advance Contracting and Retroacting Financing

96. All advance contracting will be undertaken in conformity with ADB's Procurement Guidelines (2015, as amended from time to time) and the Guidelines on the Use of Consultants by Asian Development Bank and its Borrowers (2013, as amended from time to time). The issuance of invitations to bid under advance contracting will be subject to ADB approval. The EAs have been advised that approval of advance contracting does not commit ADB to finance the project.

97. Advance contracting will be used for recruitment of consulting services.

98. There is no retroactive financing envisaged in this project.

---

<sup>19</sup> Auditor's opinions shall cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; and (ii) whether loan and grant proceeds were used only for the intended purposes of the project in accordance with ADB's Loan Disbursement Handbook and the loan/grant and project agreements.

<sup>20</sup> ADB approach and procedures regarding delayed submission of audited project financial statements:

- (i) When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (a) the audit documents are overdue; and (b) if they are not received within the next six months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
- (ii) When audited project financial statements have not been received 6 months after the due date, ADB will (a) inform the executing agency of ADB's actions to withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters; and (b) advise that the loan may be suspended if the audit documents are not received within the next 6 months; and
- (iii) When audited project financial statements have not been received 12 months after the due date, ADB may suspend the loan.

## B. Procurement of Goods, Works and Consulting Services

99. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines. Key features of the procurement of civil works and goods are summarized in the following paragraphs. The procurement plan indicates review procedures, goods, works and consulting service contract packages and national competitive bidding (NCB) guidelines. International competitive bidding (ICB) procedures will be used for civil works contracts estimated to cost \$1 million or more while NCB procedures for contract costing below \$1 million. Similarly, ICB procedure will also be used for goods contracts estimated to cost \$1 million or more while NCB procedure for contracts costing below \$1 million. Shopping procedures will be used for contracts for procurement of small works and equipment worth less than \$100,000.

## C. Procurement Plan

100. Various packages of the procurement plan are presented in the following sections. The basic data of the project is given in Table 16.

**Table 16: Basic Data**

<b>Project Name:</b> Water Resources Management in Pyanj River Basin	
<b>Project Number:</b> 47181-013-TAJ	<b>Approval Number:</b>
<b>Country:</b> Tajikistan	<b>Executing Agency:</b> Agency of Land Reclamation and Irrigation (ALRI) and Ministry of Energy and Water Resourced (MEWR)
<b>Project Procurement Classification:</b> B	
<b>Procurement Risk:</b> Low	
<b>Project Financing Amount:</b> \$ 31.61 million <b>ADB Financing:</b> \$25 million <b>Cofinancing (JFPR grant and administered by ADB):</b> \$3 million <sup>a</sup> <b>Non-ADB Financing (GOT) :</b> \$3.61 million	<b>Project Financial Closing Date:</b> June 2022
<b>Date of First Procurement Plan:</b> July 2016	<b>Date of this Procurement Plan:</b> Q2 2016

<sup>a</sup> In addition, there is a JFPR TA grant amounting to \$2 million administered by ADB.

Source: ALRI.

### 1. Process Thresholds, Review and 18-Month Procurement Plan

#### a. Project Procurement Thresholds

101. Except as ADB may otherwise agree, the following process thresholds given in Table 17 shall apply to procurement of goods and works.

**Table 17: Thresholds for Procurement of Goods and Works**

Method	Threshold
International Competitive Bidding (ICB) for Works	Over \$1,000,000
International Competitive Bidding for Goods	Over \$1,000,000
National Competitive Bidding (NCB) for Works	Between \$100,000 and \$1,000,000
National Competitive Bidding for Goods	Between \$100,000 and \$1,000,000
Shopping for Works	Below \$100,000
Shopping for Goods	Below \$100,000

Source: ALRI.

#### b. ADB Prior or Post Review

102. Except as ADB may otherwise agree, the following, given in Table 18 prior or post review requirements apply to the various procurement and consultant recruitment methods used for the project.

**Table 18: Review Requirements for Various Procurement and Consultant Recruitment Methods**

Procurement Method	Prior or Post	Comments
<b>Procurement of Goods and Works</b>		
ICB Works	Prior	Prior review applies to the procurement of the first two NCB contracts. If the first two contracts are procured satisfactorily it will be determined by ADB if post-review may be used.
ICB Goods	Prior	
NCB Works	Prior	
NCB Goods		Prior review applies to the procurement of the first two NCB contracts. If the first two contracts are procured satisfactorily it will be determined by ADB if post-review may be used.
Shopping for Works	Post	
Shopping for Goods	Prior	
<b>Recruitment of Consulting Firms</b>		
Quality- and Cost-Based Selection (QCBS)	Prior	Quality and cost based on 90:10 quality–cost weighting. Applied in accordance with <i>Guidelines on the Use of Consultants</i> (March 2013, as amended from time to time)
Other selection methods: Consultants Qualifications (CQS), Least-Cost Selection (LCS), Fixed Budget (FBS), and Single Source (SSS)	Prior	
<b>Recruitment of Individual Consultants</b>		
Individual Consultants	Prior	

Source: ALRI.

### c. 18-Month Procurement Plan

#### 2. Goods and Works Contracts Estimated to Cost More than \$1 Million

103. Table 19 lists the goods and works contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

**Table 19 : Works and Goods to be Procured During First 18 Months**

Package Number <sup>5</sup>	General Description	Estimated Value (\$ million)	Procurement Method	Review [Prior / Post/Post (Sample)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
Pack - 1	Sediment Excluding Basin and Modernization and Rehabilitation of Pumping Units	13.6	ICB	Prior	SS1E	Q2 2017	Post qualification/ Bidding Documents for Large Works

Packs- (2-4)	Modernization and Rehabilitation of Irrigation and Drainage Infrastructure	5.0 (total)	ICB	Prior	SS1E	Q2 2017	Post qualification/ Bidding Documents for Small Works
-----------------	---	-------------	-----	-------	------	---------	--

These costs do not include taxes and duties.

### 3. Consulting Services Contracts Estimated to Cost More Than \$100,000

104. Table 20 lists the consulting services contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

**Table 20 : Consulting Services to be Procured During First 18 Months**

Package Number	General Description	Value (\$ million)	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
Pack – 5	Project Management and Monitoring, Consulting Services for Output 2	1.7	QCBS (90:10)	Prior	Q1 2016	Full	International
Pack – 6	International NGO(s) to help with training and capacity building of WUAs, and farmers (Output 3)	1.0	QCBS (90:10)	Prior	Q1 2016	Full	International

Note: These costs do not include taxes and duties.

### 4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000

105. Table 21 groups smaller-value goods, works and consulting services contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

**Table 21 : Smaller Value Contract to be Awarded During the First 18 Months**

Goods and Works								
Package Number <sup>5</sup>	General Description	Estimated Value (\$ million)	Number of Contracts	Procurement Method	Review [Prior / Post/Post (Sample)]	Bidding Procedure <sup>6</sup>	Advertisement Date (quarter/year)	Comments <sup>7</sup>
	Office Equipment	0.07	2	Shopping	Post	Request for Quotations (RFQ)	Q1 2017	
	Excavator and other Equipment necessary for sand removal from Canal	2.3	1	ICB	Prior	SS1E	Q2 2017	
	Detailed design	0.25	1	TBD	Prior	TBD	Q1 2017	
	Survey and study	0.2	2	TBD	Prior	TBD	Q1 2017	
	Hydrometrical equipment	0.08	1	Shopping	Post	RFQ	Q3 2017	
	Vehicles(for PMO Dushanbe) and PIOs (5Nos)	0.17	3	Shopping	Post	RFQ	Q1 2017	
	Accounting software 1C (Accounting software used by GOT)	0.023	1	Shopping	Post	RFQ	Q1 2017	
	Repair and	0.2	2	NCB	Post	SS1E	Q1 2017	

Renovation of ALRI district offices, and Workshop at Vose for Pump Stations							
Farm Demonstration Equipment	0.27	3	Shopping	Post	RFQ	Q1 2018	
Agriculture Machinery for seed grower	0.57	1	ICB	Prior	SS1E	Q1 2018	
Seed Certification Laboratory	0.09	1	Shopping	Post	RFQ	Q1 2018	
Foundation Seed	0.1	1	Shopping	Post	RFQ	Q1 2018	

Note: In addition, auditing services will be recruited every year. These are base costs and do not include contingencies and taxes and duties.

Source: ALRI.

## VII. SAFEGUARDS

### A. Environmental Safeguard

106. The project is categorized B for environment. ALRI shall ensure that the design, construction, operation and maintenance of project's facilities to be financed under output 2 are carried out in accordance with ADB's Safeguard Policy Statement (SPS, 2009), the applicable laws and regulations in Tajikistan, and the initial environmental examination (IEE) and its environmental management plan (EMP). ALRI shall ensure that potential adverse environmental impacts arising from the project are avoided, minimized, mitigated or compensated by implementing all the mitigation and monitoring measures described in the IEE and EMP. ALRI shall ensure that:

- (i) The EMP to be updated by the contractors, based once the detailed design is available and prior to the implementation of civil works. The contractor prepares and submits for approval to the project implementation consultant and PMO site specific environmental health and safety management plans at least 10 days before taking possession of any work site. No access to the site will be allowed until the site specific environmental health and safety management plans is approved by the PMO prior to commencing any construction works. The site specific environmental health and safety management plans will be tailored to the environmental impacts of the site and the specific project activities as planned by the contractor;
- (ii) The contractor, project implementation consultant, and PMO have sufficient resources to implement, monitor and record the implementation of the site specific environmental health and safety management plans;
- (iii) The contractor is responsible for the day to day implementation of the site specific environmental health and safety management plans with project implementation consultant visiting regularly monitoring to confirm implementation;
- (iv) PMO, with the help of the project implementation consultant, will submit to ADB semi-annual environmental monitoring reports for the project within 1 month of the close of each half of the calendar year during project implementation, and the reports will include a review of the progress on implementation of environmental measures described in the site specific environmental health and safety management plans, monitoring of such measures, problems encountered and remedial measures taken;

- (v) The detailed engineering design and civil works and other contracts for the project incorporate applicable environmental measures identified in the IEE and the site specific environmental health and safety management plans;
- (vi) PMO will establish and implement the Grievance Redress Mechanism, as described in the IEE prior to construction. Environment Field Inspector will be a focal person for grievances in the field. All complaints will be recorded in the complaints register on site and will be addressed through the procedures set up in the Grievance Redress Mechanism; and
- (vii) Should any change in scope take place the ALRI will immediately inform ADB and a due diligence on environment will be carried out by the PMO. Any additional study required will be conducted, and the IEE will be updated by the PMO as required by SPS 2009. If there are any unanticipated environmental impacts, they would be reviewed and a corrective action plan will be prepared by the contractor for implementation under the supervision of PMO with assistance, of project implementation consultant.

