



Concept Paper

Project Number: 45354-001
November 2011

Tajikistan: Building Climate Resilience in the Pyanj River Basin

I. THE PROJECT

A. Rationale

1. Tajikistan is one of the most vulnerable countries to climate change in Central Asia^{1,2}. The environmental legacy of the Soviet central planning, combined with crumbling infrastructure, increasing feminization of poverty, low debt sustainability and limited institutional capacity, threaten the sustainability of Tajikistan's economic, social and human development. Climate projections indicate that Tajikistan will experience higher temperatures, reduced rainfall and higher evapotranspiration with an increased frequency of extreme events such as floods and droughts³. These changes will exacerbate existing problems, including gender inequality of access to resources, and pose additional risks to the achievement of national development priorities. In addition, Tajikistan has limited technical, human, institutional and organizational capacity to integrate climate change risk in its development strategies, policies and programs. There are significant gaps in the understanding of the economic, social and ecological implications of climate change.

2. The Pyanj River basin (114,500 km²) lies within two administrative regions (oblasts), Khatlon and Gorno Badakhshan Regions, and 18 districts (rayons) comprising 115 communities (jamoats). With a population of approximately 1.27 million, it is the largest of the five principal basins of Tajikistan (Pyanj, Vakhsh, Kafernigan, Zerevshan, Syr Darya). The Pyanj River basin has a large range of altitude from 300-350 m in the semi-arid lowlands of southern Khatlon to more than 7000 m in the Pamir and Hindu-Kush mountains. It is also the bread basket of Tajikistan and contains a large portion of agricultural land. A study carried out with ADB's support under the first phase of the Pilot Program for Climate Resilience (PPCR) (TA 7599-TAJ: Climate Resiliency for Natural Resources Investments) has shown that the communities located in the Pyanj river basin are already experiencing extreme events. Over 360 climate-induced disasters were reported in the Pyanj river basin over the last two decades⁴. In the mountainous Gorno Badakhshan Region, droughts, avalanches, landslides, rockfalls and violent winds are routine events which disrupt social and economic life and damage houses, infrastructure and erode land. In addition, occasional but devastating flash floods are released when temporary glacial lakes, created by sudden glacier surges high in the Pamir Mountains, burst without warning (glacier lake outburst flood – GLOF). In the hills, lowlands and flood plains of eastern Khatlon Region, droughts caused by decreased snowfall, and mudflows and floods caused by intense spring rain occur. These hazards routinely destroy land, crops and infrastructure and, in the worst cases, lives.

3. Recent studies⁵ have shown that projected rise in temperature of up to 2° C by 2050 will result in glacial melt and early snow-melt. In Tajikistan, approximately one third of ice volume may melt over the 21st century⁶; however basin wide glacier melt contributions may continue to remain small when compared to natural runoff regime. The most significant climate change impacts will emerge from changes in the seasonality of runoff and increase in extreme events

¹ *Climate Vulnerability Monitor*, DARA 2010.

² *Adapting to Climate Change in Europe and Central Asia*, World Bank, 2009.

³ TA7599TAJ Report.

⁴ Statistics of the Committee of Emergency Situation under the Republic of Tajikistan.

⁵ TA7599-TAJ Report; Sigfried T. et al., *Will Climate Change Exacerbate Water Stress in Central Asia?* Climatic Change, 08 October 2011; *Adapting to Climate Change in Europe and Central Asia*, World Bank, 2009; *Intergovernmental Panel on Climate Change, 2007a: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the IPCC Fourth Assessment Report, M.L. Parry, O.F. Palutikof, P.J. van de Linden and C.E. Hanson, Eds. Cambridge University Press. Cambridge, UK and New York, USA;

⁶ Tajikistan's Second National Communications to the United Nations Framework Convention on Climate Change

such as droughts, floods and mudflows. The run-off peak is likely to shift from the current late spring/early summer towards a late winter/early spring runoff regime. This shift has significant repercussions for farming practices and water resources management because it leads to a major water deficit in the vegetation period. Increasing risks from hazards such as catastrophic flooding due to glacial lake outbursts, destabilizations of mountain slopes and more landslides will result in a progressive increase in economic losses and risk to the population, and reduce the ability of communities located in a river basin to move out of poverty. These adverse effects will be exacerbated by an increase in water demand resulting from increased evapo-transpiration and a projected 25 % population growth⁷.

4. Water infrastructure in the Pyanj river basin is generally in a state of disrepair. Irrigation systems need major repair, drinking water is often inaccessible. Planning and maintenance capacity at the jamoat (sub-district) and community level is very weak. Financial resources and subsector-specific development planning and operation & maintenance are absent. National and local institutions are weak and lacking planning and climate change risk management skills. In addition, the Pyanj river basin faces particular development challenges arising from the very high rate of out-migration by males (mainly to work in the Russian Federation) and the consequent prevalence of female-headed households. In addition to their caring and domestic responsibilities, women have to tend the family land and also try to earn some cash income. Several constraints hinder the ability of communities, particularly women, to increase their resilience to climate change. The main barriers include the lack of information on climate change impacts on water resources and farming practices; limited availability of financial resources to support changes; absence of risk transfer mechanisms and limited women's involvement in decision-making. Capacity-building and awareness-raising initiatives which are designed in ways accessible to women are essential, e.g. by holding information or training sessions courses at times which are convenient to them and can be fitted with their other responsibilities.

5. Building climate change resilience of communities along the Pyanj river basin was identified as a priority by country stakeholders in the extensive consultation⁸ that the government of Tajikistan conducted in partnership with ADB, the World Bank and European Bank for Reconstruction and Development since 2009, in compliance with the PPCR financing modalities⁹. Priorities identified include the need for a more coordinated and strategic approach to water resources management in the Pyanj river basin: (i) improved access to water resources through climate proofed infrastructure for irrigation, drainage, water supply and storage; (ii) increased resilience to climate extreme events through flood protection, early warning systems and risk transfer mechanisms; and (ii) improved access to information and financial resources in particular for women. The findings of the TA 7599-TAJ and field missions to the Pyanj river basin confirmed these priorities, reflecting the wide range of adaptation needs in the river basin.

⁷ UN World Population Database 2011

⁸ The consultations engaged over 300 stakeholders from government ministries (Ministry of Agriculture, Ministry of Economic Development, Ministry of Energy, Ministry of Finance, Ministry of Health, Ministry of Transport, Ministry of Water Resources and Land Reclamation, Committee for Environmental Protection, Committee of Emergency Situations, Committee of Women and Family Affairs), government agencies (State Hydrometeorological Services, Academy of Sciences), international organizations (AKDN, FAO, UNDP, WFP), donors (DFID, GIZ, EC, Swiss Cooperation, SIDA), civil society (Act Central Asia, ACTED, Christian Aid, OXFAM and a number of local NGOs) and most communities living in the Pyanj River Basin.

⁹ <http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/PPCR%208%20Financing%20Modalities%206%2015%202010%20Revised%20akjdk.pdf>

B. Impact, Outcome, and Outputs

6. The impact of the project will be improved livelihoods of Pyanj river basin jamoats (sub-district) vulnerable to climate variability and change. The project outcome will be that target jamoats in the Pyanj river basin are more resilient to climate variability and climate change, benefiting over a million people including the poor and women. The outputs as envisaged are: (i) climate-proofed infrastructure is operational in the communities, including irrigation, water supply, flood protection, forestation and water retention systems and technologies; and (ii) increased capacity of communities to respond to climate change, including strengthening of institutions and advisory services, early warning systems, micro financing and micro insurance.

