



Grant Assistance Report

Project Number: 40046-02
August 2008

Grant Assistance Republic of Tajikistan: Community Participatory Flood Management (Financed by the Japan Fund for Poverty Reduction)

In accordance with ADB's public communications policy (PCP 2005), this abbreviated version of the report excludes confidential information and ADB's assessment of project or transaction risk as well as other information referred to in paragraph 126 of the PCP.

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 24 July 2008)

Currency Unit	–	somoni (TJS)
TJS1.00	=	\$0.2918
\$1.00	=	TJS3.4272

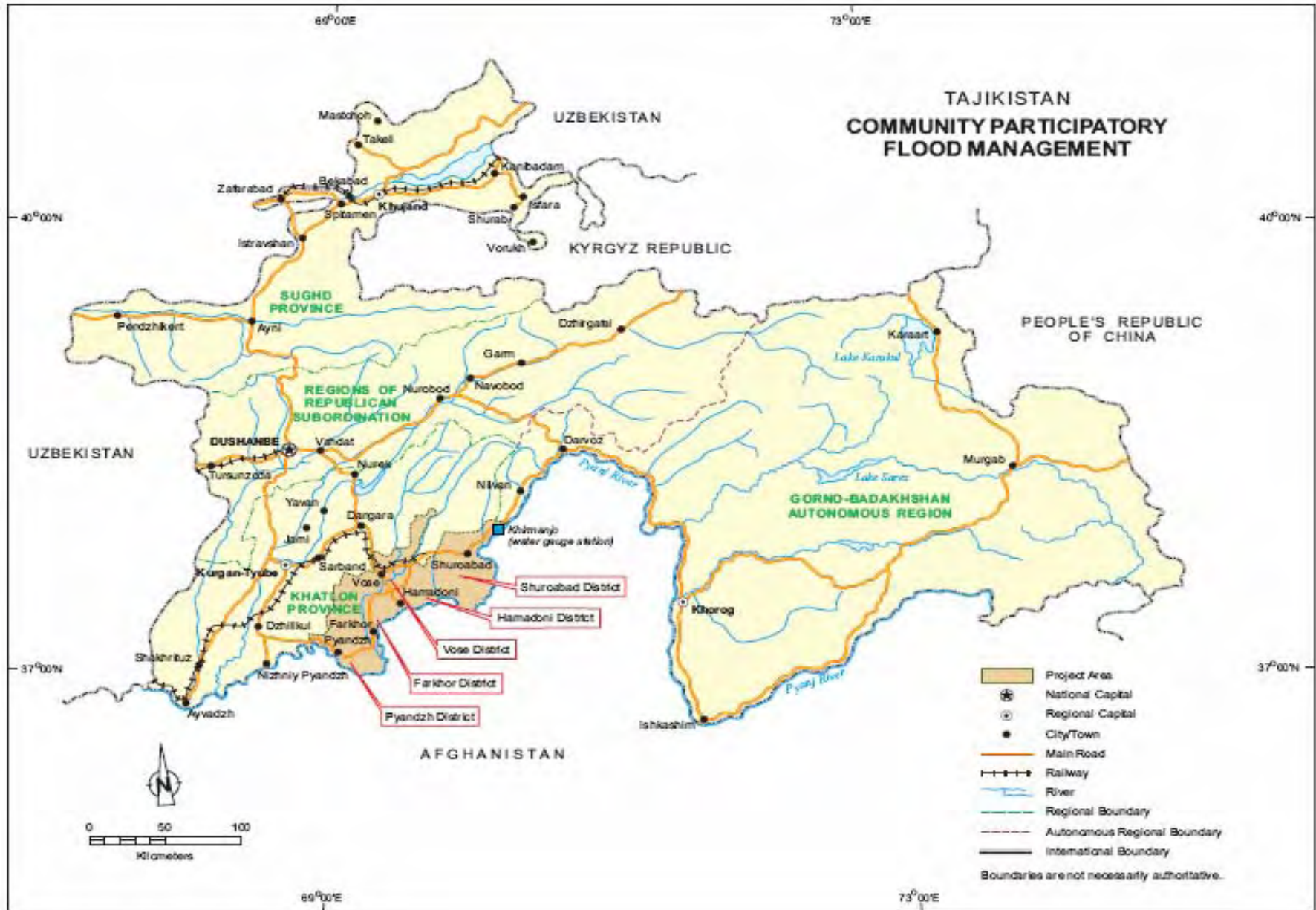
ABBREVIATIONS

ADB	–	Asian Development Bank
ADRC	–	Asian Disaster Reduction Center
CES	–	Committee for Emergency Situations
CPDMS	–	community participatory flood and other disaster management system
EA	–	executing agency
GIS	–	geographic information system
ha	–	hectare
IA	–	implementing agency
JICA	–	Japan International Cooperation Agency
JFPR	–	Japan Fund for Poverty Reduction
MOU	–	memorandum of understanding
NGO	–	nongovernment organization
O&M	–	operations and maintenance
PMO	–	project management office
PSC	–	project steering committee
QCBS	–	quality and cost-based selection
REACT	–	Rapid Emergency Assessment and Coordination Team
SPRSS	–	Summary Poverty Reduction and Social Strategy

NOTE

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

Vice-President	B. N. Lohani, Vice-President-in-Charge, Operations 1
Director General	J. Miranda, Central and West Asia Department (CWRD)
Director	K. Matsunami, Agriculture, Environment, and Natural Resources Division, CWRD
Team leader	B. Wilkinson, Rural Development Specialist, CWRD
Team member	M. Kunzer, Environmental Specialist, CWRD



JAPAN FUND FOR POVERTY REDUCTION (JFPR)

JFPR Grant Proposal

I. Basic Data	
Name of Proposed Activity	Community Participatory Flood Management
Country	Tajikistan
Grant Amount Requested	\$3.0 million
Project Duration	4 years
Regional Grant	<input type="radio"/> Yes / <input checked="" type="radio"/> No
Grant Type	<input checked="" type="radio"/> Project / <input type="radio"/> Capacity building

II. Grant Development Objective(s) and Expected Key Performance Indicators

<p>Grant Development Objectives: The impact of the grant will be lowered risk of household losses due to flood damage and other disasters for poor households in flood-prone areas. The objective is to develop the capacity to anticipate, protect against, prepare for, and cope with floods and other disasters in about 130 flood-prone villages in Farkhor, Hamadoni, Vose, Pyandzh, and Shuroabad districts of Khatlon province. The objective will be achieved in two ways: (i) by supporting households to adopt a holistic system to understand and assess hazards and risks of flood and other disasters systematically, mitigate them, monitor risks, address floods and other disasters when they occur, and prepare for recovery; and (ii) by providing silviculture flood protection via selective restoration of natural ecosystems to strengthen riverbank and household areas against floods, and to provide additional income to households based on these resources.</p>
<p>Expected Key Performance Indicators:</p> <ol style="list-style-type: none"> 1. Comprehensive community participatory flood and other disaster management system (CPDMS) ready for implementation, with full documentation and training modules. 2. Committee for Emergency Situations (CES) and local government village disaster management plan joint certification systems established for the plans made under the CPDMS. 3. Percentage of total villages with realistic risk awareness and mitigation plans, early warning of flood risk and response plans, and post-flood recovery plans certified by CES. 4. Percentage of all villagers who can successfully describe their roles in (i) flood and disaster mitigation, (ii) risk monitoring, and (ii) actions in case of a flood or other disaster. 5. Hectares of designated area with sustainable tree-based flood-reducing ecosystems.

III. Grant Categories of Expenditure, Amounts, and Percentage of Expenditures

Category	Amount of Grant Allocated in \$	Percentage of Expenditures (%)
1. Civil Works	0	0.0
2. Equipment and Supplies	847,680	28.3
3. Training, Workshops, Seminars, and Public Campaigns	555,990	18.5
4. Consulting Services	238,739	8.0
5. Grant Management	417,445	13.9
6. Other Inputs	690,146	23.0
7. Contingencies	250,000	8.3
TOTAL	3,000,000	100.0
Incremental Cost	100,000	

JAPAN FUND FOR POVERTY REDUCTION

**JFPR Grant Proposal
Background Information**

A. Other Data	
Date of Submission of Application	26 September 2007
Project Officer	Betty Wilkinson, Rural Development Specialist
Project Officer's Division, E-mail, Phone	Agriculture, Environment and Natural Resources Division, Central and West Asia Department (CWAE), bwilkinson@adb.org , 632-4664
Other Staff Who Will Need Access to Edit/Review the Report	CWAE, Ryutaro Takaku (alternate) rtakaku@adb.org CWAE, Ma. Roanna Santos (assistant) rssantos@adb.org
Sector	Agriculture and natural resources
Subsector(s)	Water resource management
Theme	Environmental sustainability
Subtheme(s)	Natural resources conservation
Targeting Classification	General
Was JFPR Seed Money used to prepare this grant proposal?	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>]
Have SRC comments been reflected in the proposal?	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>]
Name of Associated ADB Financed Operation(s)	40046-01 Khatlon Province Flood Risk Management
Executing Agency	Lead nongovernment organization operating in Tajikistan, at completion of tender
Grant Implementing Agencies	Nongovernment organizations operating in Tajikistan, by tender

B. Details of the Grant

1. Description of the Components, Monitorable Deliverables/Outcomes, and Implementation Timetable

Component A	
Component Name	Participatory Disaster Preparedness
Cost (\$)	\$2,450,000 (including contingency)
Component Description	Under this component, nongovernment organizations (NGOs) will help poor communities in about 130 flood-prone villages in Farkhor, Hamadoni, Vose, Pyandzh, and Shuroabad districts of Khatlon province to become both proactive about reducing flood and other disaster risks, ¹ and ready to address floods and other disasters when they occur. The component ² involves both participatory processes and ongoing interactive training mechanisms provided by NGOs to communities in a

¹ In the project area, the following risks are experienced at frequencies requiring preparedness—earthquakes, floods, mudslides, and embankment and land area collapses.

² Nonstructural measures will be undertaken, not construction of dams or embankments.