## **B. Social Safeguards**

107. The project is classified as category C for involuntary resettlement impacts. The main structure of the sediment excluding basin will be located in the strict controlled border area. Construction works associated with repairs and/or renovation of some existing installations on the irrigation canal and renovation of pumping stations will not be significant and will be limited within the existing facility itself. A due diligence report on resettlement has been prepared and disclosed to ADB website.

108. If any changes or additional land requirements or involuntary resettlement impacts are identified, a resettlement plan will be prepared in accordance with the Safeguard Policy Statement (2009) and the same is approved by ADB before award of related civil work contract and implemented before commencement of civil works contract as applicable.

109. The project is screened as category C project for indigenous peoples planning requirement under SPS 2009 and MEWR, ALRI shall ensure that the project does not have any indigenous peoples' impacts within the meaning of the Safeguard Policy Statement (2009). And if during design review or implementation, any change to the scope, location with prior approval of ADB, causes to have any such impacts, MEWR and ALRI shall take all steps required to ensure that the project complies with the applicable laws and regulations of Tajikistan and the ADB's Safeguard Policy Statement 2009.

## **C. Prohibited Investment Activities**

110. Pursuant to ADB's Safeguard Policy Statement (2009),<sup>21</sup> ADB funds may not be applied to the activities described in the ADB Prohibited Investment Activities List set forth in Appendix 5 of the SPS. EAs will ensure that the project is in compliance with applicable national laws and regulations and will apply the prohibited investment activities list to the project financed by ADB.

---

<sup>21</sup> Available at: <http://www.adb.org/documents/safeguard-policy-statement>.



## VIII. GENDER AND SOCIAL DIMENSIONS

111. Gender actions aimed at addressing the gender issues include (i) Institutionalizing women's participation in RBO and River basin council (RBC) structures, as well as in the PRB Management Plan, (ii) Ensuring that gender-sensitive messages are included in the project's information campaign materials, (iv) Conducting community consultation meetings with 50% women participation, (v) Encouraging the employment of local labor and women, (vi) Installing water points in strategic areas for household use, (vii) Identifying the extent of women's participation in WUA membership, leadership, and secretariat, (viii) Developing and conducting training programs for water users on WUA leadership and management and new agricultural practices, (ix) Organizing demonstration plots and study tours for exchange of knowledge among water users, and (x) Conducting baseline and endline surveys on WUAs. The Gender and Social Development consultant engaged by MEWR will be responsible for implementing all gender actions related to output 1, while the Gender and Social Development Officer engaged by ALRI PMO will be responsible for ensuring implementation of all gender actions in outputs 2 and 3. The international NGO tasked to implement output 3 is expected to have the gender expertise necessary to implement the gender actions in output 3. The project's Gender Action Plan (GAP) is in Table 22. The cost for implementing the GAP is incorporated in the cost allocation for each output.

**Table 22 : Gender Action Plan**

<b>Activity</b>	<b>Performance Targets/ Indicators</b>	<b>Responsibility</b>	<b>Time frame</b>
<b>Output 1. WRM capacity improved in PRB</b>			
1.1 Conduct a gender and social analysis of the proposed RBO and RBC structures, including their mandates, statute, membership, management, programs, and ensure that the results of the analysis inform the establishment of the RBO and RBCs.	<ul style="list-style-type: none"> <li>Gender and social analysis report on the proposed RBO and RBC.</li> <li>Policy and implementation plan of the RBO and RBC explicitly provide for inclusion of women in the secretariat and membership, as well as identify specific programs and actions that ensure women's meaningful participation in water management.</li> <li>Management structure of the RBO and each RBC includes at least one woman.</li> <li>Meetings of the RBO and RBC ensure the meaningful participation of women and reflected in the minutes of the meetings.</li> </ul>	Gender & Social Development Consultant	Q3 2017
1.2 Ensure that women's concerns are reflected in the Pyanj River Basin Management Plan	<ul style="list-style-type: none"> <li>Pyanj River Basin Management Plan includes a provision on ensuring women's participation in the RBO and RBC.</li> </ul>	Gender & Social Development Consultant, RBO, RBC	Q1 2019
1.3 Ensure women's meaningful participation in river basin-wide consultation among water users	<ul style="list-style-type: none"> <li>At least 30% of the participants in meetings are women (2015 baseline,0).</li> <li>Minutes of the meetings reflect women's views on water resources management, water quality, and service provision of the RBC.</li> <li>Grievances, concerns and disputes of different water users, including those of women water users, are addressed and reflected in minutes of the meetings.</li> </ul>	Gender & Social Development Consultant, RBO, RBC	Q1 2019
1.4 Conduct information campaign on the project including, new technologies learned, with focus on benefits to women farmers.	<ul style="list-style-type: none"> <li>All information materials contain gender-sensitive messages.</li> <li>Four billboards (one for each district), five kinds of posters, three kinds of radio advertisements produced.</li> </ul>	Gender & Social Development Consultant, RBO	Q4 2017

<b>Output 2. WRM infrastructure in PRB modernized and climate-proofed</b>			
2.1 Conduct public consultations on the employment of local community members in civil works, including ways to facilitate women's engagement in civil works and other project work.	<ul style="list-style-type: none"> <li>Community participation in public consultations includes at least 50% women (2015 baseline, 30%).</li> <li>Agenda of public consultations include encouraging women to do project work and soliciting recommendations to enable women to be employed in project work.</li> </ul>	ALRI, PIOs, PMO Gender & Social Development Officer	Q3 2018
2.2 Employ local labor, including women, in project works.	<ul style="list-style-type: none"> <li>Labor contract documents include specific provisions encouraging the hiring of local labor and women workers.</li> </ul>	Contractors overseen by ALRI, PIO and PMO Gender & Social Development Officer	Q3 2018
2.3 Install water points in strategic places for household use.	<ul style="list-style-type: none"> <li>12 water points along main canals and 3 water points along each target inter-farm canal installed for use of households in the project target area (2015 Baseline, 0).</li> </ul>	Contractors overseen by ALRI, PIO and PMO Gender & Social Development Officer	Q3 2018- Q2 2021
<b>Output 3. Farm management and water use capacities increased</b>			
3.1 Conduct (baseline) social mapping of WUAs in the project areas.	<ul style="list-style-type: none"> <li>List of WUAs, including size of membership (sex-disaggregated), leadership composition, number and kinds of activities done in the past.</li> <li>Women-led WUAs as well as WUAs with at least 30% women members are identified (2015 baseline, incomplete statistics on WUAs).</li> <li>Social mapping report identifies ways to increase women's participation in WUA management/secretariat.</li> </ul>	NGO overseen by ALRI, PIO and PMO Gender & Social Development Officer	Q1 2018- Q4 2020
3.2 Conduct TNA of WUAs, with specific attention to the training needs of women water users.	<ul style="list-style-type: none"> <li>TNA report includes a specific section highlighting the needs and concerns of women water users.</li> </ul>	NGO overseen by ALRI, PIO and PMO Gender & Social Development Officer	Q3 2017
3.3 Develop and conduct training programs for WUA managers and members, with special programs for women, to address the needs of water users.	<ul style="list-style-type: none"> <li>At least two detailed training programs that improve the farming and water use knowledge and skills of all water users (2015 baseline, 0).</li> <li>At least two detailed leadership training programs targeting women water users designed to increase the number of women in leadership positions in the WUAs.</li> <li>WUA management trainings on topics such as financial management, budgeting and organizing, include women participants</li> <li>At least 50% women participation in all trainings (2015 baseline, 40%)</li> </ul>	NGO overseen by ALRI, PIO and the Gender & Social Development Officer	Q3 2017
3.4 Organize demonstration plots on men- and women-led <sup>a</sup> farms and plots showcasing improved agricultural practices.	<ul style="list-style-type: none"> <li>30% of demonstration plots showcasing improved agricultural practices are on women-led plots and farms (2015 baseline, 0)</li> <li>At least 30% of CIS farmers implementing improved irrigated agricultural practices by 2020 are women (2015 baseline, 0)</li> </ul>	NGO overseen by ALRI, PIO and PMO Gender & Social Development Officer	Q1 2018- Q2 2020
3.5 Conduct cross-farm visits and study tours among WUAs and dekhan farms to enhance learning and exchange of good practices.	<ul style="list-style-type: none"> <li>Eight cross-farm visits and study tours conducted (2015 baseline, 0)</li> <li>50% of participants in study tours are women (2015 baseline, 0)</li> </ul>	NGO overseen by ALRI, PIO and PMO Gender & Social Development Officer	Q1 2019
3.6 Document experiences and	<ul style="list-style-type: none"> <li>Report includes good practices and lessons learned in ensuring women's full participation</li> </ul>	NGO overseen by ALRI PIO and PMO	Q3 2019- Q2 2021

lessons learned in implementing systematic water use training programs and ensuring women's full participation	in water use training programs	Gender & Social Development Officer	
3.7 Conduct (end line) social mapping of WUAs in the project areas	<ul style="list-style-type: none"> <li>WUAs coverage of CIS area increased to 100%, with women's membership in WUAs increased to at least 30% in 2020 (2015 baseline, 20%)</li> <li>Women's representation is at least 10% in WUA leadership and 20% in steering committee, by 2020 (2015 baseline, 0 women head of WUA and 14% women in the steering committee)</li> </ul>	NGO overseen by ALRI PIO and Gender & Social Development Officer	Q4 2020
<b>Efficient and effective project management system</b>			
<ul style="list-style-type: none"> <li>Recruit the gender and social development experts for the project</li> </ul>	<ul style="list-style-type: none"> <li>Gender &amp; Social Development Consultant (for Output 1) and Gender &amp; Social Development Officer (for Outputs 2&amp;3) are hired within the first three months of project implementation</li> </ul>	MEWR/ALRI	Q1 2017
<ul style="list-style-type: none"> <li>Engage an NGO with strong gender capacity for Output 3</li> </ul>	<ul style="list-style-type: none"> <li>Gender is mainstreamed in all components of Output 3</li> </ul>	ALRI, PIO, PMO Gender & Social Development Officer	Q1 2017
<ul style="list-style-type: none"> <li>Include gender indicators in the project performance monitoring system</li> </ul>	<ul style="list-style-type: none"> <li>PPMS includes gender indicators and regularly populated with sex-disaggregated data</li> </ul>	MEWR, ALRI, PIO, PMO Gender & Social Development Officer	Q3 2017
<ul style="list-style-type: none"> <li>Ensure reporting of gender equality results</li> </ul>	<ul style="list-style-type: none"> <li>Quarterly progress reports and annual reports, as well as completion reports include progress of GAP implementation</li> </ul>	MEWR, ALRI, PIO and PMO Gender & Social Development Officer	Q2 2018 – Q2 2021

ALRI = Agency on Land Reclamation and Irrigation, CIS = Chubek Irrigation System, GAP = gender action plan, MEWR = Ministry of Energy and Water Resources, MIS = management information system, NGO = nongovernment organization, PIO = Project Implementation Office, PMO = Project Management Office, PPMS = project performance monitoring system, PRB = Pyanj River Basin, RBC = River Basin Council, RBO = River Basin Organization, TNA = training needs assessment, WRM = water resources management, WUA = water users association.