7. These potential interventions for each output were identified through extensive consultations with government and non-government agencies, local stakeholders and communities in the Pyanj River Basin, and analytical work carried under TA 7599-TAJ during the first phase of the Pilot Program for Climate Resilience (PPCR).

C. Investment and Financing Plans

8. The tentative investment plan is summarized in Table 1. The Strategic Climate Fund will provide \$14.6 million on a grant basis. ADF financing from savings will be considered.

Table 1: Tentative Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank ^a	0.0	0.0
Strategic Climate Fund ^b	14.6	100.0
Total	14.6	100.0

^a ADF financing from savings will be considered.

^b Under the Pilot Program for Climate Resilience, administered by ADB. Additional \$400,000 will be provided by the Strategic Climate Fund for ADB's administrative costs

Source: ADB estimates.

D. Indicative Implementation Arrangements

9. Due to the multi-sectoral nature of the proposed project, the implementation arrangements of the proposed project will be determined during a project preparation technical assistance (PPTA) through extensive consultations with line ministries, local governments and communities. Likely Executing Agencies include the Ministry of Water Resources and Land Reclamation (MOWRLR), the Ministry of Agriculture (MOA) and the Committee for Women and Family Affairs. An inter-ministerial committee established under the PPCR coordination mechanism in August 2011 and chaired by the Deputy Prime Minister will provide overall guidance and support for project implementation.

10. All procurement to be financed under the project will be carried out in accordance with ADB's Procurement Guidelines (2010, as amended from time to time) and consultants will be recruited in line with ADB's Guidelines on the Use of Consultants (2010, as amended from time to time). A consulting firm will be recruited using Quality and Cost-Based Selection (QCBS) method based on a 90:10 quality-to-cost ratio. Advance contracting of consultants and procurement, and retroactive financing could be considered.

II. TECHNICAL ASSISTANCE

11. A project preparation technical assistance (PPTA) will be conducted to identify the most vulnerable communities, priority interventions and implementation arrangements. A participatory planning process with communities, civil society and other organizations working at the field level will be conducted to determine appropriate interventions in selected communities. The PPTA will also identify mechanisms for continuing consultation that enable local populations to be part of decision-making process.

12. The total cost of the TA is estimated at \$1.3 million, comprising \$450,000 from ADB TASF IV and \$750,000 from Strategic Climate Fund (SCF) on a grant basis. The government of Tajikistan will provide \$100,000 equivalent in kind for office space, office furniture, telephone, internet and counterpart staff.

13. ADB will engage a suitably qualified firm or a consortium of firms, comprising international and national consultants, recruited using quality- and cost-based selection (QCBS) method based on a 90:10 quality-to-cost ratio and following ADB's *Guidelines on the Use of Consultants* (2010, as amended from time to time).

III. DUE DILIGENCE REQUIRED

14. The following due diligence is included in the project preparatory technical assistance (PPTA).

- (i) Vulnerability, impact and adaptation. Identification of the most vulnerable communities to climate vulnerability and change (target communities), selection of priority adaptation measures (subprojects) from a basket of measures including climate proofed infrastructure for irrigation, water supply and flood protection, and capacity building programs in the target communities based on a cost-benefit analysis as well as participatory assessment.
- (ii) Technical. Technical aspects include engineering design of the selected climate proofed infrastructure sub-projects, estimation of costs for such investment.
- (iii) Economic. Economic viability and sustainability will be assessed by the PPTA in accordance with ADB's guidelines.
- (iv) Governance. Public financial management, procurement, anticorruption measures, policy and legal, capacity, and other institutional issues and mechanisms will be assessed by the PPTA in accordance to ADB guidelines and will be included in the Report and Recommendation of the President (RRP) and the project administration manual (PAM).
- (v) Poverty, gender and social. Poverty reduction and social impacts assessment, and a Gender Action Plan (GAP) will be developed by the PPTA and will be documented in the RRP and PAM.
- (vi) Safeguards. Safeguards assessments (environment, involuntary resettlement, and indigenous peoples) will be undertaken by the PPTA and will be documented in the RRP and PAM.

IV. PROCESSING PLAN

A. Risk Categorization

15. As per ADB risk categorization guidelines, the project is considered as a *low risk* category project. It is financially small and is category B from a safeguard point of view. The likely Executing Agencies have some experience and capacity to implement externally-financed projects, though capacity building will be required to strengthen their competence to implement climate change projects.

B. Resource Requirements

16. ADB staff will be involved in project preparation. Estimated staff requirement includes 9 person-month inputs from the ADB Mission Leader and other mission members. A PPTA will be needed for conducting the due diligence of the Project (Appendix 4).

C. Processing Schedule

Table 2: Proposed Processing Schedule

Milestones	Expected Completion Date
PPCR endorsement of TA	2 December 2011
TA Approval	9 December 2011
TA Commencement	I March 2012
Fact-Finding Mission	III – IV September 2012
Staff Review Meeting	IV October 2012
Grant negotiations	IV November 2012
PPCR endorsement of the Project Grant	II December 2012
Board consideration	IV January 2013

