Report and Recommendation of the President to the Board of Directors

Project Number: 48042-001
September 2016

Proposed Grant and Administration of Grant Islamic Republic of Afghanistan: Panj–Amu River Basin Sector Project

Asian Development Bank

CURRENCY EQUIVALENTS
(as of 9 September 2016)

Currency unit	–	afghani (AF)
AF1.00	=	$0.0149
$1.00	=	AF66.98

ABBREVIATIONS

ADB	–	Asian Development Bank
DAIL	–	Department of Agriculture, Irrigation, and Livestock
EU	–	European Union
ha	–	hectare
IMT	–	irrigation management and transfer
LARP	–	land acquisition and resettlement plan
MAIL	–	Ministry of Agriculture, Irrigation, and Livestock
MEW	–	Ministry of Energy and Water
NWNRDP	–	National Water and Natural Resources Development Program
O&M	–	operation and maintenance
PAM	–	project administration manual
RBA	–	river basin agency
SBA	–	sub-basin agency
WUA	–	water users' association

NOTE

In this report, "$" refers to US dollars.

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CONTENTS

PROJECT AT A GLANCE

1. Basic Data — **Project Number:** 48042-001

Project Name	Panj-Amu River Basin Sector Project	**Department /Division**	CWRD/CWER
Country	Afghanistan, Islamic Republic of	**Executing Agency**	Ministry of Finance
Borrower	Government of Islamic Republic of Afghanistan		

	2. Sector	**Subsector(s)**	**ADB Financing ($ million)**
✓	**Agriculture, natural resources and rural development**	Agricultural drainage	1.00
		Irrigation	23.00
		Rural flood protection	2.00
		Total	**26.00**

3. Strategic Agenda	**Subcomponents**	**Climate Change Information**	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Adaptation ($ million)	2.90
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns Natural resources conservation	Mitigation ($ million)	1.50
		CO_2 reduction (tons per annum)	500
		Climate Change impact on the Project	High
Regional integration (RCI)	Pillar 4: Other regional public goods		

4. Drivers of Change	**Components**	**Gender Equity and Mainstreaming**	
Governance and capacity development (GCD)	Client relations, network, and partnership development to partnership driver of change Institutional development	Some gender elements (SGE)	✓
Knowledge solutions (KNS)	Pilot-testing innovation and learning		
Partnerships (PAR)	International finance institutions (IFI) Official cofinancing		
Private sector development (PSD)	Promotion of private sector investment		

5. Poverty Targeting		**Location Impact**	
Project directly targets poverty	Yes	Rural	High
Geographic targeting (TI-G)	Yes		

6. Risk Categorization: Low

7. Safeguard Categorization **Environment:** B **Involuntary Resettlement:** B **Indigenous Peoples:** C

8. Financing

Modality and Sources	**Amount ($ million)**
ADB	**26.00**
Sovereign Project grant: Asian Development Fund	26.00
Cofinancing	**50.00**
European Union - Grant	50.00
Counterpart	**0.75**
Government	0.75
Total	**76.75**