<sup>a</sup> Women-led farms and plots are those that are owned, registered under women's names, or predominantly managed by women.

Source: Asian Development Bank.

## IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION

112. The EAs will be responsible for monitoring project progress and evaluating project outputs. Monitoring and evaluation shall be in accordance with the design and monitoring framework (DMF) and each EA will be responsible for regular reporting both to the Project Steering Group and ADB.

### A. Project Design and Monitoring Framework

**Table 23: Design and Monitoring Framework**

<b>Impacts the Project is Aligned with:</b>			
Irrigated land in good condition and food security increased by 2020 (Land Reclamation and Irrigation Development Strategy [draft], 2015)			
The efficiency of water-resources use increased by 2020 (Water Sector Reforms Programme, 2015)			
<b>Results Chain</b>	<b>Performance Indicators with Targets and Baselines</b>	<b>Data Sources and Reporting Mechanism</b>	<b>Risks</b>
<b>Outcome</b> Increased agricultural production in CIS area of PRB	By December 2022, a. Cultivated irrigated areas served by CIS increased to originally designed 50,163 ha (2014 baseline: 43,210 ha)  b. Cropping intensities increased by 10 % for gravity irrigation and by 50% for pump irrigation (2014 baselines: 118% and 106%)  c. Crop yield increased by 8% (2014 baseline: <sup>a</sup> )	a. ALRI Reports  b-c. Provincial and district agricultural statistics, and NGOs report through ALRI	Extreme climate events hamper agricultural production
<b>Outputs</b> 1. Water resources in in PRB better managed	1a. Joint Afghanistan/ Tajikistan PRB Committee commenced monitoring the Pyanj River water by Q2 2018 (2014 baseline: N)  1b. PRBMP including drought management plan submitted to PRB Council by Q1 2019 (2014 baseline: N)  1c. Water discharge monitored at key sections from Pyanj River matches the actual diversions by Q2 2021 (2014 baseline: actual diversion to Chubek main canal is 63% of the monitored discharge)	1a-e. MEWR Reports	The activity to form PRB committee in Afghanistan side is delayed or not implemented due to security issue.  Government does not effectively support national water sector reforms

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanism	Risks
	<p>1d. PRBO and PRBC management structures include at least one woman each by Q4 2017 (2014 baseline: 0)</p> <p>1e. At least 30% of the participants in stakeholder meetings in PRB Council are women by Q1 2019 (2014 baseline: 0)</p>		
<p>2. Modernized and climate-proofed WRM infrastructure in CIS of PRB fully operational</p>	<p>By June 2021,</p> <p>2a. Irrigation conveyance efficiency up for on-farm canal in CIS, increased to 66% for gravity-fed system, and 82% for pump-fed system (2014 baseline: 60% for both systems)</p> <p>2b. Pump efficiency of target pump stations in CIS increased to 75% (2014 baseline: less than 50%)<sup>b</sup></p> <p>2c. Sediment entering CIS canal reduced to 112,500 m<sup>3</sup>/year (2014 baseline: 460,000 m<sup>3</sup>/year)</p> <p>2d. Access to water for household use provided by installation of 12 water points along main canal and 3 water points along each target inter-farm canal (2015 Baseline, 0)</p>	<p>2a-d. ALRI and consultant reports</p>	<p>Farmers' unwillingness to participate in on-farm I&amp;D rehabilitation</p> <p>Extreme flood and/or low water in Pyanj River hamper irrigation water intakes</p> <p>Increased security concerns near Afghanistan border hampers engagement of competent contractors</p>
<p>3. Farm management capacity and water use skill improved</p>	<p>By December 2021,</p> <p>3a. WUAs coverage of CIS area increased to 100% (2014 baseline: 83%)</p> <p>3b. The average collection rate of irrigation service fee in terms of the amount among all WUAs increased to 80% (2014 baseline: 46%)</p> <p>3c. Women's membership in WUAs increased to 30% (2014 baseline: 13%)</p> <p>3d. The average water use ratio (i.e., field application efficiency) in CIS area increased to 60% (2014 baseline: 50%)</p>	<p>3a-c. NGO reports through ALRI</p> <p>3d. ALRI reports</p>	<p>Weak security hinders engagement of capable NGOs to provide services</p>

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanism	Risks
	3e. At least 30% of women lead demonstration plot activities (2014 baseline: 0)	3e. NGOs reports through ALRI	
<b>Key Activities with Milestones</b>			
<b>Output 1. WRM Capacity Improved in PRB</b>			
<ul style="list-style-type: none"> <li>1.1 Facilities of PRB Organization available and equipped by Q1 2018.</li> <li>1.2 Establish PRB Organization by Q4 2017.</li> <li>1.3 Establish PRB Council by Q2 2018.</li> <li>1.4 PRB Organization prepares PRBMP (Q4 2017–Q4 2018).</li> <li>1.5 PRB Council reviews PRBMP (Q1 2019–Q2 2019).</li> <li>1.6 Establish Joint PRB committee with Afghanistan government by Q2 2018.</li> <li>1.7 Joint PRB Committee prepares PRB WRM monitoring system (Q2 2018–Q1 2019).</li> <li>1.8 Joint PRB committee approves PRB WRM monitoring system by Q2 2019.</li> <li>1.9 Training of local MEWR staff completed by Q2 2021.</li> </ul>			
<b>Output 2. Modernized and Climate-proofed WRM Infrastructure in PRB fully operational</b>			
<ul style="list-style-type: none"> <li>2.1 Complete modernization of main and inter-farm irrigation structures (Q2 2021).</li> <li>2.2 Complete modernization of pump stations (Q2 2021).</li> <li>2.3 Complete construction of sediment excluding basin (Q3 2020).</li> <li>2.4 Equipment of O&amp;M of main CIS including sediment excluding basin available (Q3 2020).</li> <li>2.5 SCADA system starts operation (Q3 2020).</li> <li>2.6 Conduct capacity development program for ALRI staff and WUA support units (Q1 2018–Q4 2020).</li> <li>2.8 Complete deposited sediment cleaning work along CIS by ALRI (Q2 2021).</li> <li>2.9 Adopt O&amp;M plan and water management system of CIS by Q2 2020.</li> <li>2.10 Complete feasibility study for alternate irrigation method for non-target pump-fed areas (Q2 2019).</li> </ul>			
<b>Output 3. Farm Management and Water Use Capacities Increased</b>			
<ul style="list-style-type: none"> <li>3.1 Engage NGOs to implement the output (Q4 2016).</li> <li>3.2 Conduct capacity development program for improved farm management (Q1 2018–Q4 2021).</li> <li>3.3 Select demonstration plots (Q1 2018–Q2 2020).</li> <li>3.4 Conduct WUA training program (Q1 2018–Q4 2021).</li> <li>3.5 Clean up deposited sediments along CIS on-farm drains by WUAs and water users (Q1 2018–Q2 2021).</li> <li>3.6 Record and publish experience of women's full participation in water use trainings as example of best practices (Q2 2020).</li> </ul>			
<b>Procurement Management</b>			
<ul style="list-style-type: none"> <li>4.1 PMO's initiation of recruitment process of the consultant in each output (Q2 2016).</li> <li>4.2 Recruitment of consultants (Q4 2016).</li> <li>4.3 Initiation of the bid process of the major contract (i.e. pump stations and sediment-excluding basin) (Q2 2017).</li> <li>4.4 Initiation of the bid process of the heavy machinery equipment (Q2 2017).</li> <li>4.5 Contracts for the heavy machinery equipment (Q4 2017).</li> <li>4.6 Contract for the major contract (Q1 2018).</li> </ul>			
<b>Inputs</b>			
<p>ADB:                    ADF Loan: \$19.15 million equivalent                                  ADF Grant: \$5.85 million</p> <p>Government:        \$3.61 million</p> <p>JFPR:    5 million (\$2 million for JFPR TA, \$3 million for JFPR Grant)</p>			
<b>Assumptions for Partner Financing: Not Applicable.</b>			

ADB = Asian Development Bank, ADF = Asian Development Fund, ALRI = Agency for Land Reclamation and Irrigation, CIS = Chubek Irrigation System, ha = hectare, I&D = irrigation and drainage, JFPR = Japan Fund for

Poverty Reduction, MEWR= Ministry of Energy and Water Resources, NGO = nongovernmental organization, O&M = operation and maintenance, PIO = project implementation office, PMO = project management office, PRB = Pyanj River Basin, PRBC = Pyanj River Basin Council, PRBO = Pyanj River Basin organization, PRBMP = Pyanj River Basin Management Plan, SCADA = Supervisory Control and Data Acquisition, WRM = water resources management, WUA = water users association.

<sup>a</sup> wheat (2.96 t/ha), cotton (2.05 t/ha), vegetables (21.0 t/ha), orchard (8.93 t/ha), fodder maize (18.0 t/ha).

<sup>b</sup> Pump efficiency is defined as “pumped water volume/consumed energy”.

Source: Asian Development Bank.