	<p>comprehensive package to enable (i) community awareness of flood and other disaster risks, along with actions to mitigate risks where possible; (ii) community early warning via monitoring of potential disaster risks, including water levels and other means; (iii) community preparation to address disasters when they occur, including risk management plans, emergency supplies, first aid, and evacuation plans; (iv) community consideration of coping methods for post-disaster recovery; and (v) community liaison with local governments and the Committee for Emergency Situations (CES) to validate, strengthen, and reinforce flood monitoring systems, evacuation drills, annual information campaigns, communication chains, equipment, and other means of maintaining preparedness.</p>
<p>Monitorable Deliverables/Outputs</p>	<ol style="list-style-type: none"> 1. Comprehensive community participatory flood and other disaster management system (CPDMS) ready for implementation, with full documentation and training modules. 2. CES and local government village disaster management plan joint certification systems established for the plans made under the CPDMS. 3. Percentage of total villages with realistic risk awareness and mitigation plans, early warning of flood risk and response plans, and postflood recovery plans certified by CES. 4. Percentage of all villagers who can successfully describe their roles in (i) flood and disaster mitigation; (ii) risk monitoring; and (iii) actions in case of a flood or other disaster.
<p>Implementation of Major Activities (planned months for grant activities)</p>	<ol style="list-style-type: none"> 1. Tender and award contract to NGOs operating in Tajikistan to undertake JFPR grant activities (months 1–7). 2. Finalize NGO technical and learning package, incorporating community risk awareness and mitigation, early warning and response, and recovery aspects (months 8–10). 3. Complete village agreements with <i>jamoat</i> (administrative unit below a district) and district governments and CES on how to engage and validate systems and complete drills and education plans (months 8–13). 4. Design and deliver education systems for schoolchildren and adults on (i) risk identification, (ii) mitigation, (iii) early warning, (iv) preparation for floods and/or disasters, and (v) coping strategies post-flood and/or disaster, to prepare and implement plans in package (months 9–42). 5. Communities develop and discuss risk maps, participatory rural appraisal, and local knowledge (months 11–25 iteratively). 6. Communities complete flood and/or disaster plans per package, validate villagers' understanding and agreement, and receive CES confirmation of plans iteratively when they have been prepared (months 14–34). 7. Communities implement risk mitigation plans and engage

	<p>in risk mitigation mechanisms (months 15–47).</p> <p>8. Communities establish and engage in risk monitoring process (river level checks, local knowledge sharing, monitoring of flood protection construction) and validate their plans against flood risk maps(months 15–47).</p> <p>9. Facilitate the identification and establishment of safe havens and options for water sources and toilets in selected highest risk areas (months 26–46).</p> <p>10. Establish a household and village emergency materials system (months 15–29).</p> <p>11. Undertake seasonal evacuation/response drills with agreed response times and results measured in months 17–19, 29–31, 41–43.</p> <p>12. Implementing agencies ensure communities assume full self-management (months 35–48).</p>
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Component B	
Component Name	Silviculture Flood Protection
Cost (\$)	\$550,000 (including contingency)
Component Description	<p>This component will enable selected villages behind the Hamadoni embankment construction area to re-establish the natural tugai³ forested vegetation of the area and to utilize its ability to stabilize and protect the underlying soils, sands and gravels to greatly reduce flood damage. It will also provide a sustainable fuel source for households with wood from coppiced trees and will re-establish a habitat for native wildlife. Nearby project villages will benefit from improved information on the role of traditional forests and opportunities for tree planting and ecosystem rehabilitation. The work will entail (i) arranging sustainable tugai reforestation in a 22-kilometer (km) x 2 km strip along the Pyanj embankment in Hamadoni, managed by local households over the long term; (ii) providing the selected communities with the capacity to develop and implement tree-based environmental flood protection plans in their own villages; (iii) supporting mechanisms for villages to engage in cross-learning on environmental issues through children’s environmental camps and cross-village visits; and (iv) providing small-scale support to develop vegetable greenhouses to improve household incomes while the tugai area is regenerating.</p>
Monitorable Deliverables/Outputs	<ol style="list-style-type: none"> 1. Area in hectares (ha) planted in tugai to reinforce embankments or facilitate flood protection of village areas. 2. Percentage of community members with good knowledge of silviculture flood protection purposes and methods. 3. Production and income increases due to introduction of improved varieties of vegetables for kitchen gardens and

³ Tugai forests are characteristic tertiary relict floodplain forest along the rivers and in the deltas in arid Central Asia and western People’s Republic of China (PRC). They are very well-adapted, being able to withstand long droughts or seasonal flooding. Tugai contribute to the conservation of biodiversity and to the shading and protection of settlements and water courses against storms, airborne pollutants, salts, and erosion. They contribute to household incomes, providing wood and fodder, medicinal plants, game animals, and pasture for domestic animals. Tajikistan has the highest level of deforestation in Central Asia, and the tugai forests are particularly at risk.

	products from newly forested areas.
Implementation of Major Activities (planned months for grant activities)	<ol style="list-style-type: none"> 1. Tender and award contract to NGOs operating in Tajikistan to undertake JFPR grant activities, including this component (months 1–7). 2. Develop restoration master plan incorporating the components that make up the tugai ecosystem (e.g., areas for ponds, reeds, grasses, timber for coppicing). Master plan will incorporate legal mechanisms so households have certain land use rights over maintained areas (months 8–13). 3. Harvest seeds to develop seed bank and plant stock with nurseries. Support establishment of private nurseries (first autumn of the project to month 40). 4. Design and deliver training to adults and children for (i) options for habitat restoration and forest regeneration to establish silviculture flood protection plans, (ii) nursery methods, (iii) planting and care of trees, (iv) planting and care of supplemental herbs and plants, and (v) vegetable greenhousing (months 9–43). 5. Negotiate with district, <i>jamoat</i>, and affected communities in Hamadoni to get firm agreement on land use contracts and village labor agreements for sustainable forestry (months 10–15). 6. Undertake land contouring in accordance with restoration master plan (month 16). 7. Plant trees in season (estimated to be months 18–20 and 30–32), and herbs and other plants (months 30–32, 41–43) in Hamadoni strip behind embankment. 8. Support nearby project villages to (i) learn about silviculture flood protection, (ii) make silviculture flood protection plans, and (iii) implement the plans (months 12–45). 9. Arrange village cross-learning trainings and visits and children’s environmental camps (months 13–46).

2. Financing Plan for Proposed Grant to be Supported by JFPR

Funding Source	Amount (\$)
JFPR	3,000,000
Government	470,000
Other Sources (Executing agency and participating communities)	510,200
Total	3,980,200

3. Background

1. More than half of Tajikistan lies above 3,000 meters, and several of the country's mountain ranges contain glaciers and peaks exceeding 7,000 meters. Every year landslides, mudslides and avalanches cause significant damage to irrigation systems and transportation and communication infrastructure, and cover valuable lands with alluvial deposits. Tajikistan's principal flood risk is from mudslides, mountain lake outbreaks, and river embankment collapses. Mudslides usually originate in rain showers; very large floods and mudslides can originate in the outbreak of mountain lakes, which store large volumes of water behind unstable natural barriers. Tajikistan's Lake Sarez is one of the most potentially dangerous such lakes in the world. There are also significant flood risks due to the gradual collapse of Soviet-era embankments on the Amu Darya river system (including the Pyanj River in the south) and a number of tributary rivers. According to World Bank figures from 2004,⁴ the probability of economic losses from a natural disaster impact exceeding \$860 million in 1 year is about 0.5%. This would equal over a third of of the country's current gross domestic product. The probability of annual losses exceeding \$380 million is about 5%.

2. Unfortunately the regulatory and institutional environment is too weak to reduce this risk. National land use and water resources laws exist but there are no laws addressing earthquake, flood, or landslide risks. The government has a small disaster relief fund, and the CES maintains a very limited communications system, an information management system, a radar system, and an early warning system built only for critical facilities and locations. There are insufficient emergency operations, mitigation plans, or training and exercise programs. The budget for emergency and disaster management is modest. No satisfactory river gauge systems are in place. Villages and rural areas have little or no preparedness or planning for hazards and risks. While Tajikistan is a signatory to the Hyogo Framework for Action to improve national capacities to address disaster risk, the implementation process is in its early stages.

3. In the years since independence, the fertile flood plains adjacent to the Pyanj, Kizilsu, and Yakhsu rivers in Khatlon Province have become increasingly vulnerable to floods. Lives have been lost and flood embankments, houses, canals, land, roads, and bridges have been destroyed. Severe floods were experienced in Vose and Farkhor districts in 1998 and 1999. Smaller floods since then have caused further damage. A major flood in 2005 in Hamadoni destroyed assets with an estimated value of over \$18 million.

4. The probability of flooding in certain parts of the Pyanj and its tributaries may now be higher than 50% (i.e., an average chance of flooding once in 2 years). This leaves communities, infrastructure and valuable agricultural land highly vulnerable to further loss or damage. In effect, there is no flood protection in some vulnerable places. Flood risk from the Pyanj River will be reduced to about 1% for many communities in Hamadoni (an average chance of flooding once in 100 years) after works are completed under the associated Khatlon Province Flood Risk Management loan project⁵ by March 2009. Unfortunately, the flood risk along the tributaries continues to be high, and other segments of the Pyanj have higher flood risks because of the erosion, slumping, and breaching of older embankments caused by the highly active and unstable channels of these rivers. A high risk of flooding will continue to be a threat to villages in the loan project area and other districts along the Pyanj River.

5. The project emerged from recognition by rural households in the project area that they will continue to face regular and increasing risks of floods and other disasters, and must address these issues on a community basis to reduce potential losses. Rural households are

⁴ World Bank. 2004. *Preventable Losses: Saving Lives and Property Through Hazard Risk Management*. Washington DC.

⁵ ADB. 2007. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to Tajikistan for the Khatlon Province Flood Management Project*. Manila (2356-TAJ).

75.2% of the total population of 584,000 in the project area.⁶ They depend on cotton, livestock, and household vegetable plots for subsistence and livelihoods. According to preliminary poverty mapping data, the level of poverty in the project districts is 79%, 14% above the national average. Households headed by women are a particular challenge, as over 45% of men have left the area to find work in the Russian Federation. In 2005, the average nominal monthly salary in the project districts was 52 somoni (about \$15), which is lower than the average national level by 37%. These households are poor by any measure, and cannot afford to lose any of their assets or face declines in the status of their health or safety.

