



# Technical Assistance Report

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Project Number: 42091  
April 2008

## Islamic Republic of Afghanistan: Preparing the Water Resources Development Project (Financed by the Japan Special Fund)

Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 30 April 2008)

Currency Unit	–	afghani
AF1.00	=	\$0.02
\$1.00	=	AF49.03

## ABBREVIATIONS

ADB	–	Asian Development Bank
EIRRP	–	Emergency Infrastructure Rehabilitation and Reconstruction Project
MAIL	–	Ministry of Agriculture, Irrigation, and Livestock
MEW	–	Ministry of Energy and Water
MFF	–	multitranches financing facility
NVDA	–	Nangahar Valley Development Authority
O&M	–	operation and maintenance
R&U	–	rehabilitation and upgrading
PAM	–	project administration memorandum
PDF	–	project development facility
PPTA	–	project preparatory technical assistance
RBA	–	river basin agency
RETA	–	regional technical assistance
RFP	–	request for proposals
TA	–	technical assistance
TOR	–	terms of reference

## TECHNICAL ASSISTANCE CLASSIFICATION

<b>Targeting Classification</b>	–	General intervention
<b>Sector</b>	–	Agriculture and natural resources
<b>Subsector</b>	–	Water resource management
<b>Themes</b>	–	Sustainable economic growth, capacity development
<b>Subthemes</b>	–	Developing rural areas, institutional development

## NOTE

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

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<b>Director General</b>	J. Miranda, Central and West Asia Department (CWRD)
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## I. INTRODUCTION

1. The Islamic Republic of Afghanistan requested the Asian Development Bank (ADB) for a technical assistance (TA) to prepare a project to improve water resources management and irrigated agriculture. The concept paper for the TA was approved on 26 February 2008. A fact-finding mission visited Afghanistan from 5 to 24 February 2008 to prepare this TA in cooperation with the Government. The TA design and monitoring framework is in Appendix 1.<sup>1</sup>

## II. ISSUES

2. **Water Resources in Afghanistan.** The sound management and development of Afghanistan's water resources are essential for its sustained economic growth. Afghanistan is arid. Precipitation varies (i) geographically from 75 millimeters (mm) in the southwest to 1,170 mm in the northeast, with about 200–400 mm for most of the country, and (ii) temporally, with most falling between November and May, mainly in February, March, and April. This means that even though most of Afghanistan does not receive adequate precipitation for effective rain-fed agriculture, some parts of Afghanistan are prone to seasonal flooding due to runoff.

3. **Agricultural Economy.** Agriculture employs about two-thirds of the population and comprises up to half of Afghanistan's gross domestic product; however, the contribution varies considerably with yearly climatic conditions (49% in 2002–2003 but only 36% in 2004–2005). The seasonal variability and overall arid climate make irrigation necessary in many areas for reliable agriculture, and irrigated area agriculture accounts for about 80% of crop production. Almost 85% of Afghans live in rural areas and depend either directly or indirectly on agriculture for their livelihoods (see Appendix 2 for the Initial Poverty and Social Assessment). Improved access to irrigation is essential for economic growth and enhanced livelihoods.

4. **Irrigation Sector.** Afghanistan has approximately 6.5 million hectares (ha) of arable land, and by the mid-1970s an area exceeding 3 million ha received some form of irrigation.<sup>2</sup> Today, irrigated area has fallen closer to 2 million ha due to serious deterioration of irrigation systems from lack of resources for operation and maintenance (O&M) and periodic rehabilitation. The vast majority of irrigation, about 80%, is traditional systems that have been developed and managed by local communities. Although these rely on basic structures, a strong traditional management institution and a sophisticated system of water allocation developed, but this has eroded in recent years. Maintaining and strengthening this management system and the parallel rehabilitation and upgrading (R&U) of infrastructure and management methods are key challenges to improving the productivity of irrigated agriculture.

5. Modern irrigation systems under state control, many with storage capacity, were developed with foreign aid over the last 50 years and comprise most of the remaining irrigation systems (up to 15% of the total). These are valuable assets in need of rehabilitation and reform. One example, the Nangahar Valley Development Authority (NVDA) near Jalalabad, was established with assistance from the former Soviet Union under a collective farm model. It is currently operated by the Ministry of Agriculture, Irrigation, and Livestock (MAIL). The system has a 70-kilometer main canal that supplies water to over 25,000 ha of a mix of private and state farms in four different areas and has a 6,000 ha potential for expansion. All aspects of the irrigation system need R&U. Plans exist to divest many of the NVDA's assets and adopt a reformed management structure. The Government needs help developing a plan to restructure NVDA that moves some assets to more productive use in the private sector yet ensures

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<sup>1</sup> The TA first appeared in *ADB Business Opportunities* on 29 February 2008.

<sup>2</sup> Irrigation uses 95% of Afghanistan's developed water supplies.

sustainable management and O&M of the irrigation system.<sup>3</sup> Addressing this issue will not only provide a solution for NVDA but can provide a model for R&U and reforming the management of other modern irrigation systems, as well as for new irrigation systems that are likely to be developed with state and donor support. NVDA is an agricultural production base for the Jalalabad region, which has a high potential for the expansion of irrigated agriculture.

6. **Seasonal Flooding.** In many areas, flooding and bank erosion annually cause damage to irrigation systems and the loss of prime agricultural land, villages and other rural infrastructure, livestock, and human life. The problems are particularly acute in the upper Amu Darya, the river that forms the border between Afghanistan and Tajikistan. ADB is implementing the Pyanj River Basin Flood Management Project<sup>4</sup> regional technical assistance (RETA) to improve both countries' ability to address flood issues. However, significant infrastructure investment is also needed to remedy this problem throughout the country. Currently, Afghanistan has little capacity and no program to address flood management.

7. **Sector Institutions.** The Ministry of Energy and Water (MEW) is responsible for water resource management and development and irrigation.<sup>5</sup> Although significant improvement has resulted from donor-sponsored capacity development and participation in donor-financed projects over the last 5 years, MEW requires additional capacity building, especially regionally, including (i) sector planning, (ii) technical skills, and (iii) management and administration. Water resources and irrigation infrastructure is substantially underdeveloped, offering good potential for new projects, and the Government strongly supports launching new projects in addition to R&U of existing works. However, MEW needs assistance with (i) a strategic framework for sector investment, and (ii) the preparation and management of feasibility studies to international standards. To date, assistance to the sector has supported R&U of existing systems, mainly traditional ones. Despite these challenges, the Government is establishing a sound institutional foundation for the water sector with the restructuring of MEW and a draft national water law due before Parliament in the second quarter of 2008. The draft water law embodies international best practices including establishment of river basin agencies (RBAs) to manage water resources, but support will be needed to implement the law and its subsequent regulations.

8. **Donor Activities to Date.** ADB, European Commission, and World Bank are the primary sector donors. The European Commission has been implementing the Kundoz River Basin and Amu Darya Basin Projects in northeastern Afghanistan over the last 4 years. The projects combine irrigation system R&U, strengthening of community irrigation management, and creation of a river basin agency. The Emergency Irrigation Rehabilitation Project of the World Bank started in 2003, and the project provides irrigation R&U to key structures. ADB has an excellent relationship with all of its development partners, sharing information and coordinating approaches and regional demarcation. ADB's investments include the following<sup>6</sup> (i) Emergency Infrastructure Rehabilitation and Reconstruction Project (EIRRP),<sup>7</sup> (ii) Balkh River

<sup>3</sup> MAIL and the Ministries of Economy and of Finance have formed a committee to address this issue.