## B. Monitoring

113. **Project Performance Monitoring.** The EAs will develop comprehensive project performance monitoring system and closely monitor the progress of project activities, outputs, and outcomes based on the project performance monitoring system in accordance with the DMF. In particular, the project performance monitoring system will assess the following outputs and indicators (i) progress of planned activities according to the milestones; (ii) progress in achieving each project output and project outcome according to the performance targets and indicators indicated in the DMF, and (iii) social and economic benefits with focus on the poor and women.

114. Information and data gathered during project implementation period will be analyzed and measured against the targets, and published regularly on the project website. The EAs will:

- (i) Submit quarterly progress reports, covering progress and achievements during the period against milestones and indicators in the DMF. Special emphasis will be on the outputs and outcome to (a) increase in irrigated area, water productivity, total agricultural production, irrigation conveyance efficiency, WUAs coverage area in the CIS, collection range of water service fee, water use ratio (i.e., field application efficiency), cropping intensities; and (b) decrease the volume of sediment entry. Social and gender results that need to be monitored include (a) women’s representation and participation in PRBO, PRBC, WUAs, and all consultation meetings, (b) installation of water points for household use, and (c) women’s participation in trainings, study tours, and demonstration plots;
- (ii) Carry out a satisfactory survey during first year, and on the second to the last year of the project implementation to (a) WUAs including women of WUAs secretariat for the CIS water supply services, (b) the ICS water supply entities for WUAs’ responsible services, (c) CIS farmers including women for the WUAs’ responsible services, and (d) WUAs for farmer’s water use practices; and
- (iii) Produce a project completion report at the last year of project implementation, outlining the achievements and lessons learned.

115. All project assurances including policy, legal, financial, economic, physical, environmental, gender, and other safeguard measures will be monitored through quarterly progress reports, and twice a year, during ADB loan review missions. ADB will also monitor the progress of achievement of each output and outcome based on performance indicators with targets, and each activity based on milestones indicated in the DMF through a project management information system (i.e., e-Ops).

116. **Compliance monitoring.** All project assurances including policy, legal, financial, economic, physical, environmental, gender, and other safeguard measures will be monitored through quarterly progress reports and twice a year during ADB loan and grant review missions.

117. **Safeguards monitoring.** Internal environmental monitoring of the EMP implementation will be accomplished by the environmental officer of the contractors. External environmental monitoring will be a responsibility of the Environment Field Inspector of the PMO. The National and

International Environmental Specialists of the PMO will supervise functioning of the project's Environmental Management System including implementation of the EMP. The National and International Environmental Specialists of the PMO will also be responsible for preparation of the semi-annual environmental monitoring reports and inputs into quarterly progress reports that will be submitted to ADB. For involuntary resettlement (Category C), the social and gender officer in PMO will be responsible for the preparation of the annual monitoring reports that will be submitted to ADB.

118. **Gender and social dimensions monitoring.** The gender and social development consultant (for output 1) and the gender and social development officer in PMO (for outputs 2 and 3) will be responsible for monitoring the implementation of the gender action plan and for the preparation of the semi-annual monitoring reports that will be submitted to ADB.

119. **Contribution to the Pilot Program for Climate Resilience Monitoring and Evaluation Framework.** In addition to project monitoring requirements, the EA will provide data and information on climate change adaptation activities to the Committee for the Environment Committee that is responsible for the monitoring and evaluation of the climate change adaptation activities in Tajikistan in accordance with the modalities developed by the Committee for Environmental Protection.

### C. Evaluation

120. **Inception Mission:** ADB will conduct an inception mission within 3 months of loan and/or grant signing to assess project readiness and implementation arrangements including establishment of PMO, PIOs, opening of an imprest account, progress of recruitment of three consulting services, status of the development of the project performance monitoring system, and progress of advance procurement actions. **Review Mission:** ADB will field review missions at least once a year to (i) assess the progress of project activities and outputs and effectiveness of implementation arrangements, (ii) monitor the implementation of GAP and safeguard compliance with ADB Safeguard Policy Statement (2009), (iii) review compliance with loan and grant agreements and related matters, (iv) follow up on decisions and actions agreed during previous review missions, and (v) resolve any project implementation issues that may arise. ADB will conduct a midterm review in the third year of project implementation. The midterm review will (i) assess the project performance and achievement against targets and milestones in the DMF; (ii) review the initial outcomes, benefits, and impact of the project, and (iii) identify gaps, if any, and recommend necessary changes to strengthen implementation arrangements or modify project design. **Project Completion Review:** ADB will field a project completion review mission upon physical completion of the project to commence preparation of ADB's project completion report. The mission will (i) assess the project performance against all targets, indicators, and benchmarks (including any revised at the midterm review); (ii) evaluate initial benefits, and outcome of the project across outputs, and (iii) identify any incomplete activities and agree on the necessary actions.

### D. Reporting

121. The EAs through the PMO will submit to ADB the following reports: (i) quarterly progress reports in a format consistent with ADB's standards; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions; (c) updated procurement plan, (d) progress of the gender action plan; (e) issues concerning environment and social safeguards; and (f) updated implementation plan for the next 12 months. The EAs, through the PMO, shall submit the government's project completion report within 6 months of physical completion of the project. The government's project completion report will evaluate the performance and achievements of the project against the indicators, expected benefits, and outcome, and should include information on



(a) project implementation, and (b) the use of loan and grant funds to ADB.<sup>22</sup> The EA will submit regular reports to the Committee of Environmental Protection on project's contribution to the Pilot Program for Climate Resilience national targets, and contribute to national reporting on the Pilot Program.

#### E. Stakeholder Communication Strategy

122. Project information will be strategically disseminated through media at main milestones including loan signing, contract awards and project completion. Grievance redress mechanism will be established at the PMO, by phone and email, and through public consultation events.

**Table 24: ADB Public Communications Strategy**

Project Documents	Means of Communication	Responsible Party	Frequency	Audience(s)
Project data sheet (PDS)	ADB's website	ADB	Initial PDS posted on the website no later than two weeks after approval of the concept paper; updated at least twice a year	General Public
Design and Monitoring Framework (DMF)	ADB's website	ADB	Key information from the draft reflected in project data sheet; final version posted on the website at the same time it is circulated to the Board for approval, subject to the concurrence of the government	General Public
Initial Environmental Examination	ADB's website	ADB	Post fact-finding mission	General Public, project-affected people in particular
Resettlement Planning Documents	ADB's website	ADB	Post fact-finding mission	General Public, project-affected people in particular
Reports and Recommendations of the President	ADB's website	ADB	Posted on the website within two weeks of Board approval of the loan and grant	General Public
Legal and Grant Agreements	ADB's website	ADB	No later than 14 days of Board approval of the project	General Public
Summary of Poverty Reduction and Social Strategy	ADB's website	ADB	Posted on the website at the same time it is circulated to the Board for approval, subject to concurrence of the government	General Public
Documents Produced under Technical Assistance	ADB's website	ADB	within 2 weeks of completion	General Public
Project Administration Memorandum	ADB's website	ADB	Posted on the website at the same time it is circulated to the Board for approval, subject to concurrence of the government	General Public

<sup>22</sup> Project completion report format is available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>.

<b>Project Documents</b>	<b>Means of Communication</b>	<b>Responsible Party</b>	<b>Frequency</b>	<b>Audience(s)</b>
Social and Environmental Safeguard Monitoring Reports	ADB's website	ADB	Within 1 month after each 6 month monitoring period	General Public, project-affected people in particular
Audited project financial statements and the auditors' report	ADB's website	ADB	Within 30 days of receipt	General Public
Project Completion Report	ADB's website	ADB	Within two weeks of circulation to the Board for information	General Public
Evaluation Report	ADB's website	ADB	Within two weeks of circulation to Management and the Board	General Public
Project progress information	ALRI's or Project's website	ALRI/PMO	Quarterly	General Public

Source: Asian Development Bank.

## **X. ANTICORRUPTION POLICY**

123. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.<sup>23</sup> All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agencies and all project contractors, suppliers, consultants and other service providers. Individuals and/or entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.<sup>24</sup>

124. To support these efforts, relevant provisions are included in the loan and grant agreements and the bidding documents for the project. The Government, through ALRI, MEWR and MOF, will ensure that the anticorruption provisions acceptable to ADB are included in all bidding documents and contracts including provisions specifying the right of ADB to audit and examine the records and accounts of the executing agencies and all contractors, suppliers, consultants, and other service providers as they relate to the Project.

125. The EAs will provide updated information on the project on their websites, including information on the performance of the project, business opportunities, bidding process and guidelines, outcome of biddings and summary progress reports of the project.

## **XI. ACCOUNTABILITY MECHANISM**

126. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The accountability mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the accountability mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the accountability mechanism.<sup>25</sup>

<sup>23</sup> Available at: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

<sup>24</sup> ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>

<sup>25</sup> For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

## **XII. RECORD OF PAM CHANGES**

127. All revisions and/or updates during the course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the PAM.

## **DETAILED CONSULTING SERVICES FOR EACH SPECIALIST (OUTPUT 1)**

1. The required consulting services will be provided under the capacity development delegated JFPR technical assistance as outlined in the Linked Document Attached Technical Assistant. The detailed terms of reference for each required specialist is provided in the following paragraphs. Under the arrangement of delegated technical assistance, the Ministry of Energy and Water Resources (MEWR) will be responsible for advertisement, selecting, supervising the consultant while ADB will retain the responsibility for negotiating and signing the contract with the consultant, issuing the notice to proceed.

2. **Water Resources Institutional Specialists (international [Team Leader]: 6 person-months, national: 24 person-months).** The international water resources institutional specialist will be the team leader and thus responsible for overall project management, team coordination, and delivery of quality and timely outputs. These specialists, with the assistance of the regional river basin management specialists, will perform the following tasks.

- (i) Prepare and monitor the overall project work plan and work plans for all specialists, keeping in view the overall objective of improving water resources management in the Pyanj River Basin (PRB) by prevention and reduction of damages, and improvement of irrigation benefits; Help establish an intra-governmental working group in Tajikistan;
- (ii) Closely coordinate with working groups in the different fields of work cooperation;
- (iii) Develop an organization structure and draft agreement for the establishment of the JPRBC;
- (iv) Facilitate Joint Afghanistan-Tajikistan Intergovernmental Working Group meetings to discuss and finalize revisions, and signing of the bilateral agreement for the establishment of the JPRBC, and approval of its organization structure;
- (v) Facilitate approval of the draft agreement by the country delegations at the final meeting;
- (vi) Facilitate signing of the bilateral agreement by the countries (sectoral ministries and Ministry of Foreign Affairs) for the establishment of the JPRBC;
- (vii) Prepare action plan for implementation of the bilateral agreement and technical and capacity development support;
- (viii) In the Tajikistan portion of the PRB, facilitate establishment of River Basin Organizations (RBOs) and its sub-office, and River Basin Councils (RBCs);
- (ix) Formulate regulations on operational procedures and other tasks of the Joint Commission (for approval by the two governments), the RBO and its sub-office;
- (x) Coordinate with other development partners in Tajikistan's water sector reform projects being implemented in other river basins, and incorporate lessons learnt from their activities in developing RBOs and RBCs; and
- (xi) Provide hands-on capacity building to RBOs and its sub-office by expediting their tasks.