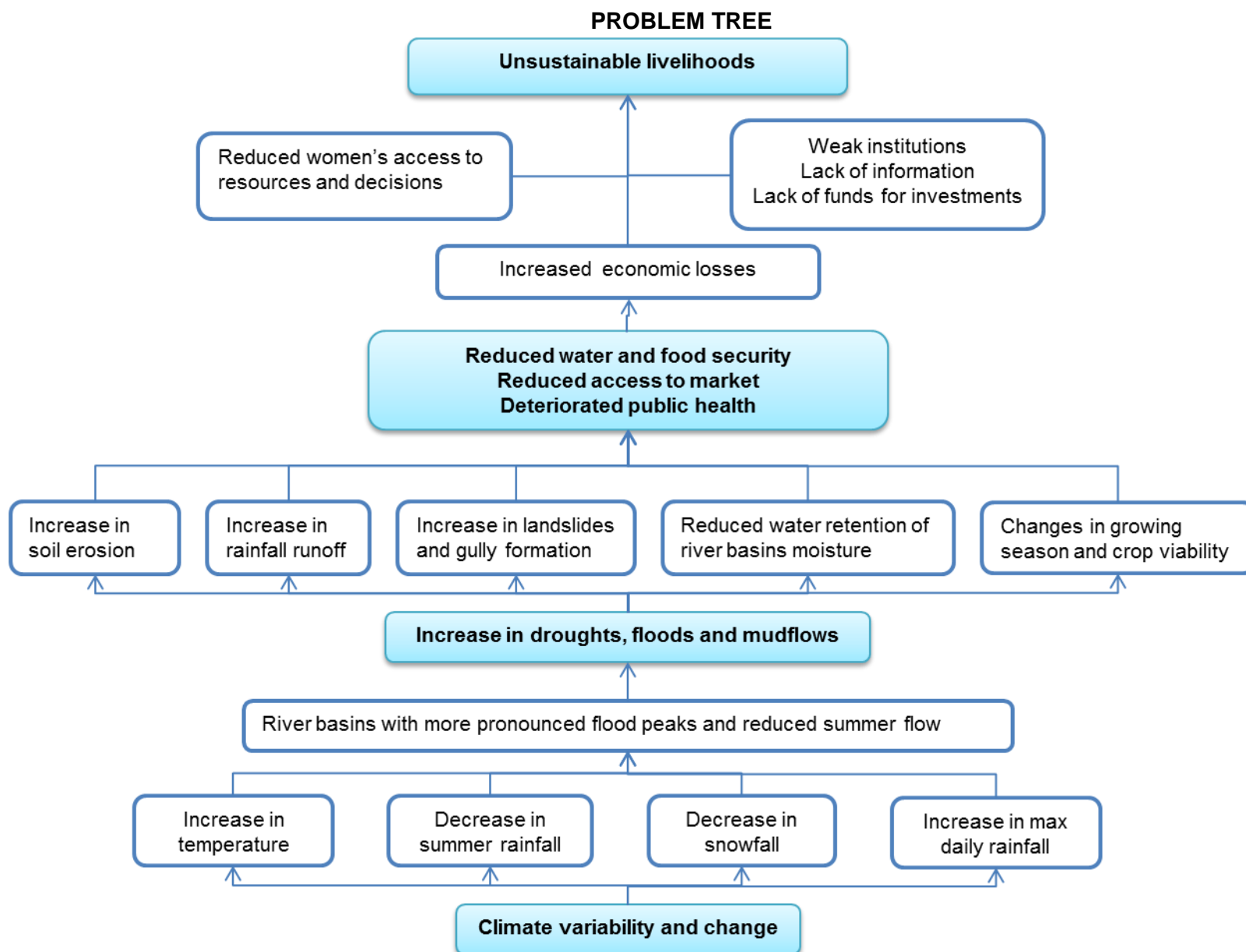
V. KEY ISSUES

17. There is significant support for the project from the government of Tajikistan. Relevant line ministries have been consulted and have contributed to the design of the project. However, the multi-sectoral nature of the project and the wide range of adaptation needs identified in the surveyed communities might require close collaboration of local government and jamoat administrations, and community organizations. In addition, climate change risks are not currently factored in to development priorities and have not been considered in the design of infrastructure in Tajikistan. For these reasons, significant capacity-building of the jamoat administrations and community organizations, and a monitoring system will need to be incorporated into Project design.

BASIC PROJECT INFORMATION

Aspects	Arrangements
Modality	Project grant
Financing	\$14.6 million provided by the Strategic Climate Fund under the Pilot Project for Climate Resilience. Potential ADF financing is being considered.
COBP/RCOBP	Draft Tajikistan Country Operation Business Plan 2012-2014
Classification	<p>Sector (subsectors): Agriculture and natural resources (water-based natural resources management; irrigation, drainage, and flood protection; land-based natural resources management; agriculture and rural sector development), micro-financing and micro-insurance</p> <p>Themes (subthemes): Environmental sustainability (nature resources conservation), economic growth (widening access to markets and economic opportunities), gender equity (gender equity in economic opportunities) and capacity development (institutional development)</p> <p style="text-align: center;"><i>Gender mainstreaming: effective gender mainstreaming</i></p> <p style="text-align: center;"><i>Climate change: adaptation</i></p> <p>Targeting classification: Targeted geographic intervention</p> <p>Location impact: Rural (high), urban (medium), national (low)</p> <p>Safeguards: Environment (B), Involuntary resettlement (B), Indigenous peoples (C)</p>
Risk categorization	Low risk
Partnership(s)	Strategic Climate Fund under the Pilot Program for Climate Resilience
Use of a PBA	No
Parallel PIU	No
Department and division	Central and West Asia Department Environment, Natural Resource and Agriculture Division
Mission leader and members	Cinzia Losenno, Senior Climate Change Specialist (CWER) Ryutaro Takaku, Water Resources Specialist (CWER) Jeremy Stickings, Senior Social Development Specialist (CWOD-PSS) Zerha Abbas, Environment Specialist, CWOD-PSS Jose Tiburcio S. Nicolas, Social Development Specialist, Safeguards (CWOD-PSS) Nazira Saidova, Project Assistant, TJRM

ADB = Asian Development Bank, ADF = Asian Development Fund, COBP = country operations business plan, CWER = Environment, Natural Resource and Agriculture Division, CWOD-PSS = Portfolio, Results, Safeguards and Social Sector Unit, EBRD = European bank for Reconstruction and Development, PBA = programmatic based approach; PIU = project implementation unit; PPCR = Pilot Program for Climate Resilience; RCOBP = regional cooperation operations business plan; SCF = Strategic Climate Fund, TJRM = Tajikistan Resident Mission.



PRELIMINARY DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>Impact Improved livelihoods of Pyanj river basin communities vulnerable to climate variability and change</p>	<p>Household incomes in project areas increased by XX a year (baseline=XXX for year 2011)</p>	<p>National statistics of the Government of Tajikistan (Ministry of Economic Development)</p>	<p>Assumptions Local government and communities sustained commitment to climate change adaptation measures</p> <p>Risks Actual climate change related impacts are more severe than predicted levels</p>
<p>Outcome Adverse effects of climate variability and climate change reduced in XX communities in the Pyanj river basin</p>	<p><i>By 2017:</i></p> <p>Economic losses (\$) from drought¹ reduced by XX (baseline = XXX for year 2011)</p> <p>Economic losses (\$) from floods¹ reduced by XX (baseline = XXX for year 2011)</p> <p>XX% of surveyed beneficiaries, of which at least XX women, confirm perception of improved access to information on climate change adaptation</p>	<p>Statistics and reports of Committee for Emergency Situations and other national statistics</p> <p>Statistics and reports of Committee for Emergency Situations and other national statistics</p> <p>Public opinion survey carried out by the Project</p>	<p>Assumptions Climate change impacts are estimated with adequate level of accuracy</p>
<p>Outputs 1. Climate proofed infrastructure² is operational in target communities</p>	<p>XX additional hectares of arable land serviced by climate proofed irrigation systems (end of year 5) (baseline=XXX for year 2011)</p> <p>XX additional households serviced by climate proofed water supply systems (end of Year 5) (baseline=XXX for year 2011)</p>	<p>Monitoring program established under PPCR</p> <p>Monitoring program established under PPCR</p>	<p>Assumptions Sufficient contractors available in the project districts</p>

¹ A methodology to measure economic losses resulting from droughts/floods will be identified during the project preparation technical assistance based on international best practices. An example of economic indicator that could be adopted in the Project is the Probable Maximum Loss (PML) = *Direct Losses* (physical damage to capital assets, valued at standard replacement costs) + *Indirect costs* (output losses, expected earnings, business interruption, environmental damage, cleaning and evacuation costs) + *Relief costs* refer to the provision of life supporting services (e.g. food aid, health care, safe water and sanitation) to populations whose access to these services has been lost as a result of the drought/floods.

² Climate proofed infrastructure results from engineering designs that incorporate the increase in temperature, droughts, floods and other climate hazards projected in the next 20-30 years in the project areas.