<sup>4</sup> ADB. 2008. *Technical Assistance to the Islamic Republic of Afghanistan and the Republic of Tajikistan for the Pyanj River Basin Flood Management Project*. Manila.

<sup>5</sup> *De jure* authority for managing irrigation canals has recently been transferred to MAIL, but *de facto* responsibility for irrigation still rests with MEW, and this appears unlikely to change soon. If a substantive change in management is pursued by the Government, ADB will alter its operations accordingly.

<sup>6</sup> ADB has also provided (i) ADB. 2002. *Technical Assistance to the Islamic Republic of Afghanistan for Capacity Development for Reconstruction and Development* (Component 1B, Capacity Building for Water Resources Management and Planning). Manila (TA 3874); and (ii) ADB. 2005. *Technical Assistance to the Islamic Republic of Afghanistan for Capacity Development for Irrigation and Water Resources Management*. Manila (TA 4716).

<sup>7</sup> ADB. 2003. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Islamic Republic of Afghanistan for the Emergency Infrastructure Rehabilitation and Reconstruction Project*. Manila (Loan 1997).

Basin Integrated Water Resources Management Project (Balkh River Project),<sup>8</sup> and (iii) Western Basins Water Resources Management Project.<sup>9</sup> The Western Basins project uses a comprehensive and integrated approach that includes the (i) establishment of an RBA and improved water management, (ii) R&U of irrigation infrastructure with agricultural support services, (iii) development of new infrastructure, (iv) strengthening of irrigation management, and (v) capacity development. The EIRRP provides R&U for traditional irrigation systems using a participatory approach in northern Afghanistan, and the Balkh River Project was designed to work in conjunction with the EIRRP to support basin management. Both of these projects have been going on for 4 years. Although they are closing in 2008, they have established an excellent foundation for work to continue in the north. However, an approach similar to that of the Western Basins project with an expanded scope and longer-term commitment of resources is required for greater development impact in the northern Afghanistan.

9. **Lessons.** ADB's experience has shown that adequate project resources are required to ensure all aspects of project delivery while working in parallel to develop government capacity. Close coordination with the Government, supported by frequent face-to-face consultation, is essential for both the Government and ADB to (i) manage expectations, (ii) quickly resolve implementation problems, and (iii) develop an effective program. Security issues are part of doing business in Afghanistan, but risks can be mitigated with proper planning, coordination with local authorities and communities, and adequate resources. Combating the opium economy requires a systemic approach that must be mainstreamed and incorporated into project design. While forward planning, analysis, and requisite due diligence are important for well-prepared projects, of equal importance are the expedient mobilization of resources and swift project implementation to address Afghanistan's needs and provide tangible development results. Given these concerns and the dynamic operating environment, a flexible approach is essential, backed by strong project preparation and management support that minimizes project gestation. In this regard, a multitranche financing facility (MFF) supported by a project preparation facility provides an excellent modality to deliver a steady stream of projects, taking advantage of opportunities as they arise, and providing assiduous monitoring and management.

### III. THE PROPOSED TECHNICAL ASSISTANCE

#### A. Impact and Outcome

10. The impact of the TA will be enhanced water resources management and development in Afghanistan. The outcome of the TA will be the preparation of an investment program for water resources and irrigated agriculture to be financed under an ADB MFF.<sup>10</sup>

11. The TA will include the following: (i) a sector strategy, road map, and investment plan to guide ADB sector engagement consistent with MFF requirements; (ii) criteria for selecting program subprojects; (iii) feasibility level preparation of core subprojects to be financed under the MFF first tranche; (iv) detailed implementation arrangements; (v) establishment of a project development facility (PDF) to support the MFF program; (vi) an initial list of investments to be considered by the PDF; (vii) a program financing plan; (viii) institutional and policy analyses; (ix) due diligence for financial management, procurement, and safeguards according to ADB

<sup>8</sup> ADB. 2003. *Proposed Grant Assistance to the Islamic Republic of Afghanistan for the Balkh River Basin Integrated Water Resources Management*. Manila (JFPR 9060, financed by the Japan Fund for Poverty Reduction).

<sup>9</sup> ADB. 2005. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Islamic Republic of Afghanistan for the Western Basins Water Resources Management Project*. Manila (Loan 2227).

<sup>10</sup> While ADB's MFF policies currently do not support grant-financed tranches, an ongoing MFF mainstreaming exercise is anticipated to change this. Should this assumption not materialize by the time the RRP for the ensuing MFF is ready for Board consideration, the TA's outcome will be transformed to a sector or stand-alone projects.

guidelines, including as required a resettlement framework and draft resettlement plans, initial environmental examinations and/or environmental impact assessments, and indigenous peoples plans; (ix) options to mitigate poppy cultivation; (x) capacity assessments and development plans; (xi) terms of reference, requests for proposals, and short-listing for implementation consultants; (xii) workshops for stakeholders; (xiii) a program and project (first tranche) design and monitoring framework; and (xiv) a monitoring and evaluation framework.

## **B. Methodology and Key Activities**

12. The TA will prepare a strategy, sector road map, investment plan, and program for capacity development and institutional strengthening to support ADB engagement in water resources management and irrigated agriculture for the MFF program. The TA will also support investment preparation for core subprojects to be financed through the first tranche of the MFF, including the (i) bank erosion and flood management of the Amu Darya, (ii) Nangahar Valley Development Authority modernization, (iii) northern basins water resources, and (iv) sector strategy, capacity development and the PDF.

13. **Bank Erosion and Flood Management: Amu Darya.** The TA will investigate options and prepare recommendations for a program of investments to mitigate bank erosion and flood impacts initially focused on the Amu Darya. The analysis will include a thorough set of technical investigations and social, environmental, and economic assessments to develop selection criteria for flood and bank protection infrastructure. The TA will support feasibility studies for a sample range of interventions that can be replicated to protect prioritized assets and will develop a list of prioritized Amu Darya investments. TA consultants will liaise closely with the ADB team executing the Pyanj River RETA and together provide options to assist communities and local governments in flood management planning, mitigation, and emergency response. Opportunities for R&U of irrigation systems to be protected by bank protection works will also be evaluated and prepared. TA consultants working with MEW and other stakeholders will establish a unit within MEW to address flood management and bank protection throughout Afghanistan, which can help prepare and implement subsequent MFF subprojects.