3. **Regional River Basin Management Specialists (international: 6 person-months, national: 18 person-months).** These specialists will work jointly with the water resources institutional specialists in performing their tasks. In particular, s/he will perform the following tasks with support from other specialists:

- (i) Facilitate implementation of river basin management approach, monitoring, and coordination among institutions in the basin following integrated WRM principles;
- (ii) For the Tajikistan portion of the PRB, develop River Basin Management Plans (RBMPs) which include drought management plan and flood risk management plan;
- (iii) Development of RBMPs should include a description of existing situation, impact analysis, objectives to address the priority issues, and timed and costed program of measures;
- (iv) Develop measurable indicators to monitor implementation of the PRBMP which may include but not limited to modernization/improvement of water infrastructure, improvement of WRM practices, and protection of water resources;
- (v) Identify the bodies responsible for implementing and monitoring the RBMP;
- (vi) Coordinate with other development partners of Tajikistan's water sector reform projects being implemented in other river basins, and incorporate lessons learnt from their activities in developing the PRBMP; and
- (vii) The PRBMP should be developed in line with IWRM principles and should take into account the national water policy and international obligations, specificity, measurability, and practicality.

**4. Water Law Specialists (international: 3 person-months, national: 12 person-months).** These specialists will provide support to Team Leader and other team members on the legal aspects to ensure that the proposed organizational structures, and management and monitoring plans are in line with international water laws, in line with national water policies, and not in conflict with the existing agreements where the participating countries are signatories. Their tasks will include but not limited to the following.

- (i) Facilitate preparation of draft agreements on the formation of a RBO and RBCs, and their institutional structures based on international law, regional experience, and national laws;
- (ii) Assist in presentation of the draft agreement to the two countries and gather feedback and incorporate necessary revisions;
- (iii) Facilitate preparation of the capacity building plan for the PRBO and RBCs; and
- (iv) Facilitate implementation of the capacity building activities through trainings and workshops.

**5. Hydrometeorologist/Climate Change Specialists (international: 6 person-months, national: 18 person-months).** These specialists will work closely with the Team Leader and other team members and ensure that all relevant hydrological, hydro-meteorological, and climate change aspect are given due consideration in the development of organization structure, management plans, and monitoring plans for both JPRBC and RBO. The task would include but not limited to the following.

- (i) Identify the gaps of the capacities of river discharge, water allocation, hydrological and hydrometeorological data collection, monitoring, processing currently done by the MEWR local offices;
- (ii) Facilitate establishment of a practical system for regular river discharge, water allocation, hydrological and hydrometeorological data monitoring to be processed by the RBO, its sub-office, and the MEWR local offices, and other national agencies for the use of developing RBMPs and other national agencies, and data exchange between Afghanistan and Tajikistan;

- (iii) Establish minimum quality requirements for the data to be monitored by the RBO and its sub-office, the MEWR local offices and other national agencies and for the data to be exchanged and communicated between two countries, identify timing and the exact locations of the Pyanj River discharge, water allocation, hydrological and hydrometeorological stations for data collection, monitoring, and exchange;
- (iv) Identify monitoring parameter suggested for data collecting, monitoring, and exchange;
- (v) Develop practical operational framework for the collecting, monitoring, and exchange of river discharge, water allocation, hydrological and hydrometeorological data and other water and environmental information;
- (vi) Propose required set of data collection and monitoring equipment, and required recalibration, repair, and/or installation of data collection and monitoring stations with cost estimations, and procure and/or contracting them out;
- (vii) Train the RBO, its sub-office, the MEWWR local staff to improve their data collection, monitoring capacities, and monitor and evaluation their performance against established baseline indicated in the design and monitoring framework; and
- (viii) Facilitate improved understanding of river hydrology, hydrometeorology, and hydro-morphology of the basin among the various institutions associated with the project.

**6. Water Resources Economists (international: 2 person-months, national: 12 person-months).** These economists will work closely with the Team Leader and other team members to facilitate integration of economic aspects in preparation of the RBMP and in development of the monitoring and evaluation indicators. Their involvement will include but not limited to:

- (i) Assist the RBOs and RBCs to analyze and evaluate the current water situation to plan basin WRM for different periods keeping in view the economic developments, demographic forecasts, effects of climate change, and other factors affecting the basin development.

**7. Information Technology Specialist (national: 9 person-months).** This specialist will:

- (i) Assess the data processing and database requirements for RBO and its sub-office, the MEWR local offices and other national agencies, and in JPRBC, keeping in view specific requirements and functions they are required to perform;
- (ii) Develop practical data processing system, and design and assess the equipment required for data processing, establishing the databases, prepare equipment specifications, and procure and install the equipment;
- (iii) Procure and/or develop the software to run the data processing and data bases;
- (iv) Develop operation manuals for the operators regarding use of databases;
- (v) Key in the information and make the databases operational;
- (vi) Develop database for each sub-basin to help improve quality of decision making;
- (vii) Develop procedures on updating of information, future system upgrade, and network expansion for data exchange;
- (viii) Develop capacity of the RBO and its sub-office with respect to IT; and
- (ix) Train the RBO and its sub-office, and the JPRBC staff to run the databases.

8. **Environment Specialist (national: 12 person-months).** This specialist will work closely with the Team Leader and other team members and ensure that all relevant environmental aspects are given due consideration in the development of organization structure for both the JPRBC and RBO, and in the development of the RBMP. Assist the RBOs, RBCs, and JPRBC to analyze and evaluate the current and likely environmental situation to plan basin WRM for different periods.

9. **Gender and Social Development/Communication Facilitation Specialist (national: 12 person-months).** This specialist will work closely with the Team Leader and other team members and ensure that all relevant water use and water supply stakeholders are involved in the consultation, review, and approval process of the RBMP in the platform of the RBC. S/he will be responsible for implementing required activities included in the Gender Action Plan, monitoring and evaluating achievements against targets in the Plan, and reporting to the team leader.

**SCOPE OF SERVICES FOR PROJECT IMPLEMENTATION CONSULTANT (PIC) FOR  
(OUTPUT 2)**

1. The PIC will support ALRI, PMO and the PIOs to manage project implementation. The scope of services and detailed tasks of the PIC are given in the following paragraphs. The proposed positions and person-month inputs for each position are provided in Table A2.1. The total consultant cost is estimated at \$1.66 million excluding contingencies, and taxes and duties.

**Table A2.1: Proposed Position, inputs, and Estimated Costs<sup>a</sup>**

Sr. No.	Scope of Services	Position	International Staff			National Staff		
			Person-Months	Unit Cost	Total Cost (,000 \$)	Person-Months	Unit Cost	Total Cost (,000 \$)
1	Project Management and Monitoring and Evaluation	Project Manager/Team Leader (TL) (int.) and deputy TL	12.0	21.0	252.0	40.0	3.2	128.0
		M&E Specialist	1.5	19.0	28.5	15.0	3.0	45.0
		Social Safeguards Specialist (s)	0.5	19.0	9.5	7.0	2.7	18.9
		Procurement and Contract Specialist	2.0	19.0	38.0	18.0	3.0	54.0
		Environmental Specialist	0.5	19.0	9.5	7.0	2.7	18.9
		O&M Specialist	2.0	19.0	38.0	9.0	3.0	27.0
		Financial Mmanagement Specialist	0.0	19.0	0.0	4.0	3.0	12.0
	<b>Sub- Total</b>		<b>18.5</b>		<b>375.5</b>	<b>100.0</b>	<b>303.8</b>	
2	Review of Feasibility Design/Detailed Design and Preparation of Bidding Documents	Hydraulic Design Engineer/Deputy TL	2.0	20.0	40.0	4.0	3.0	12.0
		Structural Design Engineering Specialist	2.0	19.0	38.0	4.0	3.0	12.0
		Geotechnical Engineering Specialist	0.0		0.0	1.5	3.0	4.5
		Telecommunication Specialist	0.0	19.0	0.0	2.0	3.0	6.0
		Sedimentation/Hydrology Specialist	1.0	19.0	19.0	2.0	3.0	6.0
		Climate Change Specialist	1.0	19.0	19.0	2.0	3.0	6.0
		Mechanical Engineer (Pumping Stations, Gates and Gearing)	1.0	19.0	19.0	5.0	3.0	15.0
		Electrical Engineer (Pumping Stations)	1.0	19.0	19.0	3.0	3.0	9.0
			<b>Sub- Total</b>		<b>8.0</b>	<b>154.0</b>	<b>23.5</b>	<b>70.5</b>
3	Construction Supervision Activities	Planning & Scheeduling/ Costing Engineer	0.5	19.0	9.5	6.0	3.0	18.0
		Contract/ Claims Specialist	0.5	19.0	9.5	10.0	3.0	30.0
		Quality Control Engineer	3.0	19.0	57.0	20.0	3.0	60.0
		Field Engineers - 3				60.0	2.0	120.0
		Laboratory Engineer				6.0	2.0	12.0
	<b>Sub- Total</b>		<b>4.0</b>	<b>76.0</b>	<b>102.0</b>	<b>240.0</b>		
4	Capacity Development to ALRI and WUASU Local Staff	Irrigation Engineer	2.0	19.0	38.0	14.0	2.7	37.8
		WUA Specialist	2.0	19.0	38.0	6.0	2.7	16.2
		<b>Sub- Total</b>	<b>4.0</b>		<b>76.0</b>	<b>20.0</b>		<b>54.0</b>
	<b>Total</b>		<b>34.5</b>	<b>681.5</b>	<b>245.5</b>		<b>668.3</b>	



## **A. Project Management and Coordination**

2. The scope of services will be:

- (i) Assist in coordinating all matters related to project implementation with relevant authorities of the government, the local administration, ADB, and other organizations;
- (ii) Provide on-the-job training in implementing ADB guidelines and procedures, efficient project implementation and scheduling techniques;
- (iii) Assist in programming project activities, estimating the financial requirements for these activities and the release of funds on time;
- (iv) Assist in coordination with other agencies concerned to ensure that procurement of works, goods, and services follow ADB's guidelines and procedures, and that all steps are taken expeditiously and in a transparent manner;
- (v) Assist in ensuring that the accounting standards for the project meet ADB's requirements and that the withdrawal applications sent to ADB are complete, accurate and are sent on a timely basis;
- (vi) Assist in ALRI's development of CIS asset and O&M plan to comply with the loan covenant;
- (vii) Assist in coordination with the PIOs to ensure that all periodic reports are prepared systematically, submitted on time, reflect the real picture of project implementation; that major issues relating to project implementation are brought to the attention of the concerned parties and the necessary remedial measures are implemented; and
- (viii) Assist in maintaining detailed financial accounts and other project records, and prepare other documentation as may be required by the PMO Director or ADB.