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>2. Capacity of target communities to manage climate change risks increased</p>	<p>Number of households at risk from floods reduced by XX (baseline=XXX for year 2011)</p> <p>XX% of surveyed beneficiaries, of which XX% women, confirm perception of improved access to water</p> <p>Early warning systems established in XX communities</p> <p>River basin adaptation plans adopted by XX districts (end of Year 3)</p> <p>At least one-third female representation in XX WUAs (end of Year 5) (baseline=XXX in 2011)</p> <p>Number of people covered by index-based crop insurance (microinsurance policyholders) increased by XX compared to base figure in 2011</p> <p>Number of people accessing finance for adaptation increased by XX compared to base figure in 2011</p> <p>Community level workshops on lessons learned and recommendations for replication attended by XX people</p>	<p>Monitoring program established under PPCR</p> <p>Public opinion survey carried out by the Project</p> <p>Monitoring program established under PPCR</p> <p>Monitoring program established under PPCR</p> <p>Monitoring program established under PPCR</p> <p>Monitoring program established under PPCR</p> <p>Monitoring program established under PPCR</p> <p>Monitoring program established under PPCR</p>	<p>Assumptions Trained stakeholders retained</p>
Activities with Milestones		Inputs	

Activities with Milestones	Inputs
<p>1. Jamoat-level climate proofed infrastructure is operational</p> <p>1.1 Collate and review required climate change information (projections and impacts assessment) in the Pyanj River Basin (Year 1)</p> <p>1.2 Identify most vulnerable communities to climate variability and change (Year 1)</p> <p>1.3 Through participatory approaches, support jamoat and community organizations to rank priority adaptation measures or sub-projects (irrigation, including water retention and discharge systems; water supply; flood protection, including soil stabilization; and micro-finance and micro-insurance) (Year 1)</p> <p>1.4 For each jamoat, assess the economic cost of the sub-projects (Year 1)</p> <p>1.5 Develop climate proofing requirements for each infrastructure engineering design included in the sub-projects (year 1)</p> <p>1.6 Implement sub-projects in each selected jamoat (Year 2-Year 5)</p> <p>1.7 Develop and produce operational manuals for infrastructure operation and maintenance (Year 3-4)</p> <p>1.8 Produce and publish guidelines for climate proofing jamoat level water infrastructure (irrigation systems, water supply and flood protection) (Year 4-Year5)</p> <p>2. Capacity of communities to respond to climate change risks increased</p> <p>2.1 Establish Water Users Associations (Year 1)</p> <p>2.2 Establish early warning systems in priority communities (Year 1 – Year 5)</p> <p>2.3 Establish microfinance facility and implement credit line (Year 1 – Year 5)</p> <p>2.4 Train existing MFIs on microinsurance operations to develop institutional expertise in insurance underwriting, screening, financial management, product development, and marketing</p> <p>2.5 Establish micro insurance facility and implement index-based crop insurance (Year 1 – Year 5)</p> <p>2.6 Train and upgrade skills of jamoat and community organizations to maintain the infrastructure (Year 3 – Year 5)</p> <p>2.7 Establish and implement training programs on climate change for local government officials, institutions such as <i>khashar</i> (mutual self-help groups), <i>mahala</i> (neighbourhood associations), and women’s committees (Year 1 – Year 5)</p> <p>2.8 In each jamoat, establish advisory services on options for efficient water management, climate resilient crops, new pests and diseases resulting from rising temperatures or changing water regimes, and restoring soil fertility (Year 1 – Year 5)</p> <p>2.9 Conduct public survey on the perception of improved access to water, information, risk transfer mechanisms and financial resources (Year 3 and Year 5)</p> <p>2.10 Produce knowledge products on results and lessons learned from the Project for dissemination among local stakeholders, across the country and the region, and with other CIF country partners (Year 1 – Year 5).</p> <p>2.11 Establish and implement monitoring & evaluation system in alignment with the results framework adopted by the Pilot Program for Climate Resilience (PPCR) (Year 1 to Year 5)</p>	<p>Project Preparation Technical Assistance totaling \$1.3 million: \$0.45 million from TASF – IV \$0.75 million from the Strategic Climate Fund³ \$0.1 million from the Government of Tajikistan in kind</p> <p>Investment Project totaling \$14.6 million from the Strategic Climate Fund³</p>

³ Under the Pilot Program for Climate Resilience

INITIAL POVERTY AND SOCIAL ANALYSIS

Country/Project Title:	Tajikistan/Building Climate Resilience in the Pyanj River basin		
Project Number:	45354-001		
Month/Year	October/2011		
Lending/Financing Modality:	Project	Department/ Division:	CWRD/CWER

I. POVERTY ISSUES

A. Links to the National Poverty Reduction Strategy and Country Partnership Strategy

1. Tajikistan is the poorest of the former Soviet Union republics. Its income per capita increased from \$130 in 2000 to \$550 in 2008 (World Bank 2008). About 53% of the population (rising to 70% in isolated rural and mountainous areas) earns only \$41 a month. Income disparities remain large—the Gini coefficient is 0.51—with major differences by region. Food security is low, with variations by location and season.
2. In project areas, the poverty situation is characterized by lack of infrastructure as well as service facilities. The high incidence of poverty and heavy reliance on agriculture and natural resources increase vulnerability to climate change impacts.
3. Climate change is recognized as a strategic theme in the Tajikistan's Country Partnership Strategy 2010 – 2014 and the 3rd Poverty Reduction Strategy 2010 - 2012. ADB, along with the World Bank and other development partners, will assist Tajikistan in identifying sectors that are particularly vulnerable to the adverse effects of climate change and implement adaptation measures.

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:
Poverty is high in the Pyanj River Basin. The effects of climate change could plunge the majority of rural people in into deeper poverty. At project level, poor households and women will be preferably selected to access short-term employment, and benefit from trainings and economic opportunities generated by the project.

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?
N/A
2. What resources are allocated to the project preparatory TA and due diligence?
A poverty reduction specialist will be engaged for 3 person-months. Resource for study and survey has been allocated.
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)?
N/A

II. SOCIAL DEVELOPMENT ISSUES

A. Initial Social Analysis

Based on existing information:

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

The Project will benefit the entire jamoat (sub-district) including the poor and women by improving access to water, creating infrastructure and improving skills required to increase water and land productivity. Farmers (large, small, medium, and marginal) will benefit from higher productivity and increased agricultural coverage as a result of reduced waterlogging and flooding. The poor and vulnerable men and women will directly benefit from the employment generated by the construction of project facilities and for maintenance.

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

The beneficiaries need reliability of access to water resources, agriculture technologies and practices, efficient rural transport and supporting infrastructure for widened access to markets that are not going to be affected by changing climate conditions. They also economic opportunities, opportunities to make the best use of their land and other assets free from drought and flooding, access to financial resources and credit to introduce new practices and to insurance to protect their crops from climatic shocks. The poor women and men need employment opportunities and access to livelihood activities.

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

The main constraint is the limited availability of financial resources to address all the climate adaptation needs of the communities in the Pyanj river basin. The project has the potential to leverage additional financing.

Other potential constraints will be identified during the PPTA activities.

B. Consultation and Participation

1. Indicate the potential initial stakeholders.

The initial stakeholders are the Ministries of Water resources and Land Reclamation, Agriculture, and the Committee of Women and Family Affairs. At the local level, stakeholders include local administrations, union councils, farmers, water users associations, market users and general people of the project area. Both women and men have stake in all categories of infrastructure and services offered by the project. Various line departments and their local offices will also be involved. The demand group includes farmers, retail traders and businessmen, small entrepreneurs, wholesale traders, woman traders, poor and vulnerable women and other people of the community.

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

Different types of consultation and participation will be required at various levels. The PPTA will be implemented through a participatory and consultative approach with the executing agency staff, jamoat and community organizations, local NGOs and other stakeholders. Stakeholder consultation will be a key activity to reach consensus on the project priority interventions, design and implementation arrangements.

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 Please explain.