14. **Nangahar Valley Development Authority Modernization.** The TA will provide recommendations for R&U of irrigation infrastructure and institutional reform of the NVDA. The R&U will address the (i) headworks, (ii) the main canal, (iii) distributary and tertiary canals and field channels, (iv) pump irrigation, and (v) drainage facilities *inter alia*. The TA will analyze on-farm water management and current cropping practices and agricultural returns, and recommendations will be made to increase productivity and/or provide needed assistance to farmers, including alternatives to poppy production. Analysis will be undertaken to consider the possible development of the 6,000 ha expansion area for commercial, industrial, residential, and agricultural purposes. The TA will undertake a thorough analysis of the proposed divestiture of NVDA assets and recommend options that ensure greater productivity and sustainable O&M and management of the irrigation system. The TA will recommend options to improve irrigation management on private farms that receives NVDA water. Reconnaissance of the Jalalabad area, including both existing traditional irrigation schemes and proposed new projects, will be undertaken to identify possible future investments in the region.

15. **Northern Basins Water Resources Development.** The TA will prepare a comprehensive, long-term program to expand the scope of ADB's work begun in northern Afghanistan along the lines of the Western Basins project. This will include recommendations for (i) completing ongoing works, (ii) R&U of traditional irrigation schemes, (iii) on-farm water management, (iv) agricultural support services, (v) alternatives to poppy production, (vi) improved water management, (vii) the development of an RBA, and (viii) capacity development

and institutional strengthening. The TA will prepare a program to identify and/or prepare storage and/or other large infrastructure projects for possible subsequent MFF financing.

16. **Sector Strategy, Capacity Building, and the Project Development Facility.** The TA will prepare a strategy, roadmap, and investment plan to guide ADB sector engagement and MFF investment. Importantly, the TA will provide recommendations to establish the PDF, which will oversee project identification, preparation (feasibility studies including safeguards), management, and administration for the MFF program. The TA will prepare a comprehensive and detailed capacity development program to establish core competencies to (i) ensure all subprojects in the first tranche can be effectively implemented and managed, (ii) prepare and manage subsequent subprojects and MFF tranches, and (iii) more broadly support the development of water resources and irrigated agriculture.

### C. Cost and Financing

17. The TA will be financed on a grant basis by the Japan Special Fund, funded by the Government of Japan. The total cost of the TA is estimated at \$1.875 million. The Government will contribute a local currency cost equivalent of \$75,000. Details of the cost estimates and financing are in Appendix 3. The Government has been advised that approval of the TA does not commit ADB to finance any ensuing project.

### D. Implementation Arrangements

18. The Ministry of Finance will be the Executing Agency, and MEW and MAIL will be the implementing agencies. MEW and MAIL will appoint subproject coordinators for each of the core subprojects to be located on site. MEW and MAIL will provide or arrange (i) office space and utilities, including telephone, electricity, heating, cooling, and water for the TA team in Kabul and the subproject locations; (ii) logistical support; (iii) technical services; (iv) maps and documents; and (v) workshops as required by the TA. A Government steering committee formed in June 2007 to oversee all ADB-supported water sector activities will oversee the TA.

19. The TA will be implemented over 17 months from the fielding of consultants, which is anticipated in June 2008. Feasibility studies and the draft final report are expected to be completed over 7 months. The TA will also support consultants for (i) loan processing missions and (ii) project readiness activities over the subsequent 10 months. ADB will recruit a team of consultants through a firm using a simplified technical proposal and quality-based selection procedures to provide 45 international and 24 national person-months of consulting services in water resources management, irrigation, engineering, economics, agriculture, environment, social analysis, resettlement, and institutional analysis, *inter alia*. The terms of reference for the consultants are in Appendix 4.<sup>11</sup> The TA will support up to 10 person-months of individual consultants' services as needed. The consultants will be engaged by ADB in accordance with its *Guidelines on the Use of Consultants* (2007, as amended from time to time), and ADB's procedures for recruitment of individual consultants. Procurement under the TA will be in accordance with ADB's *Procurement Guidelines* (2007, as amended from time to time).

## IV. THE PRESIDENT'S RECOMMENDATION

20. The President recommends that the Board approve the provision of technical assistance not exceeding the equivalent of \$1,800,000 on a grant basis to the Islamic Republic of Afghanistan for preparing the Water Resources Development Project.

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<sup>11</sup> Very little national consulting capacity exists, requiring the large international input. As it is very difficult to recruit high-quality consultants to Afghanistan, and a poorly prepared TA carries high risks if the planned infrastructure fails, a quality-based selection process is being used for consultant recruitment.

## DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p><b>Impact</b></p> <p>Enhanced water resources development and management in Afghanistan</p>	<p>Increased productivity of water in the Balkh River Basin by 10% and livelihoods in area improved by 10% by 2016</p> <p>Increased productivity of water in Nangahar Province by 10% and livelihoods in area improved by 10% by 2016<sup>a</sup></p> <p>Reduced loss of agricultural land and other assets to river erosion along the Amu Darya with 10% improvement by 2018</p>	<p>Monitoring by the Ministry of Energy and Water (MEW) and the Ministry of Agriculture, Irrigation and Livestock (MAIL)</p> <p>Production records of the Nangahar Valley Development Authority (NVDA)</p> <p>Monitoring, evaluation, and reporting by the project development facility (PDF) and review missions</p>	<p><b>Assumption</b></p> <p>Development and effective utilization of water resources continue to be of high priority to the Government.</p> <p><b>Risk</b></p> <p>Security declines throughout Afghanistan.</p>
<p><b>Outcome</b></p> <p>An agreed multitranche financing facility (MFF) for a medium-term program for water resources and irrigation development in Afghanistan</p>	<p>Signed memorandum between ADB and the Government of Afghanistan including the final technical assistance (TA) report, draft report and recommendation of the President, financing framework agreement, and first periodic financing request, within 9 months of fielding consultants</p>	<p>ADB TA review and loan processing missions</p> <p>TA consultant reporting</p> <p>Afghanistan Resident Mission reporting</p>	<p><b>Assumption</b></p> <p>The Government is a willing and capable partner in strategy development and supports the medium-term investment concept.</p> <p><b>Risk</b></p> <p>The Government is not able to reach internal consensus on strategy or investment package.</p>
<p><b>Outputs</b></p> <p>1. Strategy, sector road map, investment plan, and subproject selection criteria for prioritizing investments for ADB sector engagement consistent with MFF requirements</p> <p>2. Feasibility documents for three core subprojects prepared to support establishment of an MFF program</p> <p>2a. Bank Erosion and Flood Management Program: Amu Darya</p>	<p>Outputs confirmed by ADB and the Government within 8 months of fielding consultants</p> <p>Feasibility studies and supporting documentation confirmed by ADB, the Government and the beneficiaries within 8 months of fielding consultants</p> <p>Draft resettlement framework and plans, initial environmental examinations and/or</p>	<p>Documents prepared by TA consultants and subproject coordinators</p> <p>ADB TA review and loan-processing missions</p> <p>Afghanistan Resident Mission reporting</p>	<p><b>Assumptions</b></p> <p>Suitable core subprojects have been identified and can be satisfactorily prepared.</p> <p>Implementing agency staff and the assigned subproject coordinators are competent to support the TA consultants as required, generating sufficient support and involvement to achieve Government ownership of both the subprojects and the investment package.</p> <p><b>Risks</b></p> <p>Suitable consultants cannot be recruited due to security concerns.</p> <p>Political interference with regard to subproject selection criteria</p>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>2b. NVDA Modernization Program</p> <p>2c. Northern Basins Water Resources Program</p> <p>3. A capacity development program with criteria and candidate participants and programs identified to support project implementation and preparation and broader development of water resources and irrigated agriculture as a whole</p> <p>4. A plan to establish a project development facility (PDF) with detailed implementation arrangements, resource requirements, and MEW participation with counterpart staff specified to manage and prepare subprojects for the Government and the MFF program</p> <p>5. Project readiness program and supporting documents</p>	<p>examinations and/or impact assessments, and indigenous peoples plans as required according to ADB guidelines confirmed by ADB, the Government, and beneficiaries within 8 months of fielding consultants</p> <p>Program confirmed by ADB and the Government within 8 months of fielding consultants</p> <p>Plan confirmed by ADB and the Government within 8 months of fielding consultants</p> <p>Draft request for proposals (RFP) and short-listing for implementation consultants, draft project administration memorandum (PAM), and training program for MEW PDF staff confirmed by ADB and the Government</p> <p>RFP and training program in place within 8 months of fielding consultants, and draft PAM within 11 months of fielding consultants</p>		<p>and design, and inadequate levels of implementing agency participation and support in subproject analysis</p> <p>Worsening security concerns in subproject areas</p>
<b>Activities with Milestones</b>			<b>Inputs</b>
<p>1.1 Develop a sector strategy, road map, and investment plan —drafts by month 3 and draft final documents prepared and confirmed by the Government at loan fact-finding. Final documents by loan appraisal.</p> <p>1.2 Prepare subproject selection criteria—draft by month 2. Continuously review, refine and reconfirm throughout the course of the TA with final criteria confirmed by the Government at loan fact-finding.</p>			<p>ADB will provide \$1.8 million in TA financing supporting 45 international and 24 national person-months of consulting services, stakeholder workshops, engineering and social surveys, geotechnical</p>