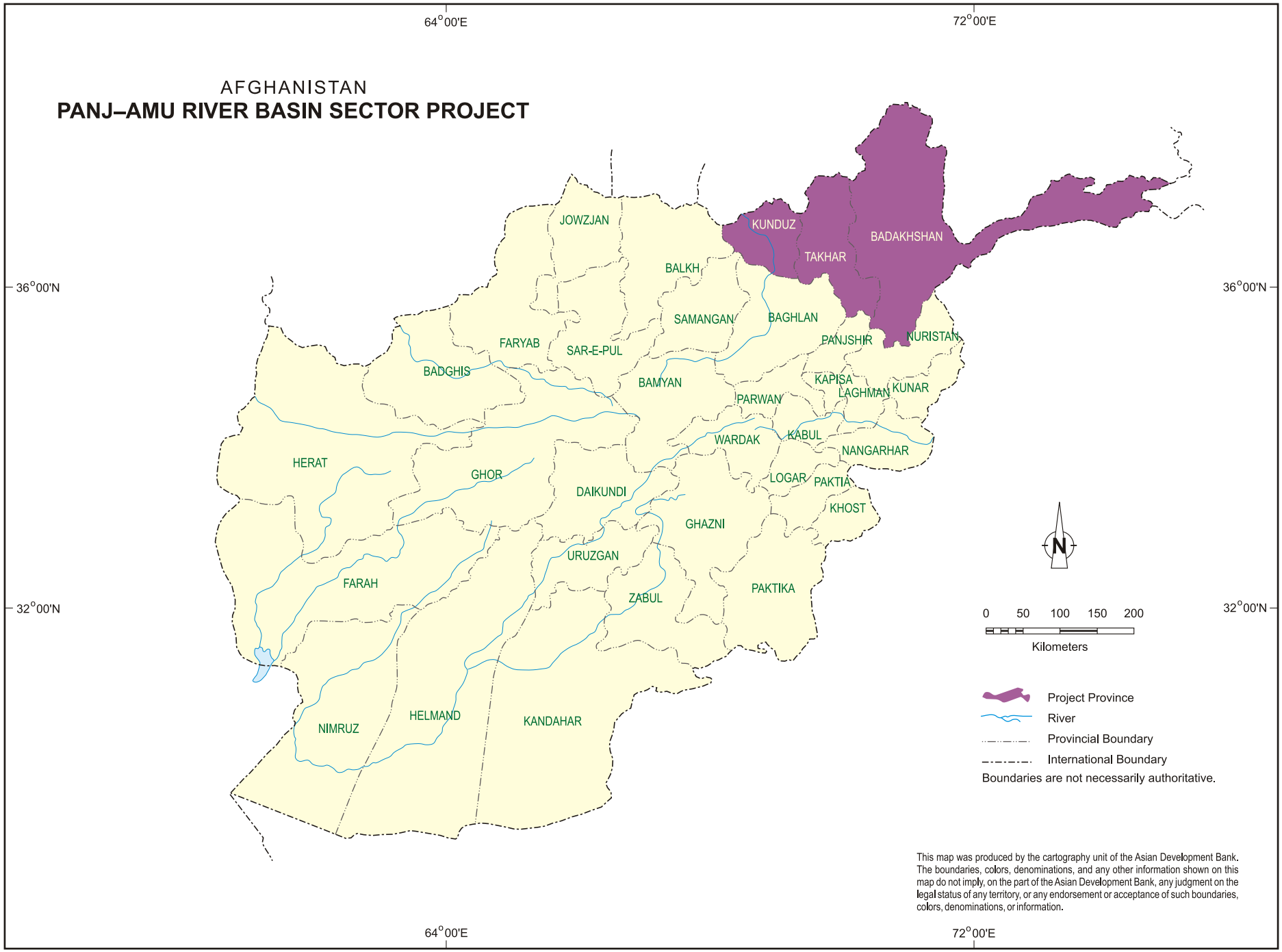
9. Effective Development Cooperation

Use of country procurement systems	No
Use of country public financial management systems	No

Source: Asian Development Bank

AFGHANISTAN

PANJ–AMU RIVER BASIN SECTOR PROJECT



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I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed grant to the Islamic Republic of Afghanistan for the Panj–Amu River Basin Sector Project.[1] The report also describes the proposed administration of a grant to be provided by the European Union (EU) for the Panj–Amu River Basin Sector Project. If the Board approves the proposed grant, I, acting under the authority delegated to me by the Board, approve the administration of the grant to be provided by the EU.

2. The proposed project will increase agricultural productivity in the Panj–Amu River Basin through improving access to and use of water at farm, scheme, and river levels.[2] It will support the government's strategy, which aims to increase per capita income and reduce poverty among rural and pastoral communities. The project will also improve food security, substitute imports for wheat, improve self-sufficiency, and increase exports of high-value products such as fruit and nuts. The project will also create more economic opportunities for agribusiness development, particularly for input suppliers and processors of agricultural produce. The project is included in the country operations business plan for Afghanistan, 2016–2018 of the Asian Development Bank (ADB).[3]

II. THE PROJECT

A. Rationale

3. **Sector issues.** Afghanistan is one of the least developed countries in the world. The poverty head count rate is 39% and 33% of the population is food insecure.[4] The average gross domestic product per capita during 2011–2015 was $634, making Afghanistan to rank 168th out of 183 countries reviewed by the World Bank.[5] Agriculture is Afghanistan's major source of livelihood, employs 79% of the national workforce, and is a significant source of national income. Agriculture contributes significantly to Afghanistan's gross domestic product, although this has decreased from 38% in 2002 to 22% in 2014.[6] The country's major staple crop is wheat, representing 60% of Afghans' daily dietary intake. With total production of 5.37 million tons in 2015, Afghanistan relies on import to meet its requirement with import dependency of 16% of total food demand and the average 2011–2015 level of dependency is growing at 11% per annum. Food insecurity is prevalent throughout the country, but most critical in the northern provinces of Badakhshan and Bamyan, where the food insecurity index is as high as 73%.[7]

4. Afghanistan is a dry country with low precipitation as snow falls in winter, while crops require water in the summer. Limited access to irrigation water is a key constraint to agricultural productivity, besides low-quality inputs and traditional agricultural practices. While the vast majority of Afghans depend on agriculture for living, only 12% (or 64.4 million hectares [ha]) of

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[1] The design and monitoring framework is in Appendix 1.
[2] The EU provided and administered project preparatory technical assistance for the feasibility study for the Panj–Amu River Basin Project.
[3] ADB. 2015. *Country Operations Business Plan: Afghanistan, 2016–2018*. Manila.
[4] Government of Afghanistan, Central Statistics Organization. 2016. *Afghanistan Living Conditions Survey, 2013–2014: National Risk and Vulnerability Assessment*. Kabul.
[5] World Bank. World Development Indicators http://data.worldbank.org/data-catalog/world-development-indicators (accessed on 30 June 2016).
[6] Food and Agriculture Organization of the United Nations. FAOSTAT. http://faostat3.fao.org/home/E (accessed on 10 May 2016).
[7] Central Intelligence Agency. 2014. *World Factbook, 2014–15* (52nd edition). Washington, DC.

the country's terrain is arable. The rain-fed area is currently 3.7 million ha and the irrigated area is 3.8 million ha, each representing about 5% to 6% of the total arable land. Of the total irrigated area, around 2.2 million ha are single or double cropped, with the balance of 1.6 million ha being irrigated if and when water is available, at intervals of 2 to 6 years.