The PPTA will assess the participation methods and lessons from the ongoing development projects in the Pyanj River Basin and identify ways for effective stakeholder participation during the implementation phase. An effective, practical and inclusive participation strategy will be developed based on the findings of the consultations and considering the needs and interests of communities. It will also include strengthening capacity of local government, jamoats and community organizations in managing a participatory development process.

C. Gender and Development

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

The majority of household in the project area is led by women because of male labour migration and fall into the poorest category of rural population. Women in the project area are mostly engaged in household and farming activities. They have limited access to economic opportunities and social services. Women's access to market, the heart of rural economy, is minimal and their role in local government decision making is negligible. The need to consider women as a distinct group and the importance to address their needs is unspoken. They need support for employment and livelihoods. With increasing extreme events such as droughts and floods, they are the ones who suffer the most in managing household needs.

2. Does the proposed project or 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 Please explain.

The proposed project will focus on increasing women's participation in project planning, implementation, monitoring, and maintenance, generating employment opportunities for women by involving them in income generating activities; fostering the entrepreneurship of women; and promoting female members' participation in local governance decision making. The Project will target women through specific components and activities such as in provision of information, training for new farming technologies and infrastructure maintenance through labor contracting societies. The PPTA will suggest means to increase women's share in the labor opportunities arising from the project and also increase their participation and benefits from all components. A realistic gender action plan will be developed during the PPTA

and resources will be made available to implement it.

3. Could the proposed project have an adverse impact on women and/or girls or widen gender inequality?
 Yes No Please explain

A realistic gender action plan will ensure the project will not have any adverse impact on women and children, will foster gender equality in economic opportunities and will facilitate women empowerment.

III. SOCIAL SAFEGUARD ISSUES AND OTHER SOCIAL RISKS

Issue	Nature of Social Issue	Significant/Limited/ No Impact/Not Known	Plan or Other Action Required
Involuntary Resettlement	Land acquisition and involuntary settlement is not likely in the interventions being examined under the TA because infrastructure is usually developed on government land. Should small strips of land acquisition be required for the pilot subprojects, a resettlement plan will be prepared during the TA for selected interventions and a resettlement framework will be prepared for the implementation phase with the aim to minimize involuntary resettlement	Limited. Communities in the project area have a low to medium population density thus no significant impact on IR issue is expected. This will be confirmed during the PPTA activity.	<input type="checkbox"/> Full Plan <input checked="" type="checkbox"/> Short Resettlement Plan <input checked="" type="checkbox"/> Resettlement Framework <input type="checkbox"/> No Action <input type="checkbox"/> Uncertain
Indigenous Peoples	Indigenous people issues will be examined during the PPTA for the proposed project activities. No major adverse impact is likely.	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
Labor <input checked="" type="checkbox"/> Employment Opportunities <input type="checkbox"/> Labor Retrenchment <input type="checkbox"/> Core Labor Standards	The projects will increase the employment opportunities for the poor and others through contractors and in ancillary activities. Reduction of gender discrimination and improvement of employment and working conditions will be facilitated.	Limited (positive)	<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input checked="" type="checkbox"/> No Action <input type="checkbox"/> Uncertain
Affordability	No significant issue on affordability is anticipated. This aspect will be examined by the TA team; especially the project interventions in selected communities will be fixed based on the assessment done in a participatory manner.	Limited	<input type="checkbox"/> Action <input checked="" type="checkbox"/> No Action <input type="checkbox"/> Uncertain
Other Risks and/or	The infrastructure will be designed to survive		

<p>Vulnerabilities</p> <p><input type="checkbox"/> HIV/AIDS</p> <p><input type="checkbox"/> Human Trafficking</p> <p><input checked="" type="checkbox"/> Others (conflict, political instability, etc.), please specify</p>	<p>climate induced extreme events. The project will orient local government institutions about climate risks through jamoat awareness-raising programs</p>		<p><input type="checkbox"/> Plan</p> <p><input type="checkbox"/> Other Action</p> <p><input checked="" type="checkbox"/> No Action</p> <p><input type="checkbox"/> Uncertain</p>
<p>IV. PROJECT PREPARATORY TECHNICAL ASSISTANCE/DUE DILIGENCE RESOURCE REQUIREMENT</p>			
<p>1. Do the terms of reference for the project preparatory TA (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.</p> <p>2. Are resources (consultants, survey budget, and workshop) allocated for conducting poverty, social, and/or gender analysis, and C&P during the project preparatory TA or due diligence? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, please explain why.</p>			

PROJECT PREPARATORY TECHNICAL ASSISTANCE

A. Justification

1. A Project Preparatory Technical Assistance (PPTA) is needed to carry out technical, economic and social due diligence for the Project *TAJ: Building Climate Resilience in the Pyanj River Basin*, in accordance with the Government of Tajikistan's and ADB's standards and expectations. The outcome of the PPTA will be *full project design*, including implementation arrangements, and *total project readiness* for the sub-projects, including detailed engineering design and preparation of bidding documents, endorsed by the Government of Tajikistan (GTAJ) and ADB.

2. The PPTA will identify the most vulnerable communities in the Pyanj River Basin, and for each jamoat (sub-district) select and design physical and non-physical adaptation measures to reduce the adverse effects of climate change on water resources. Potential adaptation measures in the Pyanj river basin have already been identified in a climate change risk assessment carried out under the Pilot Program for Climate Resilience with ADB support (TA-7599:TAJ¹) and extensive consultations with line ministries, international organizations, civil society, local governments, jamoats and community-based organizations in the Pyanj River Basin. Infrastructure needs included rehabilitation or construction of climate-proofed infrastructure for: (i) small scale irrigation systems and drainage, including water storage and discharge and other drought management measures; (ii) supply of drinking water; and (iii) flood and mudflows management, including small-scale riverine embankments, soil stabilization and reforestation. Other measures identified include: (i) early warning systems for floods and droughts; (ii) micro-finance to support the introduction of adaptation measures at the farm and household level, especially for women; (iv) index-based micro-insurance as a climate change risk transfer mechanism and (v) advisory services to provide and disseminate information on climate change risks management practice and adaptation technologies.

B. Major Outputs and Activities

3. The PPTA will fully develop a minimum of 4 pilot subprojects – at least 3 infrastructure subprojects for each sector (irrigation, water supply and flood management) and a capacity building subproject² including financial credit facility and index-based insurance. The PPTA will also clarify the balance in the investments required to climate-proof water infrastructure and build institutional and human capacity, and properly budget for and sequence all Project's subprojects. The PPTA will build upon the findings of TA7599-TAJ, completed and ongoing ADB projects³, ADB evaluation studies^{4,5} and relevant work being carried out by the GTAJ, other donors, international organizations and NGOs.

4. The PPTA outputs include: (i) prioritized vulnerable jamoats, (ii) prioritized adaptation measures to be implemented in target jamoats fully endorsed by key stakeholders, including ADB, Executing Agency, local government and community organizations, (iii) feasibility studies

¹ ADB. TA-7599 TAJ: Climate Resilience for Natural Resources Investments

² Whilst the PPTA is likely to prepare 4 full subprojects, it is anticipated that the proposed Project will be serving 11 jamoats. With a population of 1.27 million in 115 jamoats there are on average 2,000 households per jamoats. Assuming a budget of \$500/household (as for previous projects, for example Loan 2124 TAJ) the proposed Project budget of \$14.6 million will cover about 11 jamoats. Other subprojects will be designed during the implementation of the proposed Project.