<b>Activities with Milestones</b>	<b>Inputs</b>
2.1 Conduct technical, economic, social, and environmental investigations to prepare a report and feasibility study for the core subproject, Bank Erosion and Flood Management: Amu Darya. Investigations underway by month 1 of the TA, and the draft final report and feasibility study completed and confirmed by the Government at loan fact-finding. Final documents at loan appraisal.	studies, and providing necessary equipment for the TA.
2.2 Conduct technical, economic, social, and environmental investigations to prepare a report and feasibility study for core subproject NVDA Modernization Program. Investigations underway by month 1 of the TA, and the draft final report and feasibility study completed and confirmed by the Government at loan fact-finding. Final documents at loan appraisal.	The Afghanistan Government will provide subproject coordinators for each subproject along with supporting facilities and assistance to support the TA.
2.3 Conduct technical, economic, social, and environmental investigations to prepare a report and feasibility study for core subproject Northern Basins Water Resources Program. Investigations underway by month 1 of the TA, and the draft final report and feasibility study completed and confirmed by the Government at loan fact-finding. Final documents at loan appraisal.	Beneficiaries will provide time and input for consultation on all aspects of project design and due diligence.
2.4 Conduct due diligence investigations for safeguards including resettlement, environment, and indigenous peoples issues for core subprojects. Investigations started by month 2 of the TA. Draft resettlement frameworks, resettlement plans, initial environmental examinations, and indigenous peoples plans prepared and confirmed by the Government at loan fact-finding, with documents finalized by loan approval. Though none is anticipated, if an environmental impact assessment is required for a category A project, the draft assessment is to be completed by month 4 of TA, with an approved final assessment by loan negotiations.	
3.1 Assess capacity and prepare detailed capacity development plan. Assessments completed by month 5 of the TA and draft detailed plan prepared and confirmed by the Government at loan fact-finding. Final capacity development plan by loan appraisal.	
4.1 Work with MEW and development partners to develop planning and implementation arrangements for PDF. Draft PDF plan by month 5 of the TA. Draft of final PDF plan confirmed by the Government at loan fact-finding. Final PDF plan at loan appraisal.	
5.1 Prepare draft report and recommendation of the President, financing framework agreement, and first periodic financing request confirmed by the Government by loan fact-finding. Final documents prepared by loan approval.	
6.1 Prepare RFP with complete terms of reference for implementation consultants to be confirmed by the Government at loan fact-finding. Final RFP prepared by loan approval.	
6.2 Prepare draft PAM by loan negotiations. Finalize PAM by loan effectiveness.	
6.3 Develop training program for counterpart staff by loan approval.	

<sup>a</sup> Baseline data will be collected during TA. Improved water productivity reflects a 10% increase in the productive output from the same volume of water and reflect from higher fields from increased cropping intensity or irrigated area, or diversification to higher value crops.

ADB = Asian Development Bank, MAIL = Ministry of Agriculture, Irrigation, and Livestock, MEW = Ministry of Energy and Water, MFF = multitranches financing facility, NVDA = Nangahar Valley Development Authority, PAM = project administration memorandum, PDF = project development facility, RFP = request for proposals, TA = technical assistance.

## INITIAL POVERTY AND SOCIAL ANALYSIS

Country/Project Title: Afghanistan: Water Resources Development Project

Lending/Financing Modality:	<span style="border: 1px solid black; padding: 2px;">Multitranches Financing Facility</span>	Department/ Division:	<span style="border: 1px solid black; padding: 2px;">Central and West Asia Department Agriculture, Environment, and Natural Resources Division</span>
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### I. POVERTY ISSUES

#### A. Linkages to the National Poverty Reduction Strategy and Country Partnership Strategy

According to the latest United Nations' Human Development Report, Afghanistan ranks 171 from the top among 179 countries and is one of the poorest countries in the world. In 2007, the gross domestic product (GDP) per capita was about \$250 (excluding the opium economy), one of the lowest in the world. Social indicators are very low: gross primary school enrollment is 54% (40% for girls), life expectancy is 47 years, infant mortality is 115 per thousand live births, under-5 mortality is 172 per thousand live births, and 70% of the population is malnourished. Although accurate data is difficult to collect, various estimates place the number of poor at 60% to 80% of the population.

Agriculture employs about two-thirds of the population and comprises up to half of the GDP. However, the contribution varies considerably, mainly with variation in rainfall. Seasonal variability and an arid climate make irrigation necessary in many areas for reliable agriculture. Irrigated agriculture accounts for about 80% of crop production. Almost 85% of Afghans live in rural areas and depend either directly or indirectly on agriculture for their livelihoods. Therefore, the quick recovery of the agricultural sector will largely determine the rate of economic growth and poverty reduction. To achieve the Government's poverty-reduction goals, economic growth has to be accelerated and supported by a sustained increase of an estimated 5% per year in the agricultural sector.

Development of irrigation and water resources are crucial for sustained agricultural growth. However, Afghanistan's institutional capacity for water management and irrigation has deteriorated significantly over the last 30 years, along with existing irrigation systems and other water resources infrastructure. Many of the country's irrigation systems currently suffer reduced capacity or are completely inoperable. It is estimated that close to a million hectares of land that is potentially irrigable and was irrigated in the past now requires complete rehabilitation.