5. Sporadic irrigation has been the primary cause for crop yields below the world average. For example, the average wheat yield was 2 tons/ha in 2013 (world average is 3.27 tons/ha) and the average rice yield was 2.5 tons/ha in 2013 (world average is 4.5 tons/ha) (footnote 6). Irrigated crop yields are significantly greater than rain-fed yields. For example, the irrigated wheat yield is 2.5 times that of rain-fed. With irrigated areas producing 69% of the total wheat output, irrigation water is a critical high-value factor for yield improvement. While water is available, improving access to irrigation on existing irrigation systems faces two critical constraints: (i) the inequitable distribution of water both between and within schemes, and (ii) the dilapidated and inefficient state of irrigation infrastructure.

6. **Climate change impacts.** Afghanistan is considered highly vulnerable to the adverse effects of climate change.[8] Current models indicate significant warming across all regions of the country and a decrease in precipitation, particularly spring rainfall.[9] The anticipated rise in average temperatures may result in higher frequency of floods and droughts. Improving the irrigation infrastructure proposed under the project—to protect irrigation schemes from flood events and to improve water distribution to downstream users, particularly in dry years, as well as watershed management—will address key climate change adaptation needs identified in the Intended Nationally Determined Contribution submitted to the United Nations Framework Convention on Climate Change.[10]

7. **Panj–Amu Basin overview**. The Panj–Amu Basin is located in the northeast of the country, on the border with Tajikistan, covering the provinces of Badakhshan, Baghlan, Kunduz, Takhar, and part of Bamyan. It is part of the Amu River Basin, parts of which lie in Afghanistan (30%), Kyrgyzstan (2%), Tajikistan (61%), Turkmenistan (1%), and Uzbekistan (6%). It is the second-largest of Afghanistan's five basins, covering 14% of the land area of Afghanistan. It has the highest mean annual surface water flow of all basins (22 billion cubic meters or 39% of the national total) and the highest precipitation (393 millimeters/year).[11] With a population of 4.2 million (15% of total), per capita water availability is the highest of all five basins, at 7,412 cubic meters per year, well above the water stress threshold. In spite of this, water is not always available in the right place at the right time (i.e., in the tail ends of canals and in downstream schemes in the summer) due to inadequate water distribution structures and water allocation regimes. While agriculture is by far the main water user in the basin (over 98% of water use), the basin has the lowest irrigated land area of all basins with 0.45 million ha under irrigation, accounting for 12% total 3.80 million ha of irrigated land countrywide. Of this, only 0.18 million ha is intensively irrigated while the remaining is irrigated only if and when water is available.[12] The basin is the largest wheat producer of all basins, with over 1.28 million tons (of which one million ton in irrigated area) and the largest rice producer with 263,000 tons produced in 2015.

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[8] Rated as extreme in the Verisk Maplecroft Climate Change Vulnerability Index 2015.

[9] M. Savage *et al*. 2009. *Socio-Economic Impacts of Climate Change in Afghanistan: A Report to the Department for International Development.* Stockholm: Stockholm Environment Institute.

[10] Government of Afghanistan. 2015. *Intended National Determined Contribution: Submission to the United Nations Framework Convention on Climate Change*. Kabul.

[11] Government of Afghanistan. 2015. *National Water Master Plan*. Kabul.

[12] Food and Agriculture Organization of the United Nations. 2016. *The Islamic Republic of Afghanistan: Land Cover Atlas*. Rome.

The basin also has significant potential for crop diversification, with a number of fruits, perennial crops, and vegetables already grown in the area. As such, irrigation development is a key factor for the basin to maintain its leading position in the production of staple food and its diversification into higher-value crops.

8. **Opportunities**. Improving water availability for irrigated agriculture, particularly to downstream and tail-end areas through improved water distribution, will have a significant impact on agricultural productivity, increasing yields of wheat and rice, in particular, which will result in improved food security, reduced poverty, and import substitution (saving scarce foreign exchange). Improved water availability will also increase crop diversification into higher-value crops, including vegetables, fruits, and nuts, which make up 52% of total national agricultural exports of $720 million. When compared with total imports of $7.96 billion, this is a narrow export base, which can be improved with project interventions.

9. **Government's sector strategy**. The strategic framework, approved in 2006,[13] guides the water sector operation. The policy indicates that (i) communities are responsible for the planning and management of basin water resources, supported by the Ministry of Energy and Water (MEW); (ii) water users' associations (WUAs) have a key role in rehabilitating small and medium irrigation schemes; and (iii) user-pay principle enables cost recovery. To support this policy, in 2009, a revised water law was enacted, which stipulates that (i) the river basin management approach for water resources planning would be followed, led by MEW through the establishment of sub-basin agencies (SBAs) and river basin agencies (RBAs); (ii) service providers (including WUAs) can charge for water delivery; and (iii) ownership and operation and maintenance (O&M) of schemes will be handed over to WUAs and irrigation associations. The National Water and Natural Resources Development Program (NWNRDP)[14] approved in 2010 acts as the government's sector development plan. The key implementing agencies of NWNRDP are MEW and the Ministry of Agriculture, Livestock, and Irrigation (MAIL). The program targets improved irrigation for 300,000 ha; establishing and strengthening SBAs, RBAs, councils, and WUAs; and restoring 28,000 ha of rangeland through community management. The National Irrigation Program, 2016–2025[15] builds on the NWNRDP and, with a budget of $1.5 billion, aims to achieve self-sufficiency in wheat through (i) improved irrigation services; (ii) enhanced extension services; and (iii) improved on-farm water management, operation, and maintenance.