## **B. Monitoring and Evaluation**

- (i) In coordination with the PMO and PIOs develop a project monitoring and evaluation (M&E) system, including: (a) long-term environmental and social impact monitoring programs, (b) quantifiable indicators to monitor and measure the performance, level of maintenance and efficiency of the rehabilitated system, and (c) benefit monitoring systems, including economic benefits and beneficiary household financial incomes attributable to the project, among others;
- (ii) Ensure that such an evaluation system will be compatible with or improve the existing government's system to monitor development progress in the agricultural sector so that the project impact monitoring can be performed effectively by the Government after project completion;
- (iii) Develop in coordination with PMO and PIOs a standard format for reports that will clearly reflect project progress in the context of each of its components;
- (iv) Assist in ALRI's collection of necessary information to develop CIS asset management and O&M plan to comply with the loan covenant;
- (v) Prepare manuals and conduct training for the EA, PMO and PIO staff who will be responsible for project M&E to conduct regular monitoring of the project activities and prepare project progress reports;
- (vi) Assist the EA and IAs to establish and implement Grievance Redress Mechanism;
- (vii) Assist the EA and IAs to (a) update as necessary the EMP implementation cost provided in the IEE, (b) include the EMP in bidding documents, (c) monitor and review the EMP in line with ADB's SPS and as provided in the bidding document,

- (d) effectively implement and carry out activities related to implementation of the EMP, and (e) assist the EA and IAs in preparing the environmental monitoring report on a bi-annual basis for submission to ADB. In this respect, the consultant will ensure that all project components are implemented as required by the environmental laws of the Government of Tajikistan and ADB's SPS;
- (viii) Assist the EA and IAs to assess the environmental impacts of all required works under the project;
  - (ix) Assist the EA and IAs to identify environmental sensitivities in the project area requiring further investigations and prepare plan on environmental mitigation measures;
  - (x) Assist the EA and IAs to evaluate the requirements for environmental monitoring and prepare a long-term environmental monitoring program;
  - (xi) Assist the EA and IAs to (a) update as necessary the EMP implementation cost provided in the EIA, (b) include the EMP in bidding documents, (c) monitor and review the EMP in line with ADB's SPS and as provided in the bidding document, (d) effectively implement and carry out activities related to implementation of the EMP, and (e) assist the EA and IAs in preparing the environmental monitoring report on a bi-annual basis for submission to ADB. In this respect, the consultant will ensure that all project components are implemented as required by the environmental laws of the Government of Tajikistan and ADB's SPS;
  - (xii) Assist in reviewing and updating, as necessary social and gender studies, and preliminary resettlement due diligence report prepared by PPTA Consultants;
  - (xiii) Assist in preparing Environment Health Safety Plan, Change Management Statement if required and Resettlement Plans for all locations where project civil works will involve land acquisition and/or livelihood disruption on rights of way.
  - (xiv) Assist ALRI, PMO and PIOs in disclosing and implementing the Resettlement Plans and in the conduct of due diligence and formulation of corrective actions for activities or land acquisition assessment not covered in the PPTA in accordance with the ADBs SPS;
  - (xv) Support ALRI, PMO and PIOs in monitoring and carrying out activities related to implementation of the LARP in line with relevant ADB guidelines;
  - (xvi) Assist in planning and conducting a midterm socioeconomic survey that updates the survey prepared by the PPTA for the project area;
  - (xvii) Assist in reviewing the analyses of the midterm socio-economic survey data collected and reported for the Social Impact Assessment, and provide comments and recommendations;
  - (xviii) Support the Specialists to incorporate social and gender dimensions in preparing the relevant training programs for water users;
  - (xix) In coordination with the EA, IAs and the consultants engaged for output 3 (i.e., NGOs and/or local universities), lead the collection data and information related to (a) crop land use, crop patterns, cropping intensity, crop yields, etc., and (b) economic surplus parameters to assist the Government and ADB to conduct the project economic and financial reevaluation by the project's midterm review. Data and information requirements for surveys/collection led/coordinated by M&E Specialists are in Annex Table 3 of the Detailed Economic and Financial Analysis;
  - (xx) Implement the Gender Action Plan (developed during PPTA) or other actions integrated in the project design that addresses the gender issues identified in the social and gender analysis done during PPTA, which includes, among other things, actions that promote women's involvement in the project implementation including efficient water use; and

- (xxi) Prepare the project completion report at the end of project implementation for finalization by the PMO and ALRI.

### **C. Review of Feasibility-Level Designs**

3. The PIC shall review the feasibility level designs prepared under the PPTA and where necessary revise or elaborate to incorporate any newly introduced operational procedures, changes in the design of the project works and additional data that may have become available after the preparation of the original documents. The PIC shall also review the bidding documents of modernization of pumps prepared under the PPTA and incorporate any changes as may be required in the light of available additional information.

### **D. Detail Design and Preparation of Bidding Documents**

4. The general scope of services for the consultants comprises but is not limited to:
- (i) Carry out additional surveys, geotechnical investigations, hydrological analysis and other such activities where necessary to provide a basis for design of all the hydraulic structures and water supply schemes;
  - (ii) Prepare capacity and command statements for the main canal, interfarm canals and on farm canals and firm-up location of each hydraulic structure including outlets;
  - (iii) Design and prepare longitudinal profiles and cross sections for irrigation channels;
  - (iv) Prepare hydraulic, structural, electro-mechanical and geotechnical design criteria;
  - (v) Undertake detailed design of all proposed project works with complete drawings for I&D infrastructure, sediment excluding basin, rehabilitation and modernization of pumps. The irrigation conveyance distribution system will include the canals, control structures, bridges, falls, outlets and all associated cross drainage works including electro-mechanical works will be designed in strict accordance with accepted state of the art methods of irrigation science, hydraulics, soil mechanics and structural engineering;
  - (vi) Prepare suitable ICB and NCB contract packages, with the cost estimates and complete bidding documents;
  - (vii) Evaluate and incorporate the impact of climate change risks on agriculture and cross drainage flows for the Project; and
  - (viii) Prepare operation and maintenance (O&M) manuals for all the major structures, ensuring optimization of water deliveries.

### **E. Support in Procurement**

- (i) Familiarize ALRI, PMO and PIO staff on project procurement requirements, including ADB guidelines and procedures on procurement and use of consultants;
- (ii) Enhance contracting capacity at ALRI, paying particular attention to on-the-job transfer of knowledge, as well as organizational and management considerations;
- (iii) Assist ALRI, PMO, PIOs prepare detailed procurement plans and packages, and determine realistic time-bound schedules for procurement, including parallel and

- sequential steps for completing procurement activities from initial planning to delivery of goods and services;
- (iv) Prepare bidding documents for procurement of works, goods and equipment, in consultation and coordination with the PMO;
  - (v) Assist in the conduct of prequalification, issuance, bid opening, and evaluation of bids, leading to the award of contracts; and
  - (vi) Assist the PMO and ALRI in preparing bid evaluation reports, discussions during pre-contract award meetings and finalization of the contract for ADB's approval.

## **F. Construction Supervision**

5. The construction works will be executed under the International Federation of Consulting Engineers (FIDIC) Conditions of Contract for Works of Civil Engineering Construction. Accordingly, ALRI will be the Employer and the consultant will function as the Engineer. The consultant will administer the civil and mechanical works contracts and ensure that the project is constructed in accordance with the provision of the civil and mechanical works contracts. The consultant will be required to nominate an engineer's representative who will be a full-time resident in the project area. The responsibility of the Engineer includes, but is not limited to, the following tasks:

- (i) Give the order to commence the works;
- (ii) Review and approve proposed personnel for positions nominated in the Contract;
- (iii) Inspect and approve all material sources identified by the Contractor;
- (iv) Review and approve the Contractor's implementation schedule, and supervise the progress of construction works. The Consultant will keep the Employer informed of any delay or potential delays in the work schedule of the Contract, and will take all necessary actions to prevent potential delays;
- (v) Review, approve and monitor the construction plan to ensure the un-interrupted flow of traffic during construction, and to ensure that construction activities do not endanger safety of the public;
- (vi) Regularly monitor and inspect the contractor's quality control and assurance program to ensure that quality of the finished works meet the contract standards and specifications. This includes regular checking of the materials testing program;
- (vii) Advise and assist the Employer with respect to arbitration or litigation relating to the works, whenever required;
- (viii) Monitor progress of the construction works through computer- aided project management techniques;
- (ix) Convene regular site meetings with the Contractor to discuss issues and problems affecting the progress, and brief the Employer;
- (x) Coordinate with the relevant local government authorities / agencies so as to minimize disruption to the works program, as required by the Contractor;
- (xi) Review the contractor's insurance cover to ensure that the contractor has provided all the insurance required by the contract and such insurance are maintained throughout the contract period;
- (xii) Prepare any required variation orders requested by the Employer and review any variation order proposed by the contractor and provide their advice to the Employer in accordance with the contract;
- (xiii) Review all claims submitted by the Contractor and provide advice to the Employer of the validity of the claim, the effect of such claim on the construction schedule and the cost of the project;