Afghanistan is prone to prolonged droughts, which can cause serious poverty shocks. A drought from 1999 to 2001 devastated the agricultural sector with a near total failure of rainfed crops. Many traditionally irrigated lands were deprived of water, which destroyed long-standing orchards, and livestock with their associated rural wealth were significantly reduced. By 2004, 70% of rural households had not yet fully recovered. To cope, 40% of rural families cut food consumption from already low levels, and many were forced to sell land for income, rendering them permanently worse off and more poverty prone. Another dry year in 2004 was estimated to have caused a 25% decline in cereal output. The estimated 16% GDP growth was revised downwards to 8%, and an additional 2.5 million Afghans faced food insecurity.

Water resources and irrigation feature prominently in Afghan development strategies. The Afghanistan National Development Strategy, which serves as the country's national poverty reduction strategy, emphasizes water resources as a key sector for poverty reduction with the overall vision to manage and develop water resources in the country to reduce poverty, increase sustainable economic and social development, improve the quality of life for all Afghans, and ensure an adequate supply for future generations. The development of water resources infrastructure was also a key feature of the Afghanistan Compact approved under the United Nations in 2006. The development of agriculture, primarily water resources and irrigation is one of three focal areas in ADB's country partnership strategy for Afghanistan.

#### B. Targeting Classification

1. Select the targeting classification of the project:

General Intervention    Individual or Household (TI-H);    Geographic (TI-G);    Non-Income MDGs (TI-M1, M2, etc.)

2. Explain the basis for the targeting classification:

**C. Poverty Analysis**

1. If the project is classified as TI-H, or if it is policy-based, what type of poverty impact analysis is needed?
2. What resources are allocated in the PPTA/due diligence?
3. If GI, is there any opportunity for pro-poor design (e.g., social inclusion subcomponents, cross subsidy, pro-poor governance, and pro-poor growth)?

**II. SOCIAL DEVELOPMENT ISSUES****A. Initial Social Analysis**

1. Who are the potential primary beneficiaries of the project? How do the poor and the socially excluded benefit from the project?

Beneficiaries of the Water Resources Development Project will include farmers who will earn more income from higher production gained from improved access to irrigation. Many of the farmers are poor, with smallholdings in traditional irrigation schemes. Some of largest irrigation benefits will go to farmers at the tail end of irrigation canals, who are often deprived of irrigation water and thus excluded from benefits. In addition to increased income, project benefits will include better food security, which is important for many families given the high rates of malnutrition in the country. Under the proposed multitranches financing facility (MFF) program, a substantial amount of irrigated land will be rehabilitated, bringing benefits to people in similar situations.

The beneficiaries of proposed flood protection along the Amu Darya, as part of water management under the project, live in an isolated area that is extremely vulnerable to flooding. Many of the people in the area have already suffered from flood damage and bank erosion and have lost farmland, access to irrigation, and other productive assets. These people and their families will benefit through mitigation of further damage to their assets and communities. Improved security from flooding will allow these communities to improve infrastructure as well as invest in and sustain their own productive ventures with greater certainty.

2. What are the potential needs of beneficiaries in relation to the proposed project?

The vast majority of Afghans depend either directly or indirectly on agriculture, and irrigated agriculture provides 80% of all agricultural production. To raise incomes and protect families from the poverty shocks of drought, reliable irrigation is required. The proposed project directly meets this need.

Residents in the upper Amu Darya Basin need flood management to protect land, irrigation systems, rural infrastructure, and other productive assets. The project will directly respond to the need for flood and bank protection.

3. What are the potential constraints in accessing the proposed benefits and services, and how will the project address them?

A potential constraint in accessing the proposed benefits from improved irrigation infrastructure is related to water management. At present, water distribution is managed through traditional organizations, headed by *mirabs*, and responsible for water allocation. Traditional community ownership of irrigation systems by communities gives them responsibility for operation and maintenance, working in cooperation with the *mirabs*. Despite these traditional institutions, there are sometimes conflicts in water distribution. In addition, elites may try to influence activities and works executed through a subproject for their own benefit. To mitigate this, all irrigation subprojects will include an institutional component to strengthen the *mirab* system and ensure that all irrigators are treated equitably. Under previous ADB irrigation projects in Afghanistan, procedures have been developed to mobilize and engage communities with regard to the civil works and other activities implemented regarding their irrigation system. Prior to the commencement of work, there has to be agreement to support the works among the majority of those to be affected. Water allocation agreements with all water users along a canal are also required before work can start. These same procedures will be replicated for irrigation subprojects under the proposed program. Techniques for community participation will also be used in the development of flood control works on the Amu Darya as well as all other interventions pursued under the program.

The selection of MFF subprojects could be subject to political interference that may not benefit the poor. To mitigate this, subproject selection will be guided by strict multidimensional selection criteria that include social considerations and benefits to the poor. These will be agreed with the Government, and subproject selection will be monitored throughout the program.

**B. Consultation and Participation**

1. Indicate the potential initial stakeholders.

Potential initial stakeholders will include (i) direct beneficiaries in the core subproject areas, (ii) local communities in the subproject areas, and (iii) national and local governments.

2. What type of consultation and participation (C&P) is required during the PPTA or project processing (e.g., workshops, community mobilization, involvement of non-government organizations and community-based organizations, etc.)?

The primary type of C&P required during the PPTA of core subproject beneficiaries and communities will be formal and informal community consultations in the field to discuss and determine project design. Workshops and seminars will be used for C&P with the Government to discuss and determine project design.

3. What level of participation is envisaged for project design?

Information sharing     Consultation     Collaborative decision making     Empowerment

4. Will a C&P plan be prepared?  Yes     No

**C. Gender and Development**

1. What are the key gender issues in the sector/subsector that are likely to be relevant to this project/program?

Typically women's direct participation in irrigated agriculture is limited, with the exception of some of the processing of harvested crops. They have traditionally been confined to household activities including taking care of children, home gardens, and livestock. Women's awareness of the role and function of water management is very limited, and they do not see themselves as taking part in water management decisions. Male stakeholders have limited perception of the relevance of women's involvement in agricultural activities or natural resource use. Women landowners are not normally involved in making decisions concerning the use of their land, or in accessing revenues resulting from use of that land. Land tenure arrangements tend to favor men, but for many irrigators (especially women) landownership is difficult. User rights are an important issue. Access to water is closely linked to land rights, but rights to land do not necessarily confer access to water, which is influenced by the location of plots, social and cultural pressures, and operational requirements in terms of timing and duration. Women have restricted access where social and economic conditions constrain their reaching distribution points. Other issues are women's access to and ability to attend training, access to information, and freedom to participate in program activities.

2. Does the proposed project/program have the potential to promote gender equality and/or women's empowerment by improving women's access to and use of opportunities, services, resources, assets, and participation in decision making?

Yes     No

A gender analysis will be conducted during the TA on such issues as the roles and responsibilities of women in irrigated agriculture, including production, processing, and marketing, and their control over land and water resources for agriculture. The analysis will look at women's roles and impact in flood management. The gender analysis will (i) identify project implications for women in terms of both opportunities and adverse impacts, (ii) recommend mitigation measures for negative impacts, and (iii) recommend strategies and activities to ensure that women benefit from the program. This analysis will be conducted by the gender specialist in the Afghanistan Resident Mission. It is expected that the ensuing project will promote equal opportunity for women to access the benefits derived from irrigated agriculture and other benefits from the project.