6. A social survey was conducted as part of project preparation for the associated loan for the Khatlon Province Flood Risk Management Project, using focus groups, interviews, and questionnaires. The results show the high socioeconomic impact of flooding on poor households. A severe picture emerges of substantial loss of livelihoods. Whereas only 7% of the interviewees believed their income had been below average prior to flooding, 71% believed it had fallen below average after flooding. This correlated with interviewee estimates that grain production had fallen by 70%, vegetables by 83%, and grapes by 95%. Collectively, 38% of the interviewees' cattle stock and 58% of their poultry was lost, 96% of their houses were seriously or moderately damaged, and 54% of their land was flooded and inundated with debris. Collateral damage in the form of increased disease, deteriorating drinking water, water-logging of land, and increased economic emigration was also reported.

7. The key problem faced by poor households is that they cannot afford to lose anything, yet their residence in a flood-prone area means their risks of losing assets, production, and physical well-being are high. With so little available cultivable land, relocation is not a realistic option. Under the loan, embankment construction rehabilitation will take place in Hamadoni and some feasibility work will be done on the Yaksu and Kasilsu tributaries. The loan will also undertake activities at the national level, such as flood mapping. However, there is also a strong need for information and support in villages to ameliorate flood risk. This would enable village households to manage this risk and limit damage when a flood or other disaster does occur. Although some communities in the project area have a form of flood warning system, only 62% of those interviewed were aware of this and only 53% had actually received warnings. There was a consensus among those surveyed that early warnings could help poor families to limit flood damage. Respondents felt that for early warnings to be disseminated successfully in villages, an improvement in telecommunications would be essential, with an organized system supplemented by alarms and sirens in high-risk zones.⁷ Other suggestions from the focus groups and interviewees were that emergency procedures should be published as posters and that evacuation drills should be stepped up, particularly for women. Finally, the survey pointed out that households were very willing to organize and undertake structural and other activities to help lower flood risk, including tree planting, if they had better understanding and knowledge of how to undertake this work.

8. District governments, the CES, and the Ministry for Water Resources and Land Reclamation have overlapping responsibilities for flood preparedness and management. Disaster preparedness and response starts with the local *jamoat*, which is the lowest level of official government. District governments also have a key role in responding to disasters, helping people to receive immediate help, and addressing structural damage. The CES has officers in districts to work with district governments on these issues. The levels of

⁶ Data based on detailed social survey undertaken for the Khatlon Province Risk Management loan, which included Kulyab, Hamadoni, Vose and Farkhor districts. Changes in the project area at the specific request of the Embassy of Japan to Tajikistan, removing Kulyab district and adding Pyandzh and Shuroabad districts along the Pyanj River, may result in slightly but not substantially different statistics.

⁷ Funds will be provided in the associated loan, Khatlon Province Flood Risk Management, for purchase of relevant equipment and communications for villages.

preparedness for disasters and of finances to respond to floods and other disasters are very limited in the project area, despite encouraging early work by both local governments and NGOs. However, this work has not been sufficiently effective because (i) it has not been carried out over a long enough period to ensure sustainability; (ii) it is not coordinated with the CES; and (iii) it is presented as basic preparedness rather than a comprehensive package of awareness, mitigation, monitoring, preparedness, and coping strategies for the entire cycle.

9. What is needed is a comprehensive package of substantive village-level awareness and mitigation of disaster risk and hazards measures, blended with effective monitoring and preparedness to address floods and other disasters, and coping mechanisms when disasters strike. Better understanding and systemic arrangements between villages, NGOs and local governments, the CES, and Ministry of Water Resources and Land Reclamation are also needed. The loan will cover government institutional strengthening. Village capacity building is proposed under this JFPR grant, and this will involve significant additional human resources, training, and technical support as well as certification systems and appropriate coordination and equipment for village readiness. The design and monitoring framework is in Appendix 1.

10. Field interviews with district and *jamoat* leaders and with representatives of 15 communities during late May 2007 confirmed that there is significant interest in establishing coherent, district strategies for village-based participatory flood management, and in supporting silvicultural flood protection work in village areas.

4. Innovation and Knowledge Sharing

11. There are three sets of innovations under this project. First, recent literature shows that NGOs are still struggling to establish a common set of good practice systems for disaster risk management at the community level. While much has been done in general community awareness and preparedness, there is no comprehensive package of measures to strengthen awareness and mitigation, early warning and preparedness for floods and other disasters when they occur, and plans for coping mechanisms for post-disaster recovery. The project will enable a group of NGOs to develop an overall common package for disaster risk management at the community level which they will then install, test and adapt. After 3 years of implementation, this system should be ready for adaptive replication nationally and in other countries with similar concerns.

12. Second, in very poor countries like Tajikistan, government resources are limited and are likely to remain so for some time to come. Under such conditions, it is unrealistic to expect the Government to be able to finance all aspects of significant flood and other disaster management programs. The Government can provide overall water management and responsiveness to disasters, but it is still developing its own capacity at national and regional levels. The Government has neither the ability nor the resources to address both national and village-level disaster preparedness capacity at the same time. This project and its partner loan will enable ongoing dialogue between different levels of government, NGOs, and communities about who can do what, and what can be paid for by whom. The loan and grant also provide for significant capacity development for both government officials and villagers. This will allow a realistic set of expectations to develop and a model of tripartite partnership roles and responsibilities to emerge. Such a model can be considered for adaptive replication elsewhere.

13. Third, parts of the flood-prone areas are now gravel lands and washlands which are natural conduits for floodwaters, and can substantially increase risks of flooding. The most important and threatened environmental habitat within the area, the tugai forest, flourishes on such land areas and is a major control on the river system. The willows, poplars, and reeds have evolved to survive inundation by flooding and they stabilize the noncohesive gravels. If

planted in areas such as those behind the existing and repaired embankments and in selected and appropriate gravel washlands, this natural forest can operate as a silviculture flood protection mechanism to resist any flows that may breach the embankments in future. Replanted tugai can also be managed by households or communities to establish an additional source of income and fuel on a sustainable basis, adding to their incomes. Critically, households will be supported in understanding the roles of trees in stabilizing soil and diverting water flows, and the need to plant trees for this purpose while also potentially increasing income. This project will enable the rehabilitation of a traditionally biodiverse forest habitat to be tested to see how it can lower flood risk, enabling potential replication elsewhere.

5. Sustainability

14. There are two aspects of sustainability to component A, the disaster preparedness portion. The first is that communities will be supported to create their own assessments of their circumstances and their own plans to address disasters and floods, to monitor their likelihood, and to ameliorate the risks where they can. In this way, from the start, the communities will be making decisions about what they can and will do to address these issues for themselves. Second, from the beginning there will be links to the CES, which operates down to the district level, and to both district and *jamoat* local government officials, who will interact with and validate the community approaches and observe and learn how communities can respond to these issues. Local government will also run drills and work with the CES on annual refresher training for evacuations and risks just before the spring season, incorporating this seasonal pattern into villagers' lives. Communities will be able to better balance what they can and cannot do, and there will be more understanding of shared responsibilities and needs between communities, the CES, and local governments on flood management issues. The project is a capacity building exercise, and thus communities can continue using these new skills over time on their own.

15. With regard to the silviculture flood protection in component B, once the areas are established the tugai will start to establish itself more effectively, providing more effective embankment strength. Planting of trees in one or two other identified areas will be the essence of a community-created and driven silviculture flood protection plan for the participating villages. This process will be reinforced as part of the existing system of *khashar* (community labor contribution for self help) during spring seasons. Work to assist villagers to engage in nurseries and other private ventures may help create income and reinforce good silviculture practices. In Lake Sarez, it has been noted that villagers have been continuing to plant significant numbers of trees after project completion using their own resources. Grass, wild plants, and other items of economic value will also grow within the forest and can be sustainably harvested, adding to the incentives for villagers to carry out self-management and upkeep of the tugai. Training in sustainable harvesting methods and community and local government review will help reinforce habits that will protect the tugai.

6. Participatory Approach

16. Under the JFPR grant, participation is the core focus of the work. Communities will be provided with information and encouraged to take charge of the process and express their own views, opinions, and commitments for each step. Participatory rural appraisal work will focus villagers' attention on the risks. They will make their own risk preparedness and evacuation plans and risk mitigation plans, and will decide how they wish to monitor for flood risk. Local knowledge and experience will be extensively used in this process. Training will take place in village areas using interactive tools to ensure understanding. A key aspect of the activities will be consultations between villagers, NGOs, the CES, and local governments on the plans and

activities to reinforce understanding, agreement, participation of all relevant persons, and support by government bodies.

17. Capacity building is a common thread throughout this grant. NGOs will strengthen the capacity of villages to organize themselves to address risk, to be aware of the risks they face, and to plan how to manage the risk before, during, and after any possible disasters. At the end of the project, villagers will be knowledgeable, have the physical and intellectual tools to manage disasters, and be clearer about their rights and responsibilities and their relationships with local and national government bodies regarding disaster management. On the government side, officers will be aware of the capacities of villagers and NGOs to address any disaster, having defined the relative roles of villagers, NGOs, local and national government. They will recognize the relative resource bases and capacities to respond, and be regularly certifying preparedness and running drills so they can ensure ongoing readiness. All parties will be better at monitoring risks and preventing, as much as possible, damage and loss of life. More frequent interactions and more clarity about relative roles and responsibilities will also increase trust between villagers, NGOs, and local and national government.

18. Evidence from the regional United Nations Development Programme reviews of the United Nations International Strategy for Disaster Reduction suggests that incorporation of risk management into overall development programs increases the likelihood of success. The implementing agencies will be required to ensure incorporation of disaster risk management into their existing programs in the project area in accordance with good practice.