- (xiv) Review and comment on the monthly progress reports submitted by the contractor detailing the work undertaken during the previous month, the progress of the work against the approved schedule, the problems and difficulties encountered by the contractor and other issues requested by the Employer;
- (xv) Issue completion certificate after satisfactory completion of the works in accordance with the contract provisions;
- (xvi) Prepare detailed social screening and mitigation plans, if necessary, and develop poverty monitoring impact monitoring systems;
- (xvii) Ensure that the construction methods as proposed by the contractor for carrying out the works are satisfactory, with particular references to the technical requirements of (a) the EMP, (b) inspection of contractor's construction equipment, (c) safety of the works, property, personnel, and general public;
- (xviii) Assess and check the laboratory and field tests carried out by the contractor, and carry out independent tests.
- (xix) Issue orders to the Contractor to remove or improve any works that are not in accordance with the drawings and/or specifications;
- (xx) Maintain records of all testing work, including cross-referencing of items of work to which each test refers and location from which any samples were obtained for testing;
- (xxi) At the completion of the contract, verify the contractor's "as-built drawings" as a true record of the works as constructed;
- (xxii) Measure the completed works and keep detailed records, including the measurement books;
- (xxiii) Prepare quarterly cash flow projections for the Employer in an acceptable format, in which cash flow should identify budget estimates for all outstanding works;
- (xxiv) Maintain records of all plant, labour and materials used in the construction of the works;
- (xxv) Process interim and final payments to the Contractor (interim monthly payment shall be based on interim payment certificate processed by the Consultant following claims filed by the Contractor);
- (xxvi) The Consultant will be responsible for checking and monitoring the performance requirements in the Contract and ensuring the criteria and limits are met;
- (xxvii) Maintain a day-to-day diary, which shall record all events pertaining to the administration of the contract, request forms, and order given to the contractor, and any other information which may at a later date be of assistance in resolving queries which may arise connecting execution of the works; and
- (xxviii) Develop and implement training programs for ALRI staff at the site on project management including quality assurance and contract administration.

## **G. Capacity Development**

6. Part of consulting services will facilitate capacity development of field offices of the Agency for Land Reclamation and Irrigation (ALRI), and Water Users' Associations Support Unit (WUASU), to enable them to perform their duties more efficiently and effectively. The scope of services will include the design of office and field equipment, training of the staff, and study tours, detailed as follows.

- (i) Assist in the procurement of discharge and sediment measurement equipment, modernization/construction of the required infrastructure for measurement, and training of staff on the use of equipment;

- (ii) Training of (a) the ALRI local staff in three target districts in discharging their duties, and (b) WUASU staff in Khatlon province and three districts to enable them to organize new WUAs on hydrological boundaries and train and guide existing WUAs to undertake their assigned task efficiently; and
- (iii) Overseas study tour for 24 staff of ALRI field offices and WUASU.

7. Below are the required consulting services for capacity development and its respective tasks.

**8. Irrigation Engineer (Irrigation) (international 2 person-months, national 14 person-months).** The international and national specialists will carry out the following:

- (i) Prepare a list of discharge and sediment measurement equipment required for the ALRI field offices in the project area, prepare their specification, and assist in the procurement of the equipment;
- (ii) Together with ALRI staff, locate suitable sites for discharge measurement and sediment sampling, and facilitate modernization/construction of any infrastructure required (like cable cross the canal and modernization/establishment of sediment analysis laboratory);
- (iii) Prepare capacity development modules for ALRI field staff in discharging their duties including estimation of diversion requirement, efficient distribution and management of water resources, coordination with all stakeholders, preparation of program and implementation of proper operation and maintenance, and discharge and sediment measurement;
- (iv) Carry out above capacity development program for ALRI field staff;
- (v) Prepare guidelines for M&E of project implementation and performance, and train relevant staff in undertaking M&E; and
- (vi) Arrange and facilitate an overseas study tour for 24 ALRI field staff and WUASU field staff (Khatlon province and three districts) in two groups that would enhance their capacities to undertake their assigned duties.

**9. Water Users' Associations (WUA) Specialist (international: 2 person-months, national: 6 person-months).** These specialists will focus on capacity development and training of the WUASU including:

- (i) Review of current responsibilities, institutional structure, budgetary allocations, linkages with relevant organizations, and achievements in the recent past of WUASUs, identify constraints, and prepare recommendations for improved performance of the unit;
- (ii) Discuss findings and recommendation with Head, WUASU and higher officials of ALRI, and prepare an agreed line of action for improvement;
- (iii) Prepare recommendations for procurement of field equipment, prepare specifications, and assist in procurement;
- (iv) Prepare various modules for training of the WUASU staff to (a) mobilize beneficiaries to organize new WUAs in area where none exists and assist them to organize on hydrological boundaries, (b) reorganize existing WUAs on hydrological boundaries, (c) train and guide the WUAs in water measurement, on-farm water management, running WUAs, and record keeping of financial and office proceedings;
- (v) The WUASU staff will also be trained to help WUAs undertake O&M efficiently which would include (a) assistance in preparation of annual O&M plans, and (b)

- undertake routine maintenance, preventive maintenance, deferred maintenance; and modernization of works during routine maintenance;
- (vi) On financing, the WUASU staff will be trained to help WUAs in (a) preparing water indents, (b) keeping water delivery records, (c) preparing bills for irrigation service fees and WUA service charges, (d) collecting receivable, issuing receipts, and keeping record of all receipts and expenditure, and (d) keeping record of the inventories; and
  - (vii) Together with other consultants under this component, prepare overseas study tour which would include WUASU staff as well.

### CONSULTING SERVICES FOR FARM MANAGEMENT AND WATER USE CAPACITIES DEVELOPMENT (OUTPUT 3)

1. **General Scope of Work.** The services of a nongovernment organization (NGO) with possible university specialists will be hired to facilitate the Agency for Land Reclamation and Irrigation (ALRI), executing agency (EA) of the project, in implementing the following three components of Output 3.

- (i) Demonstration to promote profitable farm management and efficient water use. It includes promotion of (a) improved seeds, (b) efficient farm operations and management, (c) balanced use of agricultural inputs, (d) high-efficiency irrigation system, and (e) promotion of value addition and value chain. It will also conduct periodic short training session to introduce new practices and technologies employed under the project;
- (ii) Production of high-quality seeds; and
- (iii) Establishment and possible reorganization of water users' associations (WUAs), and capacity development of WUAs and beneficiaries.

2. The required consulting services and scope of services are given in the following paragraphs.

3. **Farm Management Specialists (international: 4 person-months, national: 18 person-months).** This specialist (and in his/her absence the national farm management specialist) will be the Team Leader and will manage the overall components (including arrangements for renting of vehicles and farm equipment where required) together with other specialists. The specialists will design, manage, administer, and disseminate results of the demonstration plots and train the farmers. Specifically, their tasks will be:

- (i) Together with seed specialists, select crops, their varieties, farming systems, farm operations, crops inputs and methods of irrigation for demonstration giving priority to new crops and technologies and those with high potential of improvement;
- (ii) Decide regarding distribution of various demonstration variable in various parts of the project area, and their distribution between gravity- and pump-fed systems;
- (iii) Together with high efficiency irrigation specialist, select farms and the crops for demonstration of the high efficiency irrigation system in the pump-fed systems;
- (iv) Selection of farmers where demonstration will take place, designing share of responsibilities of the farmers and the project, and finalization of agreements;
- (v) Train the selected farmers in keeping proper records relevant to the demonstration farms and keeping accounts (e.g., develop balance sheet and its evaluation and assessment);
- (vi) Prepare technical specifications for the equipment to be procured for demonstration plots, and the agricultural machineries to be procured for suitable and resourceful farmers (i.e., seed growers), if necessary, with the help of other specialists, and assist the PMO in procurement;
- (vii) Where farm equipment needs to be rented and agricultural service providers are sought, prepare specifications, make suitable arrangements for renting and obtaining services, finalize the rates and schedule for their use, enter into



- contracts with the potential suppliers and service providers, and monitor and certify their use for payment;
- (viii) Prepare design for seed storage bins and coordinate with the implementation consultants for their contract award and construction;
  - (ix) Manage timely inputs from the project, and monitoring inputs and management by the farmers;
  - (x) Facilitate and monitor proper recording of the input, crop development, yield, and other information which may be considered necessary;
  - (xi) Disseminate results of the demonstration farms and any improvement which could be incorporated in future crop production;
  - (xii) Using the results of the demonstration farms, train the project area farmers on improved farm management practices; and
  - (xiii) With the seed specialist, develop the system of reproduction and redistribution of the seeds that recipient farmers will return to the project one-and-a-half times, in principle the seeds they received for further multiplication.

**4. High Efficiency Irrigation Specialist (international 2 person-months, national 12 person-months).** This specialist will:

- (i) Together with farm management specialists, select the type of crops suitable for high efficiency irrigation system, and schedule its distribution during the implementation period for demonstration in the pump-fed project area;
- (ii) Together with farm management specialists, prepare an implementation plan with shares of farmer's and project's responsibilities;
- (iii) Prepare a complete design of the proposed high efficiency irrigation system(s), prepare their technical specification, estimate costs, and facilitate procurement and installation of the systems at the selected farms;
- (iv) Monitor performance of the systems during the growing period and rectify any problems encountered;
- (v) Ensure proper keeping of demonstration farms records which may be of interest to other farmers who may like to install the system on their farms;
- (vi) Disseminate results of the demonstration farms and any improvement which could be incorporated in future crop production; and
- (vii) Monitor, update, and evaluate the conveyance and field application irrigation efficiencies (also called water use ratio) in the CIS area, and in various parts of the project area segregated by the gravity- and pump-fed areas using the flow measurement data, and the remote sensing technology employed under the project preparatory technical assistance in the project area and the crops grown. This will be compared with the baseline data (indicated in the design and monitoring framework) produced based on ALRI's records and remote sensing technology. The cost to employ the remote sensing technology is available in the survey and study line item of the consultant contract. Calibration of results obtained by remote sensing with those obtained by actual field observation will facilitate wide use of the efficient and economical way of using remote sensing for estimating field efficiency in other parts of the country.