3. Could the proposed project have an adverse impact on women and/or girls or widen gender inequality?

Yes     No

<b>III. SOCIAL SAFEGUARD ISSUES AND OTHER SOCIAL RISKS</b>			
<b>Issue</b>	<b>Nature of Social Issue</b>	<b>Significant/Limited/ No Impact/Not Known</b>	<b>Plan or Other Action Required</b>
<b><u>Involuntary Resettlement</u></b>	Since the proposed core subprojects will consist of infrastructure rehabilitation, resettlement impacts are anticipated to be temporary and limited to the construction period. With regard to flood management, it is not anticipated that there will be major resettlement issues since the works will take place in areas already eroding. Any impacts should be temporary and limited to the construction period. However, the TA will support preparation of an MFF, so all subprojects and their impacts are not known.	Limited	<input type="checkbox"/> Full Plan <input checked="" type="checkbox"/> Short Plan <input checked="" type="checkbox"/> Resettlement Framework <input type="checkbox"/> No Action <input type="checkbox"/> Uncertain
<b><u>Indigenous Peoples</u></b>	Significant impact on indigenous peoples is not anticipated with regard to the core subprojects. However, the TA will support the preparation of an MFF, so all subprojects and their impacts are not known.	Not known	<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input type="checkbox"/> Indigenous Peoples Framework <input type="checkbox"/> No Action <input checked="" type="checkbox"/> Uncertain
<b>Labor</b> <input type="checkbox"/> Employment Opportunities <input type="checkbox"/> Labor Retrenchment <input type="checkbox"/> Core Labor Standards	No labor impacts are anticipated other than possible labor generation for local communities.	Not known	<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input type="checkbox"/> No Action <input checked="" type="checkbox"/> Uncertain
<b>Affordability</b>	No impacts anticipated	Not known	<input type="checkbox"/> Action <input type="checkbox"/> No Action <input checked="" type="checkbox"/> Uncertain
<b>Other Risks and/or Vulnerabilities</b> <input type="checkbox"/> HIV/AIDS <input type="checkbox"/> Human Trafficking <input type="checkbox"/> Others (conflict, political instability, etc.), please specify	No impacts anticipated	Not known	<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input type="checkbox"/> No Action <input checked="" type="checkbox"/> Uncertain
<b>IV. PPTA/DUE DILIGENCE RESOURCE REQUIREMENT</b>			
1. Do the TOR for the PPTA (or other due diligence) include poverty, social and gender analysis and the relevant specialist/s? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    If no, please explain why.			
2. Are resources (consultants, survey budget, and workshop) allocated for conducting poverty, social and/or gender analysis, and C&P during the PPTA/due diligence? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    If no, please explain why.			

**COST ESTIMATES AND FINANCING PLAN**  
(\$'000)

Item	Total Cost
<b>A. Asian Development Bank Financing <sup>a</sup></b>	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants	1,114.75
ii. National Consultants	66.00
b. International and Local Travel	60.00
c. Reports and Communications	15.00
2. Equipment <sup>b</sup>	15.00
3. Workshops <sup>c</sup>	5.00
4. Technical Work and Surveys <sup>d</sup>	135.00
5. Miscellaneous Administration and Support Costs	10.00
6. Vehicle Purchase and Running Costs <sup>e</sup>	245.00
7. Representative for Contract Negotiations	5.00
8. Contingencies	129.25
<b>Subtotal (A)</b>	<b>1,800.00</b>
<b>B. Government Financing <sup>f</sup></b>	
1. Office Accommodation	25.00
2. Logistical Support	25.00
3. Data Collection and Management	15.00
4. Workshop Facilitation	10.00
<b>Subtotal (B)</b>	<b>75.00</b>
<b>Total</b>	<b>1,875.00</b>

<sup>a</sup> Financed by the Japan Special Fund, funded by the Government of Japan.

<sup>b</sup> Anticipated equipment needs include computers (5), plotter (1), black-and-white printers (2), color printer (1), and copy machine (1). Equipment will be turned over to the Government upon closing of the technical assistance.

<sup>c</sup> Proposed workshops include an interim and final workshop in Kabul as a part of tripartite discussions with the Government and a few smaller workshops in the field at the core subproject sites.

<sup>d</sup> Technical work and surveys include (i) \$50,000 for topographical surveys, (ii) \$50,000 for geotechnical surveys, (iii) \$15,000 for enumeration for land acquisition and resettlement plans, and (iv) \$20,000 for social assessment surveys.

<sup>e</sup> One armored 4x4 sedan vehicle and four double-cab pickups. ADB is seeking agreement with the Government so that vehicles will be transferred to the ensuing project.

<sup>f</sup> In-kind counterpart funding from the Government of Afghanistan.

Source: Asian Development Bank estimates.

## OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

1. In addition to the technical inputs specified below, each specialist will support the team leader in (i) framing monitoring programs for the proposed works, (ii) identifying capacity-building requirements specific to his field of expertise, (iii) preparing comprehensive terms of reference (TORs) for the implementation consultants of the ensuing works, and (iv) drafting relevant sections in the feasibility report for the subprojects.<sup>1</sup>

2. **Water Resources Engineer and Team Leader** (international, 7 person-months). The water resources engineer and team leader will (i) direct and supervise the study and the feasibility reviews of the three subprojects, while managing the input of all specialists and ensuring the quality of all technical assistance (TA) outputs; (ii) contract necessary geotechnical drilling and materials testing, engineering and topographic surveys, socioeconomic baseline surveys, and resettlement enumeration based on the recommendations of the relevant team specialists and using the provisional sums provided; (iii) manage relationships with provincial and federal agencies and other stakeholders to ensure coordination and synergies among all concerned parties; (iv) jointly identify, with technical specialists, arrangements to implement the works of the three core subprojects and their operation and maintenance (O&M); (v) oversee, with input from the team, the development of TORs for the implementation consultants of the ensuing program; (vi) oversee the formulation and finalization of the feasibility reports for each of the three subprojects, complete with detailed TORs for the implementation consultants; (vii) oversee the development of monitoring procedures for the ensuing program; (viii) support the procurement specialist to develop the procurement plan for the first 18 months of ensuing program; (ix) conduct and/or coordinate an institutional capacity assessment of MEW, MAIL, and NVDA with regard to core subproject works and make recommendations to build capacity through the ensuing program to ensure effective implementation of the program and preparation of the subsequent subprojects; (x) coordinate with sector stakeholders to assess overall needs for capacity development related to water resources and irrigated agriculture; (xi) review sector policies, strategies, donor projects, and other relevant documents relating to developing the sector; (xii) work with MEW, World Bank, European Commission, and other major sector stakeholders to develop options for improving the quality of the planning process and selection criteria for water resources and/or irrigation projects; (xiii) suggest improvements to the preparation of high-quality reconnaissance, pre-feasibility, and feasibility studies that will support investment by ADB and others; and (xiv) develop a medium- to long-term sector strategy, sector roadmap, and investment plan, including works proposed for financing under subsequent tranches of the multitranche financing facility (MFF).