10. NWNRDP implementation results as of 2015 suggest that the 2006 policy framework and the 2009 revised water law are appropriate for sector needs, but can be improved further by clarifying the roles and responsibilities of MEW and MAIL, and ensuring the long-term sustainability of infrastructure through regular maintenance. The proposed project supports this through the establishment and strengthening of WUAs, and development of O&M policy (para. 32). NWNRDP results also confirm the adequate institutional capacity of the implementing agencies (MEW and MAIL), which are also the implementing agencies of the project. MEW and MAIL have implemented a number of sector projects of similar nature. The project will provide additional capacity building in procurement and financial management, environmental impact assessment, and social analysis in accordance with ADB procedures.

[13] Government of Afghanistan. 2006. *Strategic Framework for the Water Sector*. Kabul.
[14] Government of Afghanistan. 2010. *National Water and Natural Resources Development Program*. Kabul.
[15] Government of Afghanistan. 2016. *National Irrigation Program*. Kabul.

11. The project is consistent with ADB's interim country partnership strategy, 2014–2015[16] which supports the government's strategic priorities. The project is aligned with ADB's water operational plan, 2011–2020;[17] and operational plan for agriculture and natural resources, 2015–2020.[18]

12. The project reflects lessons from previous and ongoing development partner-funded water sector projects in support of the government's sector policies and strategies. Key initiatives include the ADB-financed Water Resources Development Investment Program, 2009–2018; Panj–Amu River Basin Program, 2009–2016, financed by the EU; Irrigation and Watershed Management Program, 2012–2017, financed by the United States Agency for International Development; and World Bank-financed Emergency Irrigation Rehabilitation Program, 2004–2011; Technical Assistance for Water Sector Capacity Building, 2009–2011; Irrigation Restoration and Development Project, 2011–2017; and On-Farm Water Management Project, 2011–2016.[19] Key lessons call for the need to (i) increase government ownership, (ii) avoid setting up parallel management structures, (iii) set up realistic implementation plans, (iv) keep interventions simple yet effective, and (v) embed community-based water management within schemes for effective water distribution and long-term O&M.[20] The project follows the fragile and conflict-affected states approach in that it includes (i) sector financing, which allows flexibility in subproject selection and implementation given security concerns; (ii) streamlined project management office structure, which helps long-term programmatic sector interventions; and (iii) community participation in procurement and involvement of local elders throughout subproject cycles, which minimizes interruptions of works contracts. The project readiness is enhanced by the use of advance contracting and financing of taxes and duties on eligible project expenditures.[21]

B. Impacts and Outcome

13. The impacts of the project will be aligned with increased per capita income and reduced poverty among rural and pastoral communities.[22] The outcome will be increased agricultural productivity in the Panj–Amu River Basin.

C. Outputs

14. **Output 1: Water allocation and availability improved**. This output will include the following activities: (i) rehabilitating and upgrading head works and main canals in 21 priority irrigation schemes covering estimated total command area of 74,500 ha in the three northern provinces of Badakhshan, Kunduz, and Takhar;[23] (ii) establishing and strengthening the capacity of approximately 112 WUAs to operate and maintain conveyance infrastructure in these schemes;[24] and (iii) enhancing the capacity of MEW, RBAs, and SBAs for effective water allocation between schemes to benefit downstream users. In addition, support will also be

[16] ADB. 2014. *Interim Country Partnership Strategy: Afghanistan, 2014–2015*. Manila.
[17] ADB. 2011. *Water Operational Plan, 2011–2020*. Manila.
[18] ADB. 2015. *Operational Plan for Agriculture and Natural Resources: Promoting Sustainable Food Security in Asia and the Pacific in 2015–2020*. Manila.
[19] Development Coordination (accessible from the list of linked documents in Appendix 2).
[20] Lessons Learned and Synergies (accessible from the list of linked documents in Appendix 2).
[21] ADB. 2015. *Enhancing Operational Efficiency of the Asian Development Bank*. Manila.
[22] Government of Afghanistan. 2010. *Afghanistan National Development Strategy: Prioritization and Implementation Plan, Mid 2010–Mid 2013 (Volume 1)*. Kabul.
[23] A list of candidate subprojects is accessible from the list of linked documents in Appendix 2.
[24] Including strengthening of WUAs already setup in schemes through previous EU assistance.

provided to Afghan members of the Afghanistan–Tajikistan transboundary technical working group to prepare them for technical meetings and strengthen their ability to conduct negotiations regarding the setup and operations of the Pyanj River Basin Commission.

15. **Output 2: Command areas enhanced.** This output will include the following activities: (i) rehabilitating secondary and tertiary canals in schemes identified for improvement under output 1 to secure an integrated approach; (ii) establishing and strengthening the capacity of approximately 105 irrigation associations to operate and manage irrigation infrastructure in these schemes; and (iii) improving on-farm water management and agronomic techniques (such as land leveling, bed and furrow irrigation, and intercropping) with approximately 6,300 farmers having improved knowledge from 21 demonstration plots.

16. **Output 3: Watersheds properly managed and protected.** This output will include the following activities: (i) preparing a community-based natural resource management technical manual and guidebook; (ii) training staff of the departments of agriculture, irrigation, and livestock (DAILs) as master trainers who will conduct training of communities; (iii) identifying approximately 21 watershed and/or rangeland sites for restoration and protection; (iv) creating catchment management associations for these sites; and (v) preparing and implementing natural resource management plans for these sites. These activities will help restore 10,500 ha of forestry and/or rangeland in the vicinity of 21 prioritized schemes and protect irrigation structures under outputs 1 and 2 from flash floods and sedimentation.