Primary beneficiaries and other affected groups	Other key stakeholders
<p>Villagers in flood-prone areas. Provide time and personal labor to engage in consultation processes, draw up and implement flood and other disaster risk management and mitigation plans, and engage in risk monitoring and simulation exercises for response preparedness. Up to five villages will establish silvicultural flood protection plans and engage in related cultivation and care of trees and gardens. Villagers will benefit by increasing their understanding of their risks and preparation to address them and in case of flood occurrence. Silviculture flood protection and related vegetable cultivation will provide sources of fuel and income over time.</p> <p>Nongovernment organizations. Undertake project activities and provide links to their other funded programs, covering health, education and food security, among others. Deepen household capacity to help prevent, monitor the probability of, and recover from disasters. Improve capacity to standardize and deliver training and support for disaster preparedness, mitigation, and response in case of floods and other emergencies.</p>	<p>Local government. Develop better understanding with communities about disaster risks and issues, and more clarity on responsibilities and relationships between communities and various levels of local government before, during, and after a flood or other disaster. Roles in monitoring and mitigation of flood and other risks will also become clearer. This will lead to more accurate budget and other resource projections on disaster prevention and mitigation, as well as during such events. It will also improve relationships with villages and their trust in the local government.</p> <p>Committee for emergency situations. Strengthen relationships with local government at the <i>jamoat</i> level and with communities. Start to develop through the JFPR project some standardized approaches for community-level disaster preparedness and response.</p> <p>Development partners in disaster management. Increase collaboration and standardize certain types of community approaches. Develop a better sense of the total timeframe required for Tajik rural</p>

<p>Improve sustainability of such work through a focused, medium-term program. Strengthen relationships and understanding of roles and responsibilities with the CES and government generally on this issue.</p>	<p>communities to maintain an appropriate level of disaster preparedness. Enable clarity on the specifics of flood management processes on the part of all engaged development partners and NGOs.</p>
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7. Coordination

19. The Rapid Emergency Assessment and Coordination Team (REACT) is a group of implementing agencies, largely NGOs, formed to coordinate first disaster relief and, subsequently, disaster management activities throughout Tajikistan. Based in Dushanbe and with regional coordination offices in five areas, REACT has recently facilitated partner negotiations to work in each geographic zone. The REACT project is funded by the United Nations Development Programme through 2009.

20. The European Commission has been providing funds for up to 15-month periods under the Disaster Preparedness for European Commission Humanitarian Aid program (currently in cycle 4, €5 million to 15 organizations) to NGOs to work with communities in disaster preparedness. One round of this activity was completed in a few of the project villages in 2006, although it was insufficient to prepare the villages adequately for disasters, particularly floods. The European Commission has agreed to support close coordination with the JFPR grant and to avoid overlapping of funding.

21. The United Nations International Strategy for Disaster Reduction is the focal point in the UN system to promote links and synergies between, and the coordination of, disaster reduction activities in the socioeconomic, humanitarian and development fields, as well as to support policy integration. It serves as an international information clearing house on disaster reduction, developing awareness campaigns and producing articles, journals, and other publications and promotional materials related to disaster reduction. It conducts outreach programs through its regional units, including that for Central Asia based in Dushanbe.

22. The Asian Disaster Reduction Center (ADRC) is an agency funded by the Government of Japan based in Kobe that specializes in assisting developing nations in disaster risk management. ADRC has agreed to undertake the project monitoring, evaluation, and dissemination of results of project innovations. The agreement will be further developed and finalized once financing is confirmed.

23. The Japan International Cooperation Agency (JICA) has been developing a master plan for the Pyanj River area, which includes pilot testing of an evacuation framework for the Hamadoni district. During the design of the proposed ADB loan and this JFPR grant, discussions were held between the consultants to help ensure a consistent approach. At the inception of this grant, it is proposed that the final master plan be reviewed against the JFPR project. Adjustments may then be made if necessary to help ensure substantive consistency between the JFPR project as implemented and the master plan.

24. Meetings were held between the ADB project team leader for the associated loan and the charge d'affaires of the Japanese Embassy to Tajikistan in May 2007. Detailed discussions were undertaken between the ADB JFPR design team and both the embassy and JICA during the subsequent period, and concurrence was reached on this final document.

8. Detailed Cost Table

25. Appendix 2 contains the detailed cost estimates.

C. Linkage to ADB Strategy and ADB-Financed Operations

1. Linkage to ADB Strategy

26. The draft government *Poverty Reduction Strategy Paper* of March 2007⁸ provides for the Government to undertake measures to improve the condition and raise the effectiveness of the agricultural and water resource management infrastructure. There are plans to restore and renovate irrigation and drainage systems and to plant trees and shrubs. The Poverty Reduction Strategy Paper draft explicitly mentions an objective to promote environmental sustainability, including a targeted increase of 5% in forest cover. Appendix 3 contains the Summary Poverty Reduction and Social Strategy (SPRSS).

27. The ADB Country Operations Business Plan (September 2007)⁹ states that the country strategy of rural development for poverty reduction remains relevant, and that projects are focused toward this goal. The JFPR project is consistent with both documents, given its focus on disaster preparedness, reducing risks of losses for rural households (and thus alleviating poverty) while improving families' ability to improve forest cover and increase biodiversity as a method of flood protection.

28. The ADB country strategy and program¹⁰ emphasizes rural development and regional cooperation. The program also emphasizes policy reforms in the agriculture, energy, transport, and social sectors. The program has been responsive to emergency situations such as the breakdown of the Pyanj embankment, facilitating the Government's response and deepening its ability to address structural and other aspects of flood management. The project supports agricultural production and rural development by enhancing community capacity to address risk.).

Document	Document Number	Date of Last Discussion	Objective(s)
PRSP		March 2007	Update of national poverty reduction strategy for the 2008–2010 period
NDS draft		March 2007	Establishment of the national development strategy 2007–2015
COBP		September 2007	Statement of ADB country program and rolling project development plan

⁸ Government of Tajikistan, 2007. *Poverty Reduction Strategy of the Government of Tajikistan*. Dushanbe.

⁹ ADB. 2007. *Country Operations Business Plan Tajikistan 2008-2010*. Manila.

¹⁰ ADB. 2003. *Tajikistan Country Strategy and Program 2004-2008*. Manila.

2. Linkage to Specific ADB-Financed Operations¹¹

Project Name	Khatlon Province Flood Risk Management
Project Number	40046-01
Date of Board Approval	5 October 2007
Loan Amount	\$22.0 million

3. Development Objective of the Associated ADB-Financed Operation

29. The proposed impact of the Khatlon Province Flood Risk Management Project is to reduce the risk of potential flood damage due to river flow in Hamadoni by 99% and in Kulyab, Vose, and Farkhor by 25% by 2018. The proposed outcome is flood frequency reduced from 1 in 10 years to 1 in 100 years in Hamadoni by 2013, and nonagricultural flood losses in project area decreased by 40% by 2013, with a baseline in 2007. The following outputs are proposed under the Project. Additional flood protection embankments of 4.7 km will be completed on Pyanj River, Hamadoni segment by March 2009. The project will install capacity to provide operation and maintenance (O&M) services on time, at required standards, and within budget for the flood embankment on Pyanj by March 2009. Prioritized methods for cost-effective tributary flood prevention infrastructure repair in the project area of Vose and Kulyab will be provided by December 2008. Flood risk will be documented in area maps for distribution and information by December 2010. Successful interpretation of risk maps and other information into effective flood preparedness plans will be completed by December 2010. A functional hydrometeorology network of 10 climate stations and 10 river gauges for the country will be in place by December 2012. Real-time flood forecasting models for Pyanj, Yakhsu and Kizilsu rivers will be in operation by 2012. Finally, work to establish an effective system of flood preparedness on the government side will be in place by 2012, including community-to-national communications networks, monitoring and early warning systems, and mediation measures for floods. This loan is effective and works have started.

30. The link between the Khatlon Province Flood Risk Management Project and the JFPR grant is clear. The loan project will provide structural work for the flood management program, as well as the equipment and the official Government flood management plan and program capacity development. The JFPR grant will support communities in three of the four loan project districts and two adjoining districts on the Pyanj River to respond to flood risks by developing community-specific and comprehensive packages and validating them with local governments and the CES. Communities can then implement flood preparation, monitoring, and mitigation plans as appropriate for their own areas and resources. The loan project and JFPR grant teams are expected to work closely together to ensure that communities become proactive in flood management, but are appropriately connected to Government systems to enable effective early warning, monitoring, and responses to floods when they occur. The JFPR silviculture flood protection component will add significantly to the sustainability of the Hamadoni embankment, which forms the majority of the project investment. Placement of a JFPR coordinator in the loan project's project monitoring office (PMO) is intended to facilitate the engagement and

¹¹ The direct link is to ADB. 2007. *Report and Recommendation of the President to the Board of Directors for a Proposed Loan to the Republic of Tajikistan for the Khatlon Province Flood Risk Management Project*. Manila. There are also proposed small links to the education and health sector reform projects for safe haven locations in selected villages, as well as to a RETA for Afghan–Tajik management of the river. ADB. 2008. *Pyanj River Basin Flood Management*. Manila (6452-REG). ADB. 2003. *Report and Recommendation of the President to the Board of Directors for a Proposed Loan to the Republic of Tajikistan for the Education Sector Reform Project*. Manila (2053-TAJ); ADB. 2003. *Report and Recommendation of the President to the Board of Directors for a Proposed Loan to the Republic of Tajikistan for the Health Sector Reform*. Manila (2054-TAJ).

relationship between the loan and the JFPR projects. A memorandum of understanding (MOU) providing for close collaboration between the Government and NGOs and between the loan and JFPR projects is included as Appendix 4.

4. Main Components of the Associated ADB-Financed Operation

No.	Component Name	Brief Description
1.	Institutional and Legal Reforms	1.1 Creation of an authority to specify, supervise and coordinate flood-related activities of relevant agencies 1.2 Clarification of legal responsibility for dissemination of flood warnings and design, construction, and maintenance of flood protection structures, as well as flood plain structures
2.	Flood Risk Maps	2.1 Preparation of detailed flood risk maps based on new topographic social, environmental and economic surveys and computer modelling of flood inundation areas
3.	Flood Preparedness	3.1 Using flood risk maps, designation of flood risk zones, and establishment of Government flood preparedness programs, including awareness information campaigns and evacuation drills
4.	Flood Forecasting	4.1 The Agency for Hydrometeorology's network of climate stations and river gauges in the project area will be rehabilitated and modernized, and flood forecasting models based on the updated system will be completed
5.	Flood Warning	5.1 The accuracy and timeliness of the existing flood warning triggers in the project area will be improved so that in future each flood risk area receives warnings with a lead time of at least 3 hours and with an accuracy of 0.5 m in forecast flood water depth
6.	Flood Protection	6.1 Rehabilitation of a further 4.7 km of damaged flood embankments and the reinforcement of 3.4 km of adjacent irrigation canal embankments will be delivered 6.2 Feasibility studies for the rehabilitation of the flood damaged embankments of the Yakhsu and Kizilsu rivers will be delivered

5. Rationale for Grant Funding versus ADB Lending

31. Activities being undertaken under the JFPR grant are based at the village level and include community organizing, planning, and implementation of activities, which will be self-financed. Much of the work is capacity development, for which NGOs are currently far better suited than the Government, a fact which Government has recognized by not undertaking significant levels of direct disaster or flood management training at the community level to date. The skills in disaster management at the village level will be incorporated by NGOs under the JFPR, but will be sustained by the drills and simulations which the Government will learn how to

manage under the associated loan.¹² The work in silviculture flood protection is relatively recent and still experimental, although it has a long history of success in other locations. Accordingly the activities would be better addressed as a grant.