3. **Deputy Team Leader** (national, 7 person-months). The deputy team leader will (i) support the team leader as required in carrying out his TOR; (ii) recruit and manage local consultants and service providers; and (iii) facilitate the consultant team's interaction with local officials, landowners, and farmers' groups.

4. **Irrigation Engineer** (international, 6 person-months). The irrigation engineer will be involved in preparing the NVDA and NBWR subprojects and (i) review existing practices of traditional water or irrigation management and recommend improvements for scheme rationalization, scheduling, water control devices and structures, and training for MEW, MAIL, NVDA, *mirabs*, and farmers; (ii) adopt and recommend innovations as a part of the system design that will improve irrigation efficiencies and ensure equitable distribution of irrigation water throughout the commands; (iii) based on current and projected future cropping patterns, determine the consumptive use and crop water requirement for each crop to be grown and

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<sup>1</sup> In addition to the consulting inputs specified in the terms of reference, an additional 2 person-months of unallocated international consulting input and 15 person-months of national consulting input will be required.

based on present and projected conveyance and application efficiencies, determine irrigation water requirements at the head of the main, secondary, and representative tertiary canals; (iv) ensure that adequate flow measurement sites are available or provided throughout the command area to facilitate system management and monitoring; (v) assist the team leader regarding special considerations of a significantly increased water supply to the NVDA system from the Konar River via trans-basin diversion under the proposed Gambiri project and in evaluating the viability of developing lift irrigation on the NVDA proposed expansion area; (vi) develop alternative O&M regimes for NVDA to apply to main and secondary canals and recommend an optimal program clearly defining portions of the work to be directly carried out by NVDA and portions to be contracted or shifted to the responsibility of the water-users' associations or federations thereof; (vii) review the outputs to date under the Balkh River Basin Integrated Water Resources Management Project (Balkh River Project) and the Emergency Infrastructure Rehabilitation and Reconstruction Project (EIRRP) and make recommendations regarding new activities for water resources and irrigated agriculture development and management in the NBWR core subproject; (viii) review the tender documents and other materials prepared for the Bangala Weir and the development of all cross river regulatory works in the Balkh River Basin; (ix) scope a program to complete all required intake structures and other works; (x) building from the EIRRP and the Emergency Irrigation Rehabilitation Project of the World Bank, scope a program to develop smaller structures to complete the rehabilitation and upgrading (R&U) of traditional irrigation schemes in the Balkh River Basin and other northern basins; (xi) for both subprojects, prepare comprehensive plans and feasibility designs for R&U the headworks and main, secondary, and, where appropriate, the tertiary canals, including all associated control structures and supporting infrastructure for cross drainage, silt extraction, emergency escape, bridging, etc; and (xii) cost the packages of works for use by the project economist and an expenditure schedule including longer-term recurrent O&M costs.

5. **River Morphologist** (international, 1.5 person-months). The river morphologist will concentrate efforts on the Amu Darya subproject and (i) analyze historic trends in river development, including gradient, meander, and sediment regime; (ii) study the natural meandering of the river and predict future trends, enabling the river training engineer to focus treatment on those reaches at greatest risk; (iii) review existing flood and bank protection works in the project area to assess their effectiveness and suitability for replication under the subproject; (iv) using historic and recent mapping, assess satellite imagery, and local information, the extent to which anthropogenic interventions, including flood embankments or levees, have affected the recent development of the river; and (v) examine the type and tentative layouts of proposed interventions identified by the subproject team intended to deflect river flow in order to optimize their design and avoid undesirable impacts.

6. **Hydrologist** (international, 3 person-months). The hydrologist will contribute to preparing the Amu Darya and NVDA subprojects and (i) collect, verify, and analyze relevant hydrological and metrological data for the Amu Darya at various points and the Kabul River at the Darunta Barrage (all data should be checked, and missing or erroneous data should be regenerated using standard statistical methods); (ii) determine the median and 10%, 25%, 75%, and 90% exceedance discharges for each prediction point; (iii) relate the discharges along the Amu Darya at sites selected for bank protection works; (iv) review flood and bank protection works that have been constructed previously in the project area to assess their effectiveness and suitability for replication under the Amu Darya subproject to approximate water surface elevations or stages for the river training engineer to use in design; (v) review the Darunta Barrage operating records and establish the historical diversions to the NVDA and evaluate the effects, if any, of pond siltation at the Danuta Barrage on seasonal water availability to the NVDA; (vi) establish best estimates, based on historical data and the operating rules currently

placed on the barrage by MEW, of the 50%, 75%, and 100% dependable flow available for diversion to the NVDA canal at its head; and (vii) liaise with TOOSS AB Consulting Engineers, retained by MEW, to study the Gambiri irrigation network and possible supplementation of Kabul River flows into the Danuta Barrage by diverting water from the Konar River. Based on the best information available regarding the recommended Gambiri option, assess the additional inflows and, based on the recommended operating rules regarding power generation at Danuta, estimate the proportion of additional inflow available for diversion to the NVDA canal.

7. **River Training Engineer** (international, 3.5 person-months). The river training engineer input will be on the Amu Darya subproject and will (i) review flood and bank protection works that have been constructed previously in the project area to assess their effectiveness and suitability for replication under the subproject; (ii) help develop criteria for and prioritization of bank protection under the program of works in the ensuing project; (iii) conduct, in accordance with the selection criteria, field reconnaissance necessary to identify critical reaches suitable for inclusion in the priority treatment package under the proposed subproject; (iv) select the individual structure sites or representative sites and identify geotechnical drilling and testing and topographic survey requirements and, in conjunction with the geotechnical engineer, establish requirements for drilling and materials testing; (v) study the effectiveness of different types of structures, construction methodology, and materials and prepare a portfolio of site-specific and standard designs appropriate to the diverse physical conditions found along the river; and (vi) provide detailed cost estimates for the proposed works at the feasibility level.

8. **Geotechnical Engineer** (international, 1.5 person-months). The geotechnical engineer's input will be on the Amu Darya subproject and will (i) prepare for the structures proposed by the river training engineer a drilling, sampling, and testing program to quantify the bearing nature of the underlying alluvium and the availability and suitability of construction materials; (ii) supervise the drilling and testing work required to ensure quality consistent with sound geotechnical design; and (iii) assist the river training engineer in the foundation aspects of structural design for the riverbank protection works.

9. **Irrigation Water Management Specialist** (international, 3 person-months). The irrigation water management specialist will focus on the NVDA and NBWR subprojects and (i) observe and review the tertiary and field (on-farm) water management modalities and techniques currently practiced in both command areas; (ii) identify and cost tertiary water management packages and recommended extension and/or technology transfer mechanisms to relay these to *mirabs*, water-users' associations and individual growers; (iii) identify and cost on-farm water-management packages for the use of individual growers and recommend and cost suitable alternatives and develop extension and/or training programs for farmers on improved field channel layout and cross section, land leveling, and improved irrigation application practice for individual farmers; (iv) identify irrigation and water-management practices for orchard owners, including affordable drip and sprinkler systems complete with on-farm storage and pumping facilities, where appropriate; and (v) recommend cost-effective drip and sprinkler demonstrations for inclusion in both subprojects, incorporating larger-scale demonstrations on state farms in the NVDA command.