17. Using an integrated approach on each of the 21 priority schemes, MEW will undertake the rehabilitation of headworks and main canals while MAIL will undertake the rehabilitation of secondary and tertiary canals, on-farm work, and watershed protection in the vicinity of the schemes. The project will provide technical resources to implementing agencies to ensure proper irrigation management and transfer (IMT). Specifically, the project will assist the drafting, negotiation, and conclusion of pre-construction O&M agreements and hand-over and/or IMT agreements between SBAs and WUAs (output 1), between DAILs and irrigation associations (output 2), and between DAILs and catchment management associations (output 3).

D. Investment and Financing Plans

18. The project is estimated to cost $76.75 million (Table 1).

Table 1: Project Investment Plan
($ million)

Item	Amount[a]
A. Base Cost[b]	
Output 1: Water allocation and availability improved	52.36
Output 2: Command areas enhanced	16.61
Output 3: Watersheds properly managed and protected	3.79
Subtotal (A)	**72.76**
B. Contingencies[c]	3.99
Total (A+B)	**76.75**

[a] Includes taxes and duties of $5.51 million to be financed by the Asian Development Bank.
[b] In mid-2016 prices.
[c] Physical contingencies have been estimated at 5% for all goods and services, except for subproject allocation where no contingency has been applied due to the sector approach. For three representative subprojects, a physical contingency of 10% was used to allow for difficult site access and limited reliability of locally determined unit rates. Price contingency for local currency costs is based on the following rates: 3.0% in 2016, 4.5% in 2017, and 6.0% thereafter; and for foreign exchange costs at 1.5% in 2016, 1.4% in 2017, and 1.5% thereafter; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.
Source: Asian Development Bank estimates.

19. The government has requested a grant not exceeding $26 million from ADB's Special Funds resources to help finance the project.[25] The EU will provide grant cofinancing of €45 million (equivalent to $50 million), to be administered by ADB. The government will contribute $0.75 million in the form of office space and utilities for project implementation. The financing plan is in Table 2 and further detailed in the project administration manual (PAM).[26]

Table 2: Financing Plan

Source	**Amount** ($ million)	**Share of Total** (%)
Asian Development Bank		
Special Funds resources (grant)	26.00	33.9
European Union[a]	50.00	65.1
Government	0.75	1.0
Total	**76.75**	**100.0**

[a] This is an estimated equivalent of €45 million, including the Asian Development Bank's administration fee, audit cost, and bank charges to the extent that these items are not covered by the interest and investment income earned on this grant, or any additional grant contribution by the European Union. Administered by the Asian Development Bank.
Source: Asian Development Bank estimates.

E. Implementation Arrangements

20. The implementation arrangements are summarized in Table 3 and detailed in PAM.

Table 3: Implementation Arrangements

Aspects	**Arrangements**		
Implementation period	December 2016–November 2022		
Estimated completion date	30 November 2022 (grant closing date: 31 May 2023)		
Management			
(i) Executing agency	MOF		
(ii) Implementing agencies	MEW and MAIL		
(iii) Project management office	In MEW, 11 staff. In MAIL, 10 staff.		
(iv) Project implementation office	RBA (4 staff, plus up to 2 staff in each SBA), and DAIL offices (4 staff each). These PIOs are embedded in existing government offices to strengthen institutional capacity and avoid setting up parallel implementation structures.		
Procurement[a]	NCB (Works)	16 contracts	$49.14 million
	NCB (Goods)	1 contract	$0.26 million
	Shopping (Goods)	16 contracts	$0.49 million
	CPP	32 contracts	$3.14 million
Consulting services[a]	QCBS (90:10, for implementation support consultancy)	1 contract (214 person-months international)	$4.29 million
	QCBS (90:10, feasibility study and detailed design)	1 contract	$3.20 million
	CQS (audit, RBA office design and supervision, topographic surveys, and safeguards monitoring)	10 contracts	$0.38 million
Advance contracting	Advance contracting is expected to recruit implementation support consultancy, feasibility study and detailed design, and works contract for three representative subprojects.		

[25] ADB will finance taxes and duties, which include the business receipt tax, estimated at 4.0%; fixed import tax of 2.0% to 7.0%; and custom duties of 2.5% to 16.0%. They do not represent an excessive share of the financing plan and are within applicable country partnership strategy parameters. ADB. 2005. *Innovation and Efficiency Initiative—Cost Sharing and Eligibility of Expenditures for Asian Development Bank Financing: A New Approach*. Manila.
[26] Project Administration Manual (accessible from the list of linked documents in Appendix 2).

Aspects	Arrangements
Disbursement	The grant proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time), and detailed arrangements agreed between the government and ADB.

ADB = Asian Development Bank; CPP = community participation in procurement; CQS = consultant qualification section; DAIL = Department for Agriculture, Irrigation, and Livestock; MAIL = Ministry of Agriculture, Irrigation and Livestock; MEW = Ministry of Energy and Water; MOF = Ministry of Finance; NCB = national competitive bidding; PIO = project implementation office; QCBS = quality- and cost-based selection; RBA = river basin agency; SBA = sub-basin agency.

[a] Universal procurement will apply. ADB. 2013. *Blanket Waiver of Member Country Procurement Eligibility Restrictions in Cases of Cofinancing for Operations Financed from Asian Development Fund Resources*. Manila.