³ ADB 2006. Rural Development Project, Tajikistan; ADB Khatlon Flood Management Project

⁴ ADB 2009. Irrigation and Drainage Sector Synthesis available.

⁵ ADB 2008. Best Practices in Irrigation and Drainage.

including technical, economic and social due diligence, and (iv) preparation of the Project appraisal documents. The PPTA will assess technical feasibility, economic viability, institutional capacity, and impacts on poverty, gender and the environment. The PPTA will formulate an investment project at the project readiness level, including detailed engineering design of the infrastructure sub-projects, the procurement plan and bidding documents. All reports will be presented in English, Russian and Tajik language.

5. The PPTA activities are the following:

6. *Climate Vulnerability, Impact and Adaptation Assessment* to identify priority communities that are particularly vulnerable to climate variability and change, with a focus on water resources, building on the preliminary climate vulnerability and risk assessment carried under TA7599-TAJ and other studies available in the literature. For each jamoat adaptation measures (sub-projects) will be prioritized from the basket of measures already identified in TA7599-TAJ and over the two years of consultations conducted under the Pilot Program for Climate Resilience. The basket of measures include climate proofed infrastructure for irrigation, water supply and flood protection, capacity building programs for information, provision of financial resources for the introduction of adaptation technologies and practices, and provision of risk transfer mechanisms. Key attributes of the sub-projects will include high demonstration value, replication and up-scaling potential at the river basin and national level, cost effectiveness and the urgency of the risks they are set to address. The assessment will be conducted using well established methodologies such as those described by the United Nations Framework Convention on Climate Change (UNFCCC)⁶, the World Bank⁷ and other organizations. The assessment will be complemented with perspectives and insights of people whose livelihoods are being affected by changes in climate to reflect the specific adaptation needs of the vulnerable communities identified, including women, and build upon traditional knowledge. Local-level analysis of traditional adaptation measures and future needs will be conducted in key sectors (water resources, agriculture, water supply, etc.) using multi-criteria analysis, participatory appraisal based on fieldwork, workshops and consultation, and other bottom-up methods. A participatory approach will be employed to engage government and non-government stakeholders in the selection of target communities and sub-projects.

7. *Technical Feasibility Assessment* will assess the technical feasibility of the sub-projects, including detailed engineering design of the infrastructure components. The sub-projects will be developed with participation of local governments, jamoats, community based organizations and non-governmental organizations.

8. The *Poverty, Social and Gender Assessment* will produce the socio-economic profile of the selected communities. The assessment will identify the needs of women, review impacts of the investment on poverty reduction and gender development, and prepare the project's social analysis document. Opportunities to generate employment, including opportunities for women's employment through project-related civil works, O&M schemes that can be sustained given the capacity of the communities, maintenance of community climate-proofed infrastructure, promote private sector development, and support small businesses will be assessed. A gender action plan will be developed taking into account the role of women and girls as agents of change and repository of traditional knowledge for adaptation to changing climatic conditions. Options to

⁶ UNFCCC Secretariat (2008) *Compendium on methods to evaluate impacts of, and vulnerability and adaptation to, climate change*.

⁷ Heltberg, R and Bonch-Osmolovskiy (2011) *Mapping Vulnerability to Climate Change* World Bank Washington DC

improve access of women and other vulnerable sections of society to decision-making process, climate change information and preparedness to cope with extreme events will be formulated.

9. The *Safeguards Assessment* will produce an Environmental Assessment Review Framework (EARF), a Land Acquisition and Resettlement Framework (LARF), and a Initial Environmental Examination (IEE)⁸, and a Land Acquisition and Resettlement Plan (LARP) for the pilot subprojects if required, in accordance with ADB's *Safeguard Policy Statement* (2009) and Tajikistan's environmental regulations⁹, and facilitate consultations in the project area on the scope of impacts of the physical works and the draft findings of the IEE. Climate change impact on the project areas' environment and ecosystems will form an integral part of the IEE.

10. The *Institutional Arrangement and Governance Assessment* will produce a stakeholders' analysis to identify key national and sub-national stakeholders amongst a broad section of government and society, including the role of local institutions, jamoat and community associations and nongovernmental organizations. The study will design the institutional arrangement of the Project required to ensure high impact and sustainability of the Project, and effective investment implementation.

11. The *Economic Viability Assessment* will assess the economic viability of the sub-projects, in accordance with the ADB's Guidelines for the Economic Analysis of Projects (1997). The economic analysis, amongst other aspects, will cover alternatives and least-cost analysis, cost-benefit analysis, financial and institutional sustainability analysis, sensitivity and risk analysis, and distribution analysis. Cost estimates of the priority adaptation actions proposed will also be produced, combining the best available practices such as macro-economic modeling techniques (for example PAGE09¹⁰) with participatory approaches employed in the Technical Assessment. The Economic Assessment will also identify additional sources of financing to fund complimentary adaptation measures in the Pyanj river basin taking into account existing and new financial resources available under the emerging post-2012 climate change international framework.

12. The *feasibility study* will merge together the above mentioned assessments and propose concrete adaptation investment measures for priority communities to meet adaptation needs already identified. The investment measures will be innovative approaches to climate resilient development and poverty reduction in the selected locations. The investment measures will be aligned with Tajikistan's poverty reduction priorities, ADB's Country Partnership Strategy (CPS) to Tajikistan, and ADB's Country Business Operation Plan of Tajikistan.

13. The major outputs and activities are summarized in Table A5.1.

Table A5.1: Summary of Major Outputs and Activities

Major Activities	Expected Completion Date	Major Outputs	Expected Completion Date
Take stock of available reports and literature, and relevant ongoing activities	Month 1	Inception report Inception workshop	Month 1 Month 2
Define Vulnerability, Impact and			

⁸ The need for an environmental impact assessment will be determined during the IEE.

⁹ Specific arrangements necessary to comply with Tajikistan's State Environmental Review, notification and licensing requirements will be assessed for review by the Government and ADB.

¹⁰ PAGE09 is a new version of the PAGE integrated assessment model that values the impacts of climate change and the costs of policies to abate and adapt to it.

Adaptation methodology			
Prepare detailed TA work plan			
Identify target jamoats and key stakeholders For each target jamoat, identify priority adaptation measures (subprojects) through participatory decision-making process	Month 2	List of priority jamoats Stakeholder map Stakeholder workshops Interim report	Month 3 Month 3
Assess poverty reduction and social impact Prepare safeguards frameworks (environment and involuntary resettlement)	Month 3	Gender Equity Plan EARF, IEEs (if required) and LARF (if required) for the sub projects	Month 4
Define implementation arrangements for the Project Assess technical, economic and financial viability of subprojects Assess financial management, procurement, anticorruption measures, policy and legal, capacity, and other institutional issues and mechanisms	Month 5	Institutional Arrangement Plan Economic Assessment Distribution Analysis	Month 5
Design at least 3 infrastructure subprojects (climate proofed infrastructure for irrigation, water supply and flood protection) Prepare appropriate safeguards plan	Month 5	Draft final report Monitoring and Evaluation Framework LARPs if required	Month 6
Design at least one capacity building subproject (infrastructure operation & maintenance, advisory services for water resources management at the household and farm level, financial credit facility for adaptation, index-based insurance) Design Monitoring and Evaluation Framework for the Project, with measurable indicators	Month 5	Detailed Engineering Design Procurement Documents Project Administration Manual Final report	Month 7

EARF=Environmental Assessment Report and Framework; IEE=Initial Environmental Examination; LARP=Land Acquisition and Resettlement Plan.
Source: ADB estimates.