D. Implementation of the Grant

32. The Project will be implemented over a 4-year period. It will start about 1 September 2008 and be completed about 31 August 2012. The indicative implementation schedule is in Appendix 5.

33. The implementation of the Project will be guided by the project steering committee (PSC) which will also direct activities of the loan. The PSC is located in the President's office, and consists of the first deputy prime minister (chair), minister of water resources and land reclamation, minister of agriculture and environmental protection, and the chair of the CES, with representatives from the executing agency (EA) and implementing agencies (IAs) in attendance. The PSC will be responsible for (i) helping ensure coordination between the JFPR and loan projects on matters of high level policy or institutional arrangements; (ii) reviewing and evaluating project performance; (iii) reviewing project audits; and (vi) facilitating coordination between NGO implementers and relevant government offices. The PSC will meet twice a year during the same time as meetings for the loan for ease of management. The JFPR coordinator will document all meetings and decisions and help to ensure that decisions made are followed up.

34. The NGO that wins the tender will be the EA as well as being an implementing agency. The EA will be responsible for (i) disbursing ADB proceeds and ensuring ADB procurement and consultant selection requirements are met; (ii) maintaining appropriate accounts, including reports on withdrawal applications and disbursement; (iii) consolidating IA reporting and submitting to ADB progress and other reports in formats agreed upon with ADB; (iv) ensuring timely submission of audited accounts of the Project to ADB; and (v) serving as the focal point for IA coordination, ADB's project administration activities, and first point of contact for the loan project management office (PMO), the JFPR coordinator, and relevant offices of the Government.

35. The JFPR coordinator in collaboration with the loan PMU and the EA will (i) support ADB in implementing the tender process leading to the selection and contracting of the NGO team, and supervise the EA and IA implementation; (ii) ensure that the Project is implemented in accordance with the design; and (iii) ensure effective coordination of all activities and agencies involved. The JFPR coordinator is a national consultant, will have a limited operational budget separate from the loan project, and be physically located in the loan PMO in Ministry of Water Resources and Land Reclamation for ease of liaison with government bodies. The PMO will provide transport, logistical support and government liaison for the JFPR coordinator.

36. Supported by the loan, the Government will carry out a number of tasks that interact with the JFPR grant activities. It will develop risk mapping at the national level and share results with the JFPR grant implementing agencies; ensure agreed common work activities for disaster management at *jamoat* and district levels; distribute village disaster preparedness equipment financed under the loan to the project area villages under the grant; ensure CES certification of flood mitigation, evacuation, and other community plans in the project villages; and provide regular information systems and fund timely annual evacuation simulation exercises for the project villages.

¹² This lesson was reconfirmed in ADB. 2005. *Technical Assistance to the Kingdom of Cambodia for the Community Self-Reliance and Flood Risk Reduction*. Manila (TA 4574-CAM).

37. The Ministry of Water Resources and Land Reclamation (as the loan Executing Agency) and the PMO are committed to coordinating the activities of the loan and the JFPR grant closely. The JFPR coordinator will be housed in the PMO, and will enjoy full support and regular interactions with officials of both the PMO and project implementation units to help ensure coordination. The PMO director and, where needed, the minister will facilitate good working relationships between the executing and implementing NGOs under the JFPR and the relevant government agencies, particularly the five project area district governments and the CES. Appendix 4 provides a copy of the MOU confirming this support.

38. The Project will require 321 person-months of consulting services (12 person-months of international consultants and 309 person-months of national consultants). Consultants will be recruited by ADB in accordance with ADB's *Guidelines on the Use of Consultants* (2007, as amended from time to time). ADB will recruit the JFPR coordinator as an individual national consultant. All other consultants will be recruited under a single quality- and cost-based selection (QCBS) to a consortium of national and international NGOs with current field operations in the country. The QCBS selection process will be completed by ADB with the JFPR coordinator and PMO support; ADB will issue the contracts for consultants. Summary terms of reference for all consultants are provided in Appendix 6.¹³ All procurement under the JFPR grant will be conducted in accordance with ADB's *Procurement Guidelines* (2007, as amended from time to time). All disaster preparedness equipment will be donated to villages or ongoing NGO local operations at the end of the project period, while any computers or furniture will be provided to the area *jamoats* for disaster preparedness on an ongoing basis at the end of the project period.

39. The proceeds of the JFPR grant will be disbursed according to ADB's *Loan Disbursement Handbook* (2007, as amended from time to time). The funds flow arrangement details are in Appendix 7. The imprest fund procedure will be used to establish one imprest account to be opened by the EA. There will be second-generation imprest accounts for IAs, which will be established at a bank or banks acceptable to ADB after structural clearance by the Controllers Department. The need for the second generation imprest accounts is anticipated because of the long physical distances between banks and EA and IAs in the field, and the anticipated capacity of the NGOs that are IAs to meet adequate accounting and internal controls, which will be confirmed during the bidding process. The imprest accounts will be established and managed in accordance with ADB's *Loan Disbursement Handbook*. The initial deposit to the imprest account will not exceed \$300,000 (10% of the total grant amount). ADB's statement-of-expenditure procedure will be applied to reimburse eligible project outlays and to liquidate and replenish imprest accounts for individual payment transactions of up to \$10,000 equivalent. The EA will submit requests to ADB for replenishment. The EA and IAs will be responsible for demonstrating (i) full financial and operational accountability for funds to all relevant development partners, and (ii) financial controls to prevent commingling of funds. Development partners may request joint meetings with ADB, the EA and IAs at inception and thereafter to ensure the financial and accounting systems and procedures are satisfactory. Retroactive financing of up to \$500 is approved from the incremental costs budget to enable prompt advertisement of the EOIs for qualified persons and NGOs operating in Tajikistan, some of which do not have regular Internet access.

40. The EA and all IAs will prepare project accounts and have them audited at least once a year. The audit report from the external auditor must be submitted to ADB (Controller's

¹³ Existing NGO staff performing roles as listed in the detailed budget will be reviewed for suitability during the tender process and will have clear terms of reference which reflect their roles and times under this project as well as for other activities cleared by ADB before contract finalization. Recruitment procedures for new staff to be paid wholly or partly under this project will be cleared for suitability by ADB before contract finalization.

Department with a copy to the Office of Cofinancing Operations) not more than 6 months following the end of the fiscal year or project closing date (whichever comes first). The report should include certified copies of the audited accounts and financial statements and the report of the auditors relating to said statements, including the auditors' opinion on the use of the JFPR funds, and the operation of any imprest account and the application of any statement-of-expenditures procedure authorized under the JFPR project.

41. As this pilot project has potential for adaptive replication in a number of areas, it will be carefully documented and monitored. The NGO partners will engage in a promotional process that may include, but not be limited to, media presentations of the process, printed materials, website information with regular updates, and publications. At the start of the project, the EA and IAs will work closely with ADRC and the Government to provide a communications and adaptive research strategy linked to implementation and monitoring under the project. ADB's NGO Center may provide additional support in this regard and will be consulted further at inception.

42. Since component B will involve land use rights and sustainable stewardship of the replanted area, a legal counsel will be recruited for the first year and will work with the sociologist and the land use planner to establish a legal, socially workable, environmentally sustainable stewardship arrangement for ongoing tugai maintenance by the local villagers. This arrangement will be confirmed by the district Government and documented as a potential model for local management of biodiversity sites in the country.

1. Implementing Agencies	A consortium of NGOs operating in Tajikistan, to be tendered
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2. Risks Affecting Grant Implementation

Type of Risk	Brief Description	Measure to Mitigate the Risk
Flood	Floods may occur during the project period before communities are fully prepared to respond	Early start-up; focus on preparation first, then mitigation and monitoring; close links with loan project
Government– NGO coordination	Organizations may not be able to clarify and agree on different roles and responsibilities	Loan and grant with same PSC; JFPR coordinator located in PMO of loan project; regular meetings between the JFPR team, CES and PMO. MOU defines relationships
Land arrangements for tugai reforestation	Land arrangements for households to manage the tugai reforestation sustainably may be difficult to arrange on a legal basis	Legal counsel to explore with national and local governments suitable arrangements and to place these in the agreement for initial implementation before silviculture planting work starts
Silviculture establishment	It may not be possible to establish tugai areas fully due to animal encroachment, flooding, or insufficient knowledge of care	Training for all communities before planting, and ongoing local monitoring; fencing of key areas

3. Incremental Costs

Component	Incremental Bank Cost
Amount requested	\$100,000
Justification	Incremental costs of \$100,000 under this JFPR will be provided for the specific involvement of the Asian Disaster Reduction Center (ADRC) and for advertising costs for consultant recruitment. The ADRC was established in Kobe, Japan in 1995 to facilitate exchange of disaster reduction experts from each country and concerned bodies, accumulate and provide disaster reduction information, and carry out research into multinational disaster reduction cooperation. Tajikistan is one of 28 member countries. The ADRC has extensive experience with disaster preparedness mechanisms and mitigation work. The ADRC and a private subcontractor, Tokyo Electric Power Services, will be recruited under single-source selection because of their unique ability to provide support for system design for disaster prevention, monitoring and evaluation, and technical documentation of successful approaches for dissemination. In addition, a small amount of retroactive financing will be provided to enable advertisement in local newspapers to help ensure NGOs and qualified persons receive the request for expressions of interest, due to relative lack of Internet access in the country. The additional incremental costs are justified as the project is complex and requires resources beyond those provided by the regular administrative budget.
Type of work	ADRC will provide technical support to the executing agency and implementing bodies to help standardize approaches and establish and operate a monitoring and evaluation system to effectively document and measure the innovations for later dissemination of lessons learned.