Source: Asian Development Bank.

III. DUE DILIGENCE

A. Technical

21. The project is designed to ensure long-term sustainability. To make infrastructure last its economic life, a number of design measures are included in the project. First, gated headworks will protect other infrastructure in schemes by reducing flood damage from future climate change and variability. Second, for headworks and main canals, O&M will be delegated to WUAs and, where such works are outside WUAs' scope, SBAs will be responsible for O&M. Third, for secondary and tertiary canal infrastructure, O&M will be delegated to irrigation associations.[27] Fourth, watersheds adjacent to schemes will be rehabilitated and protected, reducing runoff, thus decreasing siltation of irrigation canals and lowering the risk of damage to infrastructure by flash flooding. Fifth, improved water distribution within and between schemes will be ensured through the better functioning of WUAs and irrigation associations for equitable water distribution within schemes (particularly middle and tail reaches receiving fair shares). The RBAs and SBAs working with the WUAs will ensure that water is distributed fairly between schemes. In so doing, downstream schemes will also experience benefits even if they receive no direct project investment. Finally, training farmers on improved on-farm water management and agronomic techniques (such as land leveling, bed and furrow irrigation, and intercropping) will also help leverage infrastructure investment by ensuring that irrigation water is used efficiently.

B. Economic and Financial

22. The project will benefit approximately 55,000 farming households (over 400,000 people). Project benefits are multifaceted. First, farm household income is expected to increase as a result of increased cropping intensities, higher crop yields, and crop diversification. The analysis of three representative subprojects indicates that incremental household incomes will have an average increase of $123 (for head reach) and $615 (for tail reach) per annum. Second, incremental crop labor will create an equivalent of 8,994 full-time rural jobs per annum valued at $8.7 million, and project construction works are expected to generate an equivalent of 1,700 full-time rural jobs for 6 years with an estimated value of $1.6 million. Most of this labor income goes to local workers drawn from poor households, which may or may not have land within the project command area. Third, more economic opportunities will be created for downstream (input suppliers) and upstream (processors of and market intermediaries for agricultural products) industries in the agricultural supply chain.

[27] Irrigation management and transfer to SBAs, WUAs, and irrigation associations will be effected through written agreements.

23. The calculated economic internal rates of return for all three representative subprojects are greater than the opportunity cost of capital of 12% in both the base case and the sensitivity cases; 18% for Laqi, 23% for Sharawan, and 24% for Seyaab. These representative economic indicators suggest that, overall, the project is economically viable. However, it is important to note that the rates of returns are highly sensitive to a decrease in project benefits and it is imperative that (i) the overall project and subprojects should be implemented as scheduled, (ii) agricultural extension support be financed under output 2 in parallel with the civil works implementation, and (iii) project costs be utilized within the range of estimated bills of quantities.[28]

C. Governance

24. Assessments have identified risks related to the country's public financial management system in the areas of internal control, procurement management, financial reporting, and external auditing.[29] Action plans have been agreed with MEW and MAIL to strengthen their financial management and procurement. The project management offices in MEW and MAIL, implementing ongoing ADB- and World Bank-financed projects, have adequate experience and will be able to effectively implement the project once incremental staff are recruited. ADB's Anticorruption Policy (1998, as amended to date) was explained to MOF, MEW, and MAIL. The specific policy requirements and supplementary measures are described in PAM.

D. Poverty and Social

25. **Poverty.** The project will benefit low-income and marginal smallholders (with household landholding of 1.0–2.0 ha). The target provinces have some of the highest food insecurity levels in the country: 73.0% for Badakhshan, 34.8% for Takhar, and 27.5% for Kunduz. Project interventions will increase production of wheat by 23,000 tons per year, significantly improving the food security of project beneficiaries. The production of rice will also increase by 25,000 tons per year. Incremental household income and jobs created during project implementation will significantly contribute to local poverty reduction.

26. **Social and gender.** The project is categorized as *some gender benefit*. Gender activities will be mainstreamed in the project. It will directly benefit farmers, including poor households, through increases in agricultural production and farm incomes. More equitable water distribution within and between schemes will reduce conflict over water and reduce income inequality. In setting up WUAs and irrigation associations, water users will be briefed on the importance of female participation. Natural resource management plans for watersheds will be prepared with due regard for the role of women related to income-generating activities. Training for women will be conducted by female trainers to ensure willingness to participate. The project will ease women's water-fetching and laundry chores with water access points installed along canals. In addition, structures such as offtakes will be adapted as footbridges along the canals to facilitate movement of humans and farm produce.[30]

[28] Economic and Financial Analysis (accessible from the list of linked documents in Appendix 2).
[29] Risk Assessment and Risk Management Plan; and Procurement Capacity Assessment: Ministry of Energy and Water; and Ministry of Agriculture, Irrigation, and Livestock (accessible from the list of linked documents in Appendix 2).
[30] Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2).