C. Cost Estimate and Proposed Financing Arrangement

14. The TA is estimated to cost \$1.3 million, of which \$450,000 will be financed from ADB TASF-IV and \$750,000 from the Strategic Climate Fund (SCF) a grant basis¹¹, and administered by ADB. The government will provide in-kind support in the form of office accommodation, administrative support, supplies, field transport, and assign specialists as counterpart staff, and assistance in organizing seminars and workshops, together estimated at \$100,000 equivalent. The detailed cost estimate is presented in Table A5.4.

¹¹ Under the Pilot Program for Climate Resilience

Table A5.4: Cost Estimates and Financing Plan
(\$'000)

Item	Total Cost
A. ADB Financing^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (18 person-months)	468.0
ii. National consultants (90 person-months)	270.0
b. International and local travel	50.0
c. Reports and communications	10.0
2. Equipment (computer, printer, etc.) ^b	10.0
3. Workshops, training, seminars, and conferences	12.0
4. Vehicle ^c	20.0
5. Surveys ^d	194.0
6. Miscellaneous administration and support costs	10.0
7. Representative for contract negotiations	6.0
8. Contingencies	150.0
Subtotal (A)	1,200.0
C. Government Financing^e	
1. Office accommodation, transport and counterpart staff	90.0
2. Contingencies	10.0
Subtotal (B)	100.0
Total	1,300.0

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-IV) and the Strategic Climate Fund under the Pilot Program for Climate Resilience, and administered by the Asian Development Bank.

^b Equipment include will be handed over to the government of Tajikistan at TA completion

^c Vehicle hire is for field survey work in remote communities

^d Surveys will include hydrological and morphological surveys as well as additional hydro climate modeling required to provide projections of temperature, rainfall, snowfall, river runoff, evapotranspiration, crop productivity and other relevant parameters.

^e The Government contribution will be in-kind.

Source: ADB estimates.

D. Consulting Services

15. The PPTA will be implemented over a period of 7 months from the fielding of consultants, which is anticipated in March 2012. ADB will recruit a team of consultants through a firm using simplified technical proposal for the quality- and cost-based selection (QCBS) method to provide 18 international and 90 national person-months of consulting services. Quality: cost ratio of 90:10 will be used for the QCBS due to the project's complexity and innovative nature of the technical work required. The consultants will be engaged by ADB in accordance with its Guidelines on the Use of Consultants (2010, as amended from time to time).

16. The consulting firms are expected to provide the required expertise as follows.

Table A5.2: Summary of Consulting Services Requirement

International		National	
Name of Positions	Person-months	Name of Positions	Person-months
Climate Change Specialist (Team leader)	4	Climate Change Specialist (Deputy Team Leader)	6
Infrastructure Specialist (irrigation, water supply, flood protection)	6	Infrastructure Engineers (irrigation, water supply, flood protection)	24
Poverty, Gender and Institutions Development Specialist	2	Poverty, Gender and Institutions Development Specialist	6
Micro finance and insurance specialist	2	Micro insurance and insurance specialist	4
Project Economist	2	Project Economist	6
Procurement specialist	2	Procurement specialist	4
Total	18	Hydrologist	12
		River morphologist	6
		Environment and Social Safeguards Specialists	6
		Participatory Development Specialists	6
		Financial Management Specialist	6
		Monitoring/Evaluation Specialist	4
		Total	90

Source: ADB estimates

17. **Climate Change Specialists/Team leader and Deputy Team Leader** (international, 4 person months; national, 6 person months) will manage the team, coordinate with counterpart staff and prepare a comprehensive project proposal in a format suitable for ADB processing. The Team Leader should have at least 15 years of experience in climate change, water resource, river basin management and development. The Deputy Team Leader will have 10 years experience in water resources management in Tajikistan, with operational experience in the Pyanj river basin. The Team Leader, with the support of the Deputy Team leader, will prepare the project proposal including climate risks and vulnerability assessment of project areas, design and monitoring framework including baseline data, economic analysis, cost estimates and financing plan, procurement plan, terms of reference for consulting services, gender assessment and action plan, social and safeguard assessment, selection criteria for subprojects, and project administration manual (PAM). The Team Leader and the Deputy Team Leader will work closely with the Infrastructure Engineers to ensure that climate change risks management is incorporated in the detailed engineering design of the infrastructure components of the subprojects. The Team Leader and the Deputy Team Leader will coordinate with the Poverty, Gender and Institutions Development Specialists, and the Participatory Approach Specialist to define mechanisms for the direct engagement of jamoat and community level organizations and NGOs, formulate a capacity development program that will support the targeted communities in managing climate change risks and to define appropriate institutional arrangements for the Project. The TL, with support from the Deputy TL and in coordination with the whole consultant team, is responsible for (i) the Project design details and documentation, including PAM and other linked documents required; (ii) feasibility studies for four representative subprojects; (iii) assisting the Executing Agency in conducting pre-implementation training workshops for central and jamoat project staff for Project Administration

Manual familiarization; (iv) assisting the EA/IAs in identification of role-based project staffing required at central, district and jamoat levels to ensure these incremental resources are fully budgeted for; and (v) administration of workshops, training, seminars and conferences and surveys.

18. **Water Infrastructure Specialist** (international, 6 person-months) will have at least 15 years working experience in designing water infrastructure projects including irrigation, water supply and flood protection in developing countries and has extensive experience in Central Asia (CA). The Specialist will be responsible for identifying infrastructure solutions that are suitable to the changing climate conditions of the project areas and address the adaptation needs identified in the target jamoats and communities. He/she will be responsible for climate-proofing the engineering design. The Water Infrastructure Specialist will work closely with the Infrastructure Engineers to produce detailed engineering design of the infrastructure components of the sub-projects, including operational and maintenance requirements.

19. **Infrastructure Engineers** (national, 24 person-months) should have at least 10 years working experience in designing small-scale rural infrastructure in Tajikistan, preferably in the Pyanj river basin. The Engineers will assess the selection and eligibility criteria of infrastructure measures; develop technical, economic, social, and environmental criteria for screening and selecting schemes to be upgraded under the project; verify construction and maintenance cost estimates for sub-project selected for upgrading; and check and finalize cost estimates for climate proof infrastructure proposed for improvement. The specialists are responsible for the following outputs: (i) design of the rural infrastructure investment component with scheduled activities, associated cost estimates and phasing; and (ii) inputs into representative subprojects' feasibility studies with regards to engineering designs.

20. **Poverty, Gender and Institutions Development Specialist** (international, 2 person-months) will have at least 15 years experience in poverty reduction, gender equality and institutional development in Central Asia. The Specialist will be responsible for conducting vulnerability and climate change impacts assessments on different groups of communities, especially women; identifying all adaptation needs of communities and potential adaptation solutions, including soft and hard measures; and incorporating selected adaptation priorities into the sub-projects and the project design, including institutional arrangements and budget. The Specialists will develop and suggest mechanisms to enhance women's effective participation in the Project, as users and as beneficiaries, promoting women's employment opportunities through project-related civil works and the maintenance of community climate-proofed infrastructure; recommend steps to incorporate gender criteria into the project impact monitoring system; prepare a budget for gender and development activities; and prepare a gender action plan. The Specialists will assist the Team Leader in designing the Project's institutional arrangements; prepare a capacity development program for relevant government and non-government stakeholders to manage inclusive and participatory development; and prepare guidelines for improving the operational efficiency of the Executing Agencies for sustainable maintenance of the infrastructure.