4. Monitoring and Evaluation

Key Performance Indicator	Reporting Mechanism	Plan and Timetable for Monitoring and Evaluation
Comprehensive community participatory flood and other disaster management system (CPDMS) ready for implementation, with full documentation and training modules	Progress: semiannual review reports CPDMS document	Semiannual review Annual review, per timeline
CES and local government village disaster management plan certification systems established for the plans made	Semiannual and annual reports Midterm review	Village baseline survey of preparedness levels Semiannual reports,

Key Performance Indicator	Reporting Mechanism	Plan and Timetable for Monitoring and Evaluation
under the CPDMS	Final report and field assessment	validated in field by project coordinator Midterm review and final report validated by project officer and JFPR coordinator
Percentage of total villages with realistic risk awareness and mitigation plans, risk early warning and response plans, and post-flood recovery plans certified by CES	Semiannual and annual reports Midterm review Final report and field assessment	Baseline month 9 Semiannual reports validated in field by project coordinator Midterm review and final report validated by project officer and JFPR coordinator
Percentage of all villagers who can successfully describe their roles in (i) flood and/or disaster mitigation; (ii) risk monitoring; and (ii) actions in case of a flood or other disaster.	Semiannual and annual reports Midterm review Final report and field assessment	Baseline month 9 Semiannual reports validated in field by project coordinator Midterm review and final report validated by project officer and JFPR coordinator
Hectares of designated area in sustainable tree-based flood reducing ecosystems	Semiannual and annual reports Midterm review Final report and field assessment	Baseline month 9 Semiannual reports validated in field by project coordinator Midterm review and final report validated by project officer and JFPR coordinator

5. Estimated Disbursement Schedule

Fiscal Year (FY)	Amount (\$)
FY2008	80,000
FY2009	840,000
FY2010	850,000
FY2011	890,000
FY2012	340,000
Total Disbursements	3,000,000

Appendixes

1. Design and Monitoring Framework
2. Summary Cost Table and Detailed Cost Estimates
3. Summary Poverty Reduction and Social Strategy
4. Memorandum of Understanding between ADB and the Ministry of Water Resources and Land Reclamation
5. Implementation Arrangements
6. Summary Terms of Reference: Consulting Services and Packages
7. Fund Flow Arrangement

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Impact Lowered flood and other disaster risks for poor households</p>	<p>Reduced loss of life, property, and assets when floods and disasters occur when compared against baselines</p>	<p>Community emergency services (CES) event reports, government records</p>	<p>Risk Floods may occur during the project period before communities are fully prepared to respond</p>
<p>Outcome Village capacity developed so villages are aware of, and can protect against, prepare for, and cope with floods and other disasters in 130 flood-prone villages in Hamadoni, Farkhor, Vose, Pyandzh, and Shuroabad districts of Khatlon province</p>	<p>95% of all villagers over age 14 can successfully describe and fulfill their roles in addressing floods and other disasters by September 2012</p>	<p>Knowledge, attitude, practice surveys compared against baselines</p>	<p>Assumption Villagers will be willing to spend time and resources to engage in and operate the flood and disaster management program in sustainable manner</p>
<p>Outputs Established nongovernment organization system for community participatory disaster and flood awareness and mitigation, early warning and response, and recovery with partnered government certification system</p> <p>Understanding of and participation in certified community participatory flood and disaster management system by residents in 130 risk-prone villages</p> <p>Establishment of sustainable 4,400 ha silviculture flood protection area in Hamadoni</p>	<p>Comprehensive community participatory flood and other disaster management system ready for implementation by July 2009</p> <p>CES and local government joint village disaster management plan certification systems prepared by October 2009</p> <p>At least 95% of total villages with flood risk maps, realistic mitigation plans, and post-flood recovery plans certified by CES by July 2011</p> <p>4,400 ha of sustainable tree-based flood-reducing ecosystems established by June 2012</p>	<p>Project records</p> <p>Public announcements regarding program</p> <p>Program document</p> <p>CES, district government records</p> <p>Project records CES, district government records</p> <p>Project records, including photographic evidence</p>	<p>Assumptions The local governments and CES will engage fully and in a timely manner in the certification, evacuation simulations, and support for safe havens</p> <p>Government will incorporate risk mapping and other exercises into its formal disaster management process</p> <p>Risks Organizations may not be able to clarify and agree on different roles and responsibilities</p> <p>There may be legal impediments to land arrangements allowing households to manage the tugai reforestation sustainably</p> <p>It may not be possible to establish the tugai areas fully because of animal encroachment, flooding, or insufficient knowledge of care</p>

Activities with Milestones	Inputs
<p>Component A</p> <ol style="list-style-type: none"> 1. Finalize NGO comprehensive community participatory flood and other disaster management system technical and learning package by July 2009. 2. Complete village agreements with <i>jamoat</i>, district government, and the CES on how to engage and validate systems. Complete drills and education plans by October 2009. 3. Design and deliver education programs for schoolchildren and adults to prepare villagers to implement the community flood management systems (design by September 2008, delivery by March 2012). 4. Communities develop and discuss risk maps, participatory rural appraisal work, local knowledge by October 2010. 5. Communities complete flood and/or disaster plans per package, validate villager understanding and agreement, and seek and receive CES confirmation of plans by July 2011. 6. All communities implementing risk mitigation plans and engaging in risk mitigation mechanisms by July 2012. 7. Communities establish and engage in risk monitoring process, starting October 2009 through end of project. 8. Facilitate the identification and establishment of safe havens and options for water sources and toilets in selected highest-risk areas by July 2012. 9. Establish household, village emergency materials by February 2011. 10. Undertake evacuation/response drills with agreed response times and results measured periodically to season through end of project. 11. Implementing agencies ensure community full self-management by August 2012. 	<p>ADB JFPR Grant \$3,000,000. Equipment and Supplies \$847,680 Training, workshops, seminars, public campaigns: \$555,990 Consulting Services: \$238,739 Grant Management: 417,445 NGO direct service delivery and indirect costs; villager planting food costs \$690,146 Contingencies \$250,000</p> <p>Government \$470,000 Equipment and Land \$350,820 Training, workshops, seminars, public campaigns: \$117,443 Grant Management: \$1,737</p>
<p>Component B</p> <ol style="list-style-type: none"> 1. Develop restoration master plan incorporating the various components that make up the tugai ecosystem by October 2009. 2. Harvest seeds in order to develop seed bank and plant stock with nurseries. Support establishment of private nurseries during the first autumn of the project. 3. Design and deliver training to adults and children through April 2012. 4. Finalize agreements with district, <i>jamoat</i>, and affected communities on land use contracts and village labor agreements by November 2009. 5. Undertake land contouring in accordance with restoration master plan by January 2010. 6. Plant trees in Hamadoni strip behind embankment by April 2010, plant herbs and other plants by April 2012. 7. Support nearby project villages to (i) learn about silviculture flood protection, (ii) make silviculture flood protection plans, and (iii) implement the plans through May 2012. 8. Arrange village cross-learning training and visits and children's environmental camps by June 2012. 	<p>Communities \$476,200 Equipment and Supplies \$466,000 Training, workshops, seminars, public campaigns: \$10,200</p> <p>NGOs \$34,000 Equipment and Supplies</p>

CES = Committee for Emergency Services, JFPR = Japan Fund for Poverty Reduction, NGO = nongovernment organization.

Source: Asian Development Bank.

SUMMARY COST TABLE AND DETAILED COST ESTIMATES
Table A2.1: Summary Costs

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> ↓ Inputs / Expenditure category </div> <div style="text-align: center;"> → Grant Components </div> </div>	Total (\$)	Share of Total (%)
1. Civil Works:		0.0
2. Equipment and Supplies	847,680	28.3
3. Training, workshops, seminars, public campaigns:	555,990	18.5
4. Consulting Services:	238,739	8.0
5. Grant Management:	417,445	13.9
6. Other Inputs: NGO direct service delivery and indirect costs; villager planting food costs	690,146	23.0
7. Contingencies (maximum 10%)	250,000	8.3
Total JFPR grant- financed	3,000,000	100.0
Government contribution	470,000	
Other Contributions: NGOs software costs for risk maps	34,000	
Community's Contributions	476,200	
Total Estimated Costs	3,980,200	
Incremental Costs	100,000	

JFPR = Japan Fund for Poverty Reduction, NGO = nongovernment organization.
 Source: Asian Development Bank estimates.

Table A2.2: Detailed Cost Estimates

This information was deemed confidential in accordance with paragraph 126.10 of ADB's Public Communications Policy.

SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

A. Linkages to the Country Poverty Analysis	
Is the sector identified as a national priority in country poverty analysis?	Is the sector identified as a national priority in country poverty partnership agreement?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>The <i>Poverty Reduction Strategy Paper</i> (PRSP), published in 2007, is the Government's coordinated framework for addressing poverty in Tajikistan,¹ and for improving access to and raising the quality of services for the poor. Supporting communities to plan for and address floods and other disasters in the project areas will significantly reduce risks of loss, particularly for women and for poorer households. This provides protection for poor rural households who have no cushion to absorb risk, and improves public participation and partnerships with the government.</p> <p>The project area incorporates the districts of Hamadoni, Vose, Pyandzh, Shuroabad, and Farkhor in the fertile flood plains adjacent to the Pyanj, Kizilsu and Yakhsu Rivers in Khatlon Province. Rural households in this area depend on cotton, livestock, and household plots for both subsistence and livelihood. According to poverty mapping data from the associated loan,² the level of poverty in the project area is 79%, over 14% above the national average. Households headed by women are a particular challenge, as over 40% of men have left the area to find work in the Russian Federation. In late 2005, the average nominal monthly salary in the project districts was 52 somoni (about \$15), lower than the average national level by 37%. In the project districts, a five to six month delay in payment of salaries is common. Workers receive seasonal in-kind payment (wheat, and cotton sticks for heating and cooking) instead of salaries. In difficult crop years (such as 2008) poor households suffer badly.</p> <p>According to the population census in 2000 and an impact assessment on indigenous peoples, 70% of the project area population is ethnic Tajik, 25% Uzbek, and 5% other ethnic groups (most of whom are married to ethnic Tajiks.) Generally non-Tajik populations speak Tajik, enjoy the same rights as the Tajik majority, regularly intermarry with Tajiks, and are fully integrated into institutional, cultural, and economic processes in the country.</p> <p>In recent years the project districts have become increasingly vulnerable to floods because of insufficient embankment maintenance, as well as insufficient disaster preparedness in communities. When there are floods, poor households are deeply affected, losing homes, assets, livestock, essential papers, and even lives. In addition, agricultural crops are spoiled, and often agricultural land loses productivity and can even be lost. Health and social services are negatively affected. Recovery is slow, and dependence on relatives for support erodes the narrow cushions of other families. A major flood in 2005 in Hamadoni District caused losses worth an estimated \$17.8 million.</p> <p>The PRSP incorporates attention to flood management as part of infrastructure and environment, and agriculture. It recognizes the critical nature of adequate infrastructure as a means for reducing poverty. The PRSP provides for both a national strategy for disaster management and appropriate specialized and appropriately equipped services to study, forecast, and provide zoning and monitoring of the detrimental impact of potential sources of natural disasters. Effective water management is an essential element of the PRSP.</p>	
B. Poverty Analysis	Targeting Classification: General

¹ Republic of Tajikistan. 2007. *Poverty Reduction Strategy Paper* (PRSP). Dushanbe.