E. Safeguards

27. **Environment (category B).** An environmental assessment and review framework and initial environmental examinations for three representative subprojects were disclosed on ADB's website in July 2016. Site-specific environmental impacts may occur in each of these subprojects during the construction phase. Adequate mitigation measures are included in and will be implemented through environmental management plans. ADB conducted public consultations for the representative subprojects in February 2016. The review framework ensures project compliance with ADB's Safeguard Policy Statement (2009) by specifying the environmental safeguards procedures required for subprojects prepared during implementation. Each subproject will be screened for environmental classification. Subprojects classified category A will not be financed. Category B subprojects will require an initial environmental examination, including an environmental management plan, and incorporation of environmental management plan measures into civil works contracts. Category C subprojects will require summaries of environmental implications in their feasibility studies. Adequate resources have been allocated for environmental safeguards preparation, implementation, monitoring, and reporting.[31]

28. **Indigenous peoples (category C).** Afghanistan is inhabited by ethnic groups across its 34 provinces. None of these groups are considered indigenous peoples as defined in ADB's Safeguard Policy Statement for operational purposes.

29. **Involuntary resettlement (category B).** A land acquisition and resettlement framework for the entire project has been prepared to guide the preparation of subproject land acquisition and resettlement plans (LARPs). Subprojects classified category A will not be financed. Draft LARPs for three representative subprojects have been prepared, which will be updated once the detailed designs have been completed. The three draft LARPs confirm that there is no land acquisition requirement and no physical displacement. The only resettlement issues are the removal of an estimated 201 trees, mostly non-fruit variety. Right-of-way is a new concept in Afghanistan and these trees are apparently grown on the public right-of-way, although privately used by the users. The current security situation did not allow for a detailed socioeconomic survey, but will be carried out for updating the draft LARPs. Appropriate mitigation measures for compensation have been proposed in the entitlement matrix of the LARPs. The land acquisition and resettlement framework and the LARPs were disclosed on the ADB website in July 2016.[32]

F. Risks and Mitigating Measures

30. Overall project risk is assessed as medium. The integrated benefits and impacts are expected to outweigh the costs. Risks and mitigating measures are summarized in Table 4.[33]

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigating Measures
Insecurity delays or suspends field activities.	A participatory community-based approach will be followed. Contractors selected under NCB will be responsible for the security of their staff.
Insufficient available funds for system O&M may jeopardize infrastructure sustainability.	As interventions will primarily be for small-scale irrigation works, beneficiary maintenance (by WUAs and irrigation associations) will be possible. O&M costs will be covered by an irrigation service fee to be stipulated in IMT

[31] Environmental Assessment and Review Framework (accessible from the list of linked documents in Appendix 2).
[32] Resettlement Framework (accessible from the list of linked documents in Appendix 2).
[33] Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2.

Risks	Mitigating Measures
	agreements for each scheme. For works outside the scope of WUAs and irrigation associations, government O&M funds will be included in annual government budgets.
Consolidated government financial statements deviate from international accounting standards.	PMOs at MEW and MAIL are currently staffed with personnel experienced in preparing project cash-basis financial statements. There are plans to acquire and use standard accounting software for bookkeeping and reports.

IMT = irrigation management and transfer; MAIL = Ministry of Agriculture, Irrigation, and Livestock; MEW = Ministry of Energy and Water; NCB = national competitive bidding; O&M = operation and maintenance; PMO = project management office; WUA = water users' association.
Source: Asian Development Bank.

IV. ASSURANCES AND CONDITIONS

31. The government has assured ADB that implementation of the project shall conform to all applicable ADB policies, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the PAM and grant agreements. The government has agreed with ADB on certain covenants for the project, which are set forth in the grant documents.

32. **Operations and maintenance**. The government will ensure that, for structures outside the capacity of community-based O&M, adequate funds are allocated from the government's budget to finance the O&M activities of SBAs. For community-based O&M, the government will ensure that pre-construction O&M agreements are signed before any irrigation civil works commence, and hand-over and/or IMT agreements are signed before any irrigation civil works are commissioned, by and between SBAs and WUAs (for headworks and main canals), by and between DAILs and irrigation associations (for secondary and tertiary canals), and by and between DAILs and catchment management associations (for watershed protection and/or restoration), to ensure long-term sustainability. For the sector as a whole, the government will ensure that O&M and IMT policies—which highlight technical and financial responsibilities and strategies of the government and other stakeholders—are prepared, approved, and issued no later than 30 June 2017.

V. RECOMMENDATION

33. I am satisfied that the proposed grant would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approves the grant not exceeding $26,000,000 to the Islamic Republic of Afghanistan from ADB's Special Funds resources for the Panj–Amu River Basin Sector Project, on terms and conditions that are substantially in accordance with those set forth in the draft grant agreement presented to the Board.