10. **Agronomist** (international, 2 person-months). The agronomist's input will be on the NVDA subproject and (i) identify major constraints faced by NVDA farms and private farm operators in the NVDA canal command; (ii) review the farming systems in place on NVDA farms and representative private farms from the head, with particular emphasis on improved production of wheat and horticultural crops; (iii) assist the irrigation engineer in a review of current and future cropping systems with respect to water requirements, with the objective of developing optimal strategies in light of expected improvements in water availability,

dependability, and distribution; (iv) evaluate existing arrangements for the provision of extension services to private farmers and identify effective modalities through which NVDA could better demonstrate best agricultural and irrigation practice; (v) provide the project economist with models of present and future cropping patterns, with and without the project, complete with yield and production projections for NVDA and private farms; (vi) examine in detail the olive production technology employed on NVDA farms and recommend improvements that could ensure profitability as well as assess the suitability of olive as a diversification option for private growers; and (vii) assist the team leader and irrigation engineer in assessing the viability of developing and lifting irrigation water to all or parts of the proposed NVDA expansion area.

11. **Social Assessment Specialist** (international, 3.5 person-months). The social assessment specialist will work on all three subprojects and (i) design, commission, and supervise the implementation of appropriate socioeconomic surveys in each subproject area; (ii) assess the resettlement aspects of proposed subproject works and develop a resettlement framework for a sector-like project for the subprojects and, if required after guidance from ADB, resettlement plans in accordance with ADB's *Involuntary Resettlement Policy* (1995); (iii) assess the presence of indigenous people and ethnic minority groups in each subproject area; (iv) prepare an indigenous people's development framework according to ADB's *Policy on Indigenous Peoples* (1998) and *Operations Manual* section on indigenous people<sup>2</sup> and, if required after guidance from ADB, prepare an indigenous peoples action and/or development plan in accordance with the approved framework; (v) review, in support of the institutional specialist, the proposed NVDA farm privatization proposals and assess their impact on social conditions and relations in the NVDA canal command and on NVDA employees; (vi) determine community responses to the proposed subproject works and formulate modalities for the active participation of the water-users' associations and their *mirabs* in the O&M of the completed works (this should include examination of willingness to pay); (vii) assist with the development of social screening criteria for subproject selection; and (viii) contribute to preparing a summary of a poverty reduction and social strategy.

12. **Gender Specialist** (national, 2 person-months). The gender specialist will be on all subprojects and will (i) develop an analysis of women's role in irrigated agriculture and water resources management activities, including work allocation, access to and control over resources, access to benefits, decision making, and status; (ii) assess the impacts on women of the full range of interventions to be supported under the core subprojects and program; (iii) develop and recommend strategies, mechanisms, and design features that will ensure that women fully participate in project activities and derive benefits from project activities, and that their interests are protected and enhanced through the program; and (iv) if appropriate after guidance from ADB, develop a gender action plan for the subprojects and/or program.

13. **Institutional Specialist** (international, 3 person-months). The institutional specialist will support the preparation of the NVDA and NBWR subprojects and will (i) review in detail the proposed NVDA farm proposals to divest assets and assess the impact on the (a) social fabric of the NVDA command area, (b) future operation and configuration of the irrigation system, and (c) future role and structure of NVDA; (ii) provide options and recommendations for the divestiture of various NVDA assets on the NVDA farms and for new management structures for NVDA and the farms; (iii) determine community responses in both subprojects to the proposed irrigation improvement works and formulate modalities for the active participation of the water-users' associations and/or *mirabs* in the O&M of the secondary and tertiary canals; (iv) review procedures developed under projects in Afghanistan and make recommendations regarding the participation of local communities including *mirabs* with regard to selecting, preparing, and

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<sup>2</sup> ADB. 2006. *Operations Manual*. Section F3/BP. Indigenous Peoples. Manila (25 September).

implementing civil works activities under the NVDA and Northern Basins Water Resources subprojects; (v) review the progress to date on establishing river basin agencies (RBA) in Afghanistan and assess the current status of work to establish the RBA under the Balkh River Project; and (vi) scope a program to establish an RBA and sub-basin councils in the northern Afghanistan.

14. **Environmental Specialist** (international, 2 person-months). The environmentalist will work on the Amu Darya and NVDA subprojects and will (i) prepare an initial environmental examination for both subprojects in accordance with ADB's *Environmental Assessment Guidelines* (2003) and, should the need be identified for a full environmental impact assessment for either subproject or for a specific component of either, prepare it in accordance with applicable ADB guidelines; (ii) propose any environmental mitigation measures deemed necessary, prepare the requisite environmental management and environmental monitoring plans, and provide full details regarding the cost of the required mitigation; (iii) work with the irrigation engineer and the irrigation agronomist with particular emphasis on the emerging problems of rising water tables and soil salinity and incorporate in the subproject frameworks provisions for optimal resource management to arrest and reverse these phenomena; and (iv) identify environmental issues related to the sector or features of the subproject requiring loan covenants to ensure appropriate resource management.

15. **Procurement and Financial Management Specialist** (international, 1.5 person-months). The procurement and financial management specialist will (i) use ADB procedures to conduct a financial management audit of MEW, MAIL, and NVDA and assess their existing guidelines and capacity for financial management and procurement; (ii) recommend strengthened procedures and guidelines and define a program for capacity development to ensure financial management standards adequate to meet ADB guidelines; (iii) review existing procedures for disbursement, fund flows, and approvals and recommend streamlined procedures for contracting and disbursement under the ensuring program; (iv) work with the team leader, project economist, and other specialists to finalize the procurement plan for the project and advance procurement activities under the project; and, (v) working with the PPTA team that will draft the TORs and the Government, prepare the procurement notices and requests for proposals and support short-listing by the Government in accordance with ADB's *Guidelines on the Use of Consultants* (2007, as amended from time to time).

16. **Economist** (international, 5.5 person-months). The economist will be involved in the preparation of all three subprojects and, will be (i) using inputs from the various specialists on the team, aggregate detailed feasibility-level cost estimates for each subproject using COSTAB (a version subject to prior agreement with ADB) and use the detailed cost tables to identify all costs directly related to generating project benefits; (ii) working with the project team, identify and quantify estimated benefits resulting from or damages foregone as a result of the proposed investments; (iii) undertake a detailed economic analysis of each subproject in accordance with the ADB's *Guidelines for the Economic Analysis of Projects* (1997), ensuring that the investment meets the viability requirements of ADB and the Government; (iv) identify the economic risks associated with the subproject and conduct a sensitivity analysis of them; (v) prepare, for typical farms in the improved irrigation commands and in areas protected from river erosion, with- and without-project farm budgets to assess the financial impact of the subproject investment on representative individual farming families (this should include examination of willingness to pay for system operation and maintenance); (vi) assess the impact of each subproject on poverty; (vii) work with the team leader to develop criteria for selecting riverbank protection interventions under the Amu Darya subproject; and (viii) evaluate with relevant members of the project team the financial position of NVDA and assess the impact of the project investment and associated reforms on NVDA's financial position.