² ADB. 2007. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to Tajikistan for the Khatlon Province Flood Management Project*. Manila (L2356-TAJ). Area of the loan includes three of the five JFPR districts; adjoining district data is expected to be comparable.

Poverty is endemic in the rural zones of the project area where most households are located. Women in the area are largely engaged in agricultural labor. Men migrate to the Russian Federation since there are no employment opportunities in the project districts. Field surveys revealed that the main sources of income of the interviewed households are money remittances from labor migrants (27,4%), salaries and wages (18.7%), occasional earnings and proceeds from selling of agricultural products (27,4%). Households spend up to 80% of their incomes on food such as flour products (41% of funds), meat and meat products (14.4%) and vegetables (12.3%). Most food comes from subsistence farming and humanitarian aid. Rural households have identified the following factors as causing poverty in their area: (i) natural disasters or floods causing property losses (land, yields, houses, livestock); (ii) lack of drinking and irrigation water, and problems with drainage causing salinization; (iii) unemployment (lack of non-agricultural job opportunities); (iv) lack of and unfair distribution of agricultural lands between households (households plots and farm lands); and (v) debts of farms to futures companies (investors) for cotton production.

Surveys revealed the following adverse impacts of previous floods on living standards in the project districts, underscoring the importance of flood management.

- **Loss of personal property, houses and livestock and consequent damage to family living conditions.** Before the most recent floods, no one considered their living conditions to be *very bad* and only 5.7% of respondents assessed their living conditions as *bad*. After the flood, 42.4% of respondents considered their living conditions *very bad* and 37.1% *bad*.
- **Significant declines in income levels.** Before the floods, 59.8% of respondents assessed their income level as *medium*, while 6.4% stated that their income was *below medium* and 0.4% marked *considerably below medium*. After the flood, only 26.5% of respondents assessed their income as *medium*, whereas 36% assessed their income level as *below the medium*, and 35.2% indicated *considerably below medium* incomes.
- **Higher levels of disease.** After floods, health conditions deteriorate because of increased humidity in houses, the bad quality of the drinking water, and anxiety. In the project areas, cases of malaria and typhoid have been reported after floods. The number of people suffering from rheumatism has increased. Women's diseases, high blood pressure, and kidney diseases became more prevalent among village residents.
- **Lower agricultural yields.** Rising groundwater level results cause vegetables to rot and drinking water quality to deteriorate.
- **Decline in access to essential services.** Floods destroy roads, schools, power transmission and communication lines, and irrigation canals.
- **Increased level of labor migration.** During the focus group discussions, more than 80% of the respondents noted that, as a result of the floods, the number of labor migrants increased. People used remittances to try to recover from the consequences of the flood.

The JFPR project addresses the core issues raised by households in the project areas in two important ways. First, it supports households to adopt a holistic system to understand and assess hazards and risks of floods and other disasters systematically, mitigate them, monitor risks, address floods and other disasters when they occur, and be prepared for recovery. Second, the project provides silvicultural flood protection via selective restoration of natural ecosystems to strengthen riverbank and household areas against floods, and to provide income to nearby households based on these resources.

The population of the five districts will benefit directly from the project as it will increase awareness of the potential for floods and other disasters and their effects, and improve preparedness for flood events and readiness to act quickly to limit losses. It will increase the understanding of of post-flood requirements to speed recovery and limit disease, nonagricultural losses, and damage to household goods. Finally, work to create both community cohesion and better relations between different levels of government through the JFPR will enhance understanding by both sides of conditions and concerns of the poor, and lead to better information flows on how to address issues of poverty related to disasters.

C. Participation Process

Is there a stakeholder analysis? Yes No

Participatory stakeholder consultations were conducted with representatives of local government (chairs of district and *jamoat* leaders and their deputies), district emergency and civil defense authorities, heads of committees for affairs of women and children and social issues under districts, international partners (United Nations Development Programme, Oxford Famine Relief, Japan International Development Agency, Mission East, the European Commission, Focus), local nongovernment organizations (NGOs) and community-based organizations, and the general population. The

consultations addressed the main social and economic problems of the area and the possible mechanisms of community direct engagement in structural and other flood management activities.

Is there a participation strategy? Yes No

Under the JFPR grant, communities will be provided with information and then encouraged to take charge of the process and express their own views, opinions, and commitments for each step in the process. Under participatory disaster preparedness, Participatory rural appraisal work will focus villagers' attention on the risks. Villagers will make their own risk preparedness and evacuation plans and risk mitigation plans and they will decide how they wish to monitor for flood risk. Local knowledge and experience will be extensively used in this process. Training will take place in village areas using interactive tools to ensure understanding. A key aspect of the activities will be consultations between villagers, NGOs, the Committee for Emergency Situations (CES), and local governments to reinforce understanding, agreement, and participation of all relevant persons.

D. Gender Development

Strategy to maximize impacts on women:

To engage women in decision making, all levels of government will have at least one professional woman directly involved in project activities. To ensure women have access to information, at least 40% of the people attending courses will be women, and for community activities the figure will be 50%. At least 35% of NGO staff working on the project will be women engaged in project activities as officers and leaders.

Has an output been prepared? Yes No

E. Social Safeguards and Other Social Risks

Item	Significant/ Not Significant/ None	Strategy to Address Issues	Plan Required
Resettlement	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None		<input type="checkbox"/> Full <input type="checkbox"/> Short <input checked="" type="checkbox"/> None
Affordability	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
A. Labor	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
B. Indigenous Peoples	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Other Risks and/or Vulnerabilities	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

MEMORANDUM OF UNDERSTANDING BETWEEN ADB AND THE MINISTRY OF WATER RESOURCES AND LAND RECLAMATION

ASIAN DEVELOPMENT BANK

PROPOSED JAPAN FUND FOR POVERTY REDUCTION GRANT TO THE REPUBLIC OF TAJIKISTAN

FOR

COMMUNITY PARTICIPATORY FLOOD MANAGEMENT MEMORANDUM OF UNDERSTANDING

1. A Fact-Finding Mission¹ of the Asian Development Bank (ADB) for the proposed Japan Fund for Poverty Reduction (JFPR) Grant for the Community Participatory Flood Management Project (the Mission) visited the Republic of Tajikistan from 21 May to 6 June 2007 to develop a framework for the proposed Community Participatory Flood Management grant. The Mission reviewed field operations of NGOs and the Government in Hamadoni and Farhor, discussed the circumstances of the recent Chartuz floods with villagers and district officials, and consulted with key NGOs and Government officials as well as donors involved in disaster management.

2. A Memorandum of Understanding (MOU) between the Mission and the Government was signed by the Minister of Finance on behalf of the Government on 20 June 2007 (see Attachment 1). The MOU summarized the main findings of the Mission and the discussions with GOT with regard to the potential impacts and outcomes of the proposed grant and also the scope, financing, implementation arrangements, and consulting services, and processing schedule. A wrapup meeting was held on 19 June 2007 with the Chairman of the Committee for Emergency Services at which the cost, scope, activities, and implementation arrangements were agreed. These issues were also discussed with Mr. M. Davlatov, State Economic Advisor in the Office of the President, on 20 June 2007.

3. The proposed JFPR grant will operate in coordination with the Khatlon Province Flood Risk Management Project proposed for financing through a loan from ADB's Special Fund resources. The memorandum of understanding for the proposed loan project between ADB's loan appraisal mission and GOT was signed by First Deputy Prime Minister Gulomov on 13 June 2007 (see Attachment 2).

4. In accordance with the two MOUs for the proposed loan and JFPR Grant, the Ministry of Water Resources and Land Reclamation and its Project Management Office (PMO) confirm their willingness and commitment to closely coordinate the activities of the proposed Khatlon Province Flood Management Project and the proposed JFPR Community Participatory Flood Management grant. In particular it is agreed that:


- (i) The Project Steering Committee (PSC) will be the same for both the proposed loan and proposed JFPR grant, and the PSC will consider reports, progress, problems, and actions for both the loan and grant during the same meetings;
- (ii) The JFPR Coordinator will be housed in the PMO, and will enjoy full support and regular interactions with officials of both the PMO and Project Implementation Units to help ensure coordination;
- (iii) The PMU Director and, where needed, the Minister, will facilitate good working relationships between the executing NGO FOCUS and the implementing NGOs ACTED, Oxfam, Mission East, and Khuliston, under the proposed JFPR and the relevant government agencies, particularly the four project area district governments and the CES, to ensure agreed common work activities, distribution of equipment financed under

¹ The Mission comprised of B. Wilkinson (Rural Development Specialist), mission member for the loan fact finding and leader of the JFPR development.

the loan, CES certification of flood mitigation, evacuation, and other community plans, and rapid resolution of any outstanding issues.

5 The Mission wishes to express its sincere gratitude for assistance rendered by the GOT and key stakeholders. The GOT has requested a Russian version of this document be provided to them together with the English copy. The English version shall be the controlling document for all purposes, and ADB assumes no responsibility for the accuracy of the Russian translation.