Takehiko Nakao
President

29 September 2016

DESIGN AND MONITORING FRAMEWORK

Impact the Project is Aligned with: Increased per capita income and reduced poverty among rural and pastoral communities[a]			
Results Chain	**Performance Indicators with Targets and Baselines**	**Data Sources and Reporting**	**Risks**
Outcome Agricultural productivity in the Panj–Amu River Basin increased	a. Cropping intensities increased by 20% (baseline 2016: 148%; target 2023: 168%) in total command area of 74,500 ha b. Crop yields for wheat and rice increased by 7.0% (baseline 2016: wheat 3.0 tons/ha, rice 3.3 tons/ha; target 2023: wheat 3.3 tons/ha, rice 3.5 tons/ha)	a–b. PPMS and crop production surveys at the end of project	Insecurity delays or suspends field activities Insufficient available funds for system O&M may jeopardize infrastructure sustainability Consolidated government financial statements deviate from international accounting standards
Outputs 1. Water allocation and availability improved	By 2022: 1a. Headworks and main canals rehabilitated and upgraded in approximately 21 schemes (including approximately 84 domestic and 21 livestock access points) (baseline 2016: 0)	1a. PPMS and project progress reports	
	1b. O&M agreements signed by WUA for all completed works, or with government assurance of continued O&M (baseline 2016: 0)	1b. Signed O&M agreements	
	1c. 112 WUAs established and officially registered with MEW (baseline 2016: 0)	1c. MEW register	
2. Command areas enhanced	By 2022: 2a. Secondary and tertiary canals rehabilitated and upgraded in approximately 21 schemes (including approximately 21 domestic and 21 livestock access points) (baseline 2016: 0)	2a. PPMS and project progress reports	
	2b. O&M agreements signed by irrigation associations for all completed works (baseline 2016: 0)	2b. Signed O&M agreements	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	2c. Approximately 106 irrigation associations established and officially registered with MAIL (baseline 2016: 0)	2c. MAIL register	
	2d. Approximately 6,300 farmers (including women) adopted on-farm water management techniques (baseline 2016: 0)	2d. PPMS and project progress reports	
3. Watersheds properly managed and protected	By 2022: 3a. Approximately 10,000 ha of forestry and/or rangeland restored and/or protected[b] (baseline 2016: 0)	3a. PPMS and project progress reports	
	3b. Twenty-one catchment management associations established and registered with MAIL (baseline 2016: 0)	3b. MAIL register	
	3c. Twenty-one NRM plans prepared and implemented (baseline 2016: 0)	3c. Approved NRM plan and PPMS	

Key Activities with Milestones

1. Output 1: Water allocation and availability improved

1.1 Commence construction of three representative subprojects by Q2 2017.
1.2 Conduct feasibility and detailed design studies for other subprojects by Q3 2017.
1.3 Commence construction for other subprojects by Q4 2017.
1.4 Establish river basin model and put in use by Q3 2019.
1.5 Commission and hand over all works completed to WUAs or SBAs by Q4 2022.

2. Output 2: Command areas enhanced

2.1 Tender designed works by Q1 2018.
2.2 Train DAIL staff to become trainers by Q4 2017.
2.3 Establish approximately 21 crop production demonstrations by Q2 2018.
2.4 Commission and hand over all works completed to irrigation associations by Q4 2022.

3. Output 3: Watersheds properly managed and protected

3.1 Identify watersheds in the vicinity of subprojects by Q4 2017.
3.2 Prepare community-based NRM technical manual and guidebook by Q1 2018.
3.3 Prepare 21 NRM plans (plus one pilot PES plan) by Q2 2018.
3.4 Assist 21 catchment management associations in consultation, establishment, and registration by Q3 2018.
3.5 Complete restoration and/or protection of selected watersheds by Q4 2022.

Project Management Activities

Set up PPMS by Q4 2016.
Mobilize implementation support consultants by Q1 2017.
Purchase office equipment, furniture, and vehicles by Q2 2017.
Prepare project completion report by Q4 2022.

Inputs
ADB: $26.0 million (ADF grant) EU: $50.0 million (grant) Government: $0.75 million
Assumptions for Partner Financing Not Applicable.

ADB = Asian Development Bank; CDC = commune development council; DAIL = Department of Agriculture, Irrigation, and Livestock; EU = European Union; ha = hectare; MAIL = Ministry of Agriculture, Irrigation, and Livestock; MEW = Ministry of Water and Energy; NRM = natural resources management; O&M = operation and maintenance; PES = payments for ecosystem services; PPMS = project performance monitoring system; Q = quarter; SBA = sub-basin agency; WUA = water users' association.

[a] Government of Afghanistan. 2010. *Afghanistan National Development Strategy: Prioritization and Implementation Plan, Mid 2010–Mid 2013 (Volume 1)*. Kabul.

[b] All are in watersheds adjacent to irrigation schemes under outputs 1 and 2.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/RRPs/?id=48042-001-2

1. Grant Agreement: Special Operations
2. Grant Agreement: Externally Financed
3. Sector Assessment (Summary): Agriculture, Natural Resources, and Rural Development
4. Project Administration Manual
5. Contribution to the ADB Results Framework
6. Development Coordination
7. Economic and Financial Analysis
8. Country Economic Indicators
9. Summary Poverty Reduction and Social Strategy
10. Initial Environmental Examinations
11. Environmental Assessment and Review Framework
12. Resettlement Plan: Laqi Subproject
13. Resettlement Plan: Sharawan Subproject
14. Resettlement Plan: Seyaab Subproject
15. Resettlement Framework
16. Risk Assessment and Risk Management Plan

Supplementary Documents

17. List of Candidate Subprojects
18. Feasibility Study Report for Laqi Subproject
19. Feasibility Study Report for Sharawan Subproject
20. Feasibility Study Report for Seyaab Subproject
21. Detailed Economic and Financial Analysis
22. Detailed Analysis of Output 1
23. Detailed Analysis of Output 2
24. Detailed Analysis of Output 3
25. Lessons Learned and Synergies
26. Financial Management Assessment: Ministry of Energy and Water; and Ministry of Agriculture, Irrigation and Livestock
27. Governance Risk Assessment and Risk Management Plan
28. Procurement Capacity Assessment: Ministry of Energy and Water; and Ministry of Agriculture, Irrigation and Livestock
29. Project Climate Risk Assessment and Management Report
30. Project Operations and Maintenance Requirements and Sustainability Plan