**5. Seed Specialist (international 4 person-months, national 18 person-months).** The tasks of this specialist are to:

- (i) Prepare a list with technical specifications of field equipment and equipment required for modernization of seed laboratories in Hamadoni, Farkhor, and Vose and facilitate their procurement and installation;
- (ii) Train the laboratory staff on the use of laboratory equipment and procedure for certification of the seed;
- (iii) With due consideration to availability, importance, potential, suitability of the agro-climatic conditions of the project area, and need for promotion; select the crops and varieties for which seed need to be produced at the project area;
- (iv) Identify suitable sources for procurement of foundation seed of the selected crops and varieties and facilitate procurement;
- (v) Select suitable and resourceful farmers, preferably with previous record and experience of growing seeds for seed production in the project area;
- (vi) Prepare contracts with clearly laid down conditions, responsibilities, and liabilities of both parties;
- (vii) Sign contracts with selected farmers for production of seeds;
- (viii) Prepare design and assist the bidding and construction of seed storage bins at selected seed growing farms;
- (ix) Train the selected seed grower on various steps and precautions to be taken, recording of information, and monitoring of various stages;
- (x) Monitor crop growth and advice any remedial/corrective measures that must be taken to ensure the quality and targeted yields; and
- (xi) Monitor the quality of seed in the seed testing laboratory and pack the certified seed with certification for distribution among the project area farmers.

**6. Institutional Development Specialist (international 1 person-month).** The specialist shall have (i) rich relevant technical experiences in relation to WUAs particularly in Central Asian countries, (ii) familiarity with WUA taxation issues, and (iii) experience in strengthening WUA operational, organizational, and financial management capacities. The tasks of this specialist are as follows:

- (i) Review the current legislation governing the organization and operation of WUAs in Tajikistan, the current institutional arrangement for their organization and training, taxation status, and their actual operation and historical performance;
- (ii) Identify legal, institutional, and operational constraints, and propose remedial measures; and
- (iii) The recommended remedial measures may include but not limited to those relating to amendments in the legal framework, changes in the status (like which may exempt them from taxation), write-off of previous liabilities to let them start with a clean slate, capacity development, curriculum and schedule of periodic trainings.

**7. Water Users Associations Training Specialists (international: 4 person-months, national: 18 person-months).** These specialists should have rich experience for strengthening WUAs particularly in Central Asia. They will work closely with and build capacity of the WUAs. Where more than one consultant is required for a task, the proportion of male and female staff will be equal. Their tasks would include the following.

- (i) Review the organization structure and geographic coverage of the existing WUAs and identify areas not covered by WUAs and those where WUAs have been organized on administrative rather than hydrological boundaries;

- (ii) Through community mobilizers, convey to the members of existing WUAs the benefits and motivate them to reorganize on hydrological boundaries;
- (iii) Through community mobilizers, motivate the communities to organize WUAs in parts of the project area where none exists currently;
- (iv) Identify capacity development requirements in light of technical, financial management, and organization of the WUA, and build their capacity using available resources;
- (v) Review current WUA membership fee and collection rate in each WUA's membership fee and irrigation service fee, by cash and in-kind; assess the required and current WUAs' tasks, and the available resources to identify the financial gap, and, with the community mobilizers, propose new membership fee, if necessary to sustain WUAs' tasks;
- (vi) Follow up with various government agencies on relevant recommendations of the institutional development specialist for better organized, and operational WUAs;
- (vii) Following recommendations of the institutional development specialist, prepare a detailed curriculum for training of the office holders and staff of the WUAs and a plan for implementation;
- (viii) Carry out training of WUA technical officials and staff in estimating water requirements and preparing indent for ALRI, timely and equitable distribution of water, measurement and water delivered, and keeping of record, preparation of bills for irrigation service fees (ISF), collection of ISF and WUA membership fee and maintaining records of all receipts and expenses;
- (ix) Carry out training of WUAs in preparing operation and maintenance plans and in carrying out regular, preventive, and emergency maintenance and repairs;
- (x) Specific training courses will be conducted to train the farmers on how to maintain the on-farm facilities on their farm and the joint maintenance of the inter-farm canals in the WUA coverage area;
- (xi) Carryout special training courses for accountant in book-keeping, maintenance of record and inventory, issuance of bill and receipts, and overall management of the accounts;
- (xii) With community mobilizers, carry out campaigns to WUAs members to inform the responsibility of WUA's members; and
- (xiii) Together with the farm management, high efficiency irrigation, and value addition and value chain specialists, carry out training sessions of the project area farmers on the choice of crops and their varieties, farm operations, agricultural input, post-harvesting operation, value addition and value chain, and marketing.

**8. Social and Gender/Community Mobilizing Specialists (national: 36 person-months for two mobilizers).** The community mobilizers will work closely with the farming communities (female community mobilizer with female farmers) to convey to them the benefits of community organization particularly on hydrologic boundary. Where more than one consultant is required for a task, the proportion of male and female staff will be equal. Their tasks would include the following.

- (i) Arrange farmer group meetings at the demonstration farms to disseminate results of the demonstration farms and any improvement which could be incorporated in future crop production;
- (ii) Arrange workshops to train the project area farmers on improved farm management practices;
- (iii) Facilitate dissemination of information through farmer groups, posters, brochures, print, and electronic media;

- (iv) Conduct consultations with local community associations for selection of farmers where demonstration will take place, designing share of responsibilities of the farmers and the project, and finalization of agreements;
- (v) Conduct consultations with local authorities, community associations, WUAs, and other NGOs to select suitable and resourceful farmers, preferably with previous record and experience in growing seeds for seed production in the project area;
- (vi) With the WUA training specialists, convey to the members of existing WUAs the benefits and motivate them to reorganize on hydrological boundaries;
- (vii) With WUA training specialists, motivate the communities to organize WUAs in parts of project area where none exists currently;
- (viii) With WUA training specialists, carry out campaigns to WUAs members to inform the responsibility of WUA's members;
- (ix) Implement required activities included in the gender action plan, monitor and evaluate achievements against targets in the plan, and report to the team leader; and
- (x) Work together with the WUA specialist in the establishment of WUAs in areas currently not covered, and reorganization of existing WUAs on hydrological boundaries.

**9. Value Addition and Value Chain Specialists (international: 3 person-months, national: 9 person-months).** The specialists will:

- (i) Identify areas of value addition keeping in view the crops grown in the project area, marketing situation, and potential of adoption in the community particularly women;
- (ii) Procure the equipment and material required for training of the selected initiative for value addition;
- (iii) Prepare a training program schedule keeping in view the time when potential trainees would be available, and carryout training;
- (iv) For promotion of value chain, identify potential areas suitable for value chain initiative keeping in view the comparative advantage of agro-climatic conditions of the project area in growing specific crops and interest of the potential investors;
- (v) After consultation with the government, project beneficiaries, and other specialists, zero in on few value chain areas for further perusal;
- (vi) Coordinate with potential international and national investors to gauge their interest;
- (vii) Hold a three-day conference preferably close to the project area with participation of the potential investors, government officials from relevant department, project area farmers, local administration, and ADB officials. The consultant would describe in detail the potential areas of value chain and would facilitate free communication among the participants; and
- (viii) A clearer picture of potential of value chain is likely to emerge at the end of the conference which could ultimately lead to contract farming and investment in the project area by various investors which would benefit all stakeholders.

**10. Monitoring and Evaluation (M&E) Specialist**

**11. <sup>1</sup> (national 18 person-months).** This specialist will work closely with the PMO M&E

officer in keeping track of the project performance and benefits. This specialist will:

- (i) Develop M&E dataset using baseline data and targets indicated in design and monitoring framework, GAP, and other project documents, and develop practical M&E tool and system for the use of consultant team members;
- (ii) Consolidate and update consolidated data collected from respective specialists;
- (iii) Evaluate the progress of achievement against each target, and keep informing the respective specialist for their remedial actions;
- (iv) If the initial data collected are substantially different from baseline data, inform the magnitude to the team leader for necessary action;
- (v) Develop M&E report periodically and report it to the PMO M&E officer.

12. The total cost is estimated at \$1,293,400.<sup>2</sup> Estimated cost and the financing plan are given in Table A3.1.

**Table A3.1: Cost Estimates and Financing Plan**

(\$'000)

Item	Total Cost
<b>A. Asian Development Bank (JFPR Grant)</b>	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (18 person-months)	450.0
ii. National consultants (111 person-months)	373.9
b. International and local travel	80.0
c. Reports and communications	25.0
2. Workshops, training, seminars, and conferences	78.0
3. Survey, study and design (M&E of water use ratio)	152.0
4. Miscellaneous administrative and support costs (vehicle rental and office administration)	50.0
5. Contingencies	84.5
<b>Total</b>	<b>1,293.4</b>

Source: ADB estimates.

13. The details of estimated costs are given in Table A3.2.

**Table A3.2: Details of Estimated Costs**

Specialist	Person-months	Rate (\$)	Total (\$)
<b>International</b>			
1. Farm Management Specialist	4	20,000	80,000
2. High Efficiency Irrigation Specialist	2	20,000	40,000
3. Seed Specialist	4	20,000	80,000
4. Institutional Development Specialist	1	20,000	20,000
5. Water User's Association Training Specialist	4	20,000	80,000
6. Value Addition and Value Chain Specialist	3	20,000	60,000
<b>Subtotal (A)</b>	<b>18</b>		<b>360,000</b>

<sup>1</sup> The cost of this item is shown as a separate item in the cost estimate and not in consultant input.

<sup>2</sup> The cost include the consulting services (\$0.98 million), survey, study and design (\$0.152 million), training and workshops (\$0.078 million) as indicated in Table 9 of the PAM, and contingencies.

Specialist	Person-months	Rate (\$)	Total (\$)
<b>National</b>			
1. Farm Management Specialist	18	2,700	48,600
2. High Efficiency Irrigation Specialist	12	2,700	32,400
3. Seed Specialist	18	2,700	48,600
4. Water User's Association Training Specialist	18	2,700	48,600
5. Social and Gender/Community Mobilizer (male)	18	2,700	48,600
6. Social and Gender/Community Mobilizer (female)	18	2,700	48,600
7. Value Addition and Value Chain Specialist	9	2,700	24,300
8. M&E Specialist	18	2,700	48,600
<b>Subtotal (B)</b>	<b>129</b>		<b>348,300</b>
<b>TOTAL (A+B)</b>			<b>708,300</b>
1. International and Local Travel			80,000
2. Per diem (international specialists)			90,000
3. Per diem (national specialists)			25,600
4. Reports and Communications			25,000
5. Workshops, trainings, conferences and seminars			78,000
6. Survey, study and design (M&E of water use ratio)			152,000
7. Miscellaneous administrative and support costs (vehicle rental and office administration)			50,000
8. Contingencies			84,500
<b>Subtotal (C)</b>			<b>585,100</b>
<b>GRAND TOTAL</b>			<b>1,293,400</b>

Source: ADB estimates.