Received and Confirmed by


Saidi Yokubzod
Minister for Water Resources and
Land Reclamation
The Government of Tajikistan


R. Barotov
Project Management Office
Ministry for Water Resources and Land
Reclamation
The Government of Tajikistan

Submitted by


Betty Wilkinson
Mission Leader, Rural Development Specialist
Agriculture, Natural Resources, Environment
Division
East and Central Asia Department
Asian Development Bank

In Dushanbe on 27th August 2007

SUMMARY TERMS OF REFERENCE: CONSULTING SERVICES AND PACKAGES

1. The Project will require 321 person-months of consulting services (12 person-months of international consultants and 309 person-months of national consultants). This appendix discusses the terms of reference for the consulting package, and provides summary terms of reference for the consultants. All consultants will be selected in accordance with ADB's *Guidelines on the Use of Consultants* (2007, as amended from time to time).
2. A national consultant will be the full-time JFPR coordinator, and will work inside the project management office (PMO) of the associated loan to ensure management and coordination. A single contract will provide all other implementation consulting services, which include (i) development and delivery of a holistic system of disaster preparedness, including technical flood and other risk maps; and (ii) development and restoration of 4,400 ha of eroded land to traditional forest for flood prevention.
3. ADB will recruit the JFPR coordinator as an individual national consultant. All other consultants will be recruited under a single quality- and cost-based selection (QCBS) to a consortium of national and international NGOs with current field operations in the country. The QCBS selection process will be completed by ADB with support from the JFPR coordinator and the PMO. ADB will issue the contracts for consultants. All procurement under the JFPR grant will be conducted in accordance with ADB's *Procurement Guidelines* (2007, as amended from time to time). All disaster preparedness equipment will be donated to villages at the end of the project period, while any computers or furniture will be provided to the area *jamoats* for disaster preparedness on an ongoing basis at the end of the project period.

Table A6: Consulting Services Inputs

Position	Person-months
International Consultants	
Risk modeling specialist	12
Subtotal International Consultants	12
National Consultants	
JFPR coordinator (to be housed in loan PMO)	36
Risk analysis staff	30
Senior geologist	30
Senior engineer	30
Senior social mobilizer	30
Senior GIS staff	30
National forestry coordinator and botanist	22
Zoologist	4
Sociologist	24
Reforestation specialist	24
Land use planning specialist	24
Legal counsel	12
Hydrogeologist	6
Unallocated technical services	7
Subtotal National Consultants	309
Total Inputs	321

A. International Consultant

4. Risk Modeling Specialist. The specialist will:

- (i) identify any gaps in the current risk model and develop solutions closing them;
- (ii) work on testing, validating, and applying the risk assessment approach and model in valleys and villages (both those that have been previously assessed and those yet to be assessed);
- (iii) prepare presentations on the risk assessment approach and model for other disaster-management stakeholders in Tajikistan;
- (iv) provide training on the use and application of the risk model to other staff;
- (v) work with the geographic information system (GIS) team to introduce appropriate modifications into the disaster management GIS database based on the risk model; and
- (vi) perform any other duties as required.

5. The risk modeling specialist will have a university degree in the geosciences (geology, geomorphology, hydrogeology, or physical geography) and/or any other related field. He or she should be experienced in using GIS software and applications, in working on research projects involving cross-functional teams in an international context, and in structuring and conducting internet searches. He or she should be fluent in English and preferably in Russian and/or Tajik. He or she should have strong organizational skills and display critical thinking and creativity. The risk modeling specialist must have at least 3–5 years' experience developing disaster risk models in computerized systems in developing countries, and ensuring their successful operation by domestic teams in sustainable ways.

B. National Consultants

6. JFPR Coordinator. The coordinator will:

- (i) facilitate collaboration and communication between the executing agency (EA) and implementing agencies (IAs) and the Government on all matters regarding community disaster management in the project area;
- (ii) function as point of contact for all matters regarding the JFPR project in the country;
- (iii) act as secretary for the project steering committee on JFPR project matters, ensuring biannual meetings cover progress, actions needed, reporting, and coordination between the JFPR and loan projects;
- (iv) coordinate monitoring and related reporting activities with partners, including field visits to observe progress, help document successes, and advise on problems;
- (v) facilitate funds flow, financial reporting, and timely audits by the EA and IAs;
- (vi) manage project activity information flows, including ensuring timely baseline and monitoring arrangements;
- (vii) communicate project activities with key stakeholders;
- (viii) analyze and evaluate any major obstacles during fieldwork and advise on and document recommended solutions;
- (ix) regularly communicate and update the ADB project officer on the progress of work; and
- (x) help to ensure the high quality of the project and its timely completion within the budget.

7. The JFPR coordinator should have at least 3 years' experience in disaster management in Tajikistan, preferably in the field. He or she should have a university degree in a relevant discipline, a clear understanding of NGOs and of the government structure for disaster

management, and have worked with community groups in rural areas. He or she should have strong team skills, assessment and critical thinking and report writing skills, and be well organized. He or she should have proven skills working linguistically in the Tajik context, as well as documentary revision capacity in English and Russian. He or she should have excellent listening and comprehension skills and computer skills in Microsoft Office.

8. **Risk Analysis Consultant.** The risk analysis team consultant will:

- (i) assess and understand the intricacies of the current risk model developed by the risk analysis specialist;
- (ii) prepare presentations on the risk assessment approach and model for other disaster management stakeholders in Tajikistan;
- (iii) work with the risk analysis specialist to provide training on the use and application of the risk model to other staff;
- (iv) work with the GIS team to introduce appropriate modifications to the disaster management GIS database based on the risk model;
- (v) manage the risk assessment information within the disaster management GIS to assist other staff in the decision making process; and
- (vi) perform any other duties as required.

9. The risk analysis consultant should have a university degree in the geosciences (geology, geomorphology, hydrogeology or physical geography) and/or any other related field, be experienced in using geographic information systems (GIS) software and applications, be experienced and successful in working on applied research projects involving a cross-functional team, be fluent in English and Russian and/or Tajik, possess strong organizational skills, critical thinking and creativity, and be experienced in structuring and conducting internet searches.

10. **Senior Geologist.** The senior geologist will:

- (i) prepare for field work activities;
- (ii) take village contours;
- (iii) take coordinates of key points, safe havens, critical facilities, and natural hazard impact zones;
- (iv) take photographs of critical facilities and natural processes;
- (v) gather data for the disaster management baseline survey;
- (vi) prepare topographical base maps for the field works;
- (vii) meet with communities to learn about the history of hazards and disasters in their village;
- (viii) develop sketch maps that include descriptions and conditions of natural hazards;
- (ix) develop sketch maps of village hazards and vulnerabilities;
- (x) complete worksheets for each identified hazard;
- (xi) prepare final sketch maps for each village;
- (xii) conduct post-fieldwork study and documentation, including data and maps;
- (xiii) participate and contribute to the community-based disaster awareness and preparedness training;
- (xiv) take overall responsibility for hazard assessment in each village; and
- (xv) perform other duties as required.

11. The senior geologist should have a minimum of 3 years' experience in geology or in related field, a professional diploma in a related field, and should be fluent in Russian and Tajik (written and spoken). Prior experience developing risk maps is required. Knowledge of English is an asset. He or she should demonstrate critical thinking and creativity, have well-honed computer skills in MS Word and other relevant programs, and be experienced in structuring and

conducting internet searches. Demonstrated capacity to work successfully and sensitively with villagers and as part of a team is required.

12. **Senior Engineer.** The senior engineer will:

- (i) work with geologists, community mobilizers, and the GIS and risk assessment team to prioritize mitigation interventions and develop detailed plans for specific interventions;
- (ii) meet with local communities to identify local needs and to discuss and agree upon mitigation interventions;
- (iii) help local communities to develop initial community-based project implementation plans and identify the required resources as needed;
- (iv) monitor the progress of community-based mitigation projects to see that development is progressing according to schedule and within budgetary guidelines;
- (v) analyze and evaluate major obstacles during implementation and provide solutions;
- (vi) regularly communicate and update the focus project team leader and other partner NGOs on progress;
- (vii) provide monthly progress reports on activities completed;
- (viii) help to ensure the high quality of the project and its timely completion within the budget; and
- (ix) perform other duties as required.

13. The senior engineer should have a minimum of 3 years' experience as an engineer, a university degree in engineering or a related field, with prior experience in risk mapping. He or she should be fluent in Russian and Tajik (written and spoken), with knowledge of English; should demonstrate critical thinking and creativity; have well-honed computer skills in MS Word and other relevant programs; and have experience of structuring and conducting internet searches. Demonstrated capacity to work successfully and sensitively with villagers and as part of a team is required.

14. **Senior Social Mobilizer.** The senior social mobilizer will:

- (i) gather socioeconomic, demographic, and other data;
- (ii) facilitated by the NGO working with the village, conduct individual interviews with village leader(s) and members, group interviews, and discussions with village leader(s) and members to identify and address local needs and ensure their ideas, thoughts, and feedback are captured in disaster preparedness plans;
- (iii) develop and test with partner NGOs village-level basic disaster awareness and preparedness trainings;
- (iv) analyze and evaluate any major obstacles during fieldwork and provide solutions;
- (v) regularly communicate and update supervisors, NGO staff, and other consultants on the progress of work;
- (vi) provide monthly progress reports;
- (vii) help to ensure the high quality of the project and its timely completion within the budget; and
- (viii) perform other duties as required.

15. The senior social mobilizer should have a university degree in sociology and/or a related field with at least 4 years' experience of intensive and successful field work in village and community mobilization and disaster preparedness. He or she should be fluent in Russian and Tajik (written and spoken), and have knowledge of English. He or she should have well-developed writing skills, demonstrate good critical thinking and creativity, and possess good

computer skills in MS Word. Demonstrated capacity to work successfully and sensitively with villagers and as part of a team is required.

16. **Senior GIS Consultant.** The senior GIS consultant will:
- (i) receive data (geographic positioning system (GPS) coordinates, photos of the village hazards, infrastructure, critical facilities, etc) from the team and store it in digital and hard copy format at the GIS department;
 - (ii) design and maintain the geological database for proper arrangement and storage of the data received from the HVA team;
 - (iii) print large format maps for geologists to identify and sketch the village hazard information during field operations;
 - (iv) convert hard copy data to digital format;