21. **Poverty, Gender and Institutions Development Specialists** (national, 6 person-months) will have at least 10 years experience in social, community and institutional development in Tajikistan. The Specialist will collect social data as required; analyze the socioeconomic data required for benchmark information on poverty and its distribution and poverty impact ratio analyses; develop poverty and social selection criteria; identify effective implementation arrangements and support the development of a results-based monitoring and evaluation system.

22. **Micro-finance and Micro-insurance Specialists** (international, 2 person-month; national 4 person-months). The International Specialist should have at least 10 years working experience in the design and operationalization of micro financial facilities and crop insurance in

developing countries; experience in Central Asia is highly desirable. The National Specialist should have at least 8 years experience in micro-finance in Tajikistan; experience in insurance is highly desirable. The International Specialist and National Specialist will be responsible for the following outputs: (i) review lessons learned from existing micro financing and insurance schemes, assessment of past and ongoing micro-finance and crop insurance initiatives in Central Asia and documentation of regional and international best practices; (ii) assessment of the need for and viability of a micro financing scheme and an index based crop insurance scheme in the target jamoats and (iii) design a pilot project to test the feasibility of a combined microfinance and crop insurance scheme for farmers in the Pyanj River Basin, based on the principle of compensation according to a multi-criteria weather index, and taking into considerations existing financial institution and potential partnerships with international organizations and local NGOs.

23. **Project Economists** (international 2 person-months; national 6 person-months) The International Project Economist should have at least 12 years experience working as an economist in development projects and financial specialist in developing countries with solid understanding of factor productivity, climate change economics and extensive experience in Central Asia. The National Project Economist will have at least 10 years of working as an agricultural and water sector development economist in Tajikistan. Both Specialists will be responsible for the following outputs: (i) preparation of the financial and economic analyses for the Project as a whole and the four representative subprojects in compliance with ADB's relevant guidelines; (ii) preparation of cost estimates, financing plan, procurement plans for investment components; (iii) preparation of financial management assessment (FMA) relevant agencies; (iv) designing the funds flow and disbursement mechanism based on such assessment; and (v) identification of further capacity building (financial management and ADB's disbursement procedures) that will be necessary for the project.

24. **Procurement Specialists** (international 2 person-months; international 4 person-months). The international specialist should have at least 10 years working experience in project management and procurement in developing countries and extensive experience in Central Asia. The national specialist should have at least 8 years working experience in project management and procurement. Both specialists are required to be familiar with ADB's 2010 procurement guidelines and related procedure. The Specialists will support the Executing Agency to: (i) perform a procurement capacity assessment of the identified Executing Agency; (ii) prepare bidding documents using standard ADB's recommended procurement document format and guidelines, including ADB's Guide on Implementing Projects with Community Participation, and building on the detailed design, cost estimate, bill of quantities, drawings, and other specifications prepared by other specialists; and (iii) process the bidding from advertisement till the award of contracts. The bidding documents will include bidding for the first year (or the first batch of the first year) of the implementation of the project. The specialist will prepare consulting services packages including proposed types of selection and schedules, and process the recruitment from expression of interest till the contract award.

25. **Hydrologists** (national, 12 person-months) will have at least 8 years experience working as a hydrologist in Tajikistan's main river basins. The Hydrologists will recommend options for improving design criteria of infrastructures based on hydrological analysis and climate change scenario; review lessons learned from previous infrastructure projects in the project areas from hydrological analysis perspective; and provide support to the engineers to formulate an improved climate resilient infrastructure design.

26. **River morphologist** (national, 6 person-months) will have at least 8 years experience working as river morphologist in Tajikistan's river basins. The River Morphologist will identify locations, layouts and designs of engineering and ecosystem based flood protection measures to stabilize river bed including minimization of sedimentation in river bed and

minimization of any adverse morphological impacts.

27. **Environment and Social Safeguards Specialists** (national, 6 person-months) should have at least 10 years working experience in social and environment safeguards in developing countries and extensive experience in Tajikistan. The Specialist is required to be familiar with ADB's social and environment safeguards policies and procedures. She/he will assess the potential environmental and social impacts of the proposed sub projects, including resettlement and land acquisition, physical, ecological, and social environments in line with the ADB's Safeguard Policy Statement (2009). The Specialist will prepare an Environmental Assessment and Review Framework, and an Initial Environmental Assessment and Land Acquisition and Resettlement Plan if required, describing the environmental procedures and social measures to be followed for each sub-project.

28. **Participatory Development Specialists** (national, 6 person-months) will have at least 10 years experience working on participatory development approaches with communities in Tajikistan. The Specialist will be responsible for organizing stakeholder consultation to effectively manage infrastructure and establish procedures to ensure full involvement of beneficiaries in line with the participatory development approach. He/she will work closely with the jamoat and community leaders, community and jamoat organizations, non-governmental organizations and government agencies in the selected communities to identify key stakeholders and design a mechanism for stakeholders' engagement in the implementation of the Project.

29. **Financial Management Specialist** (national, 6 person-months) should have at least 10 years working experience on financial management in Tajikistan and be familiar with ADB's financial and disbursement procedures. She/he will undertake a financial management assessment of the Executing Agency to ensure that financial management capacity is sufficient to implement the proposed project. The specialist will also design the funds flow mechanism for the ensuing project, based on the financial management assessment and identify further capacity building (financial management and ADB's disbursement procedures) that might be necessary for the project, based on the results of the financial management assessment.

30. **Monitoring and Evaluation Specialist** (national, 4 person-months) should have at least 8 years experience in monitoring and evaluation and be familiar with the results framework of the Pilot Program for Climate Resilience (PPCR). Familiarity with climate resilience and adaptation indicator is highly desirable. She/he will identify performance targets and indicators, including gender disaggregated indicators, for each sub-project and design a monitoring and evaluation system for the Project.

E. Implementation Arrangements

31. The Executing Agency for the project preparation TA will be the Ministry of Land Reclamation and Water Resources (MLRWR), with the support of the Ministry of Agriculture (MOA), the Committee of Emergency Situations (CES) and the Committee of Women and Family Affairs (COWFA), and under the coordination of the Deputy Prime Minister. ADB will be responsible for overall management of the feasibility study in coordination with the MLRWR, MOA, CES and the COWFA. The Executing Agency will make available adequate office space (with electricity, telephone and internet connection) for the main consultants during the PPTA period. The Government of Tajikistan will cover the costs incurred by Government personnel for the participation in field visits and PPTA work. All disbursements under the PPTA will be made in accordance with the *ADB's Technical Assistance Disbursement Handbook* (May 2010, as amended from time to time). ADB will engage the consultants in accordance with the Guidelines on the Use of Consultants by ADB and its Borrowers (2010, as amended from time to time).

32. The proposed TA processing and implementation schedule is listed in Table 5.3.

Table 5.3: Proposed Technical Assistance Processing and Implementation Schedule

Major Milestones	Expected Completion Date
PPCR grant endorsement	2 December 2011
TA Approval	9 December 2011
TA Commencement	I March 2012
TA Completion	IV October 2012

ADB = Asian Development Bank; PPCR = Pilot Programming for Climate Resilience; PPTA = project preparatory technical assistance; TA = technical assistance; TPP = TA project profile

Source: ADB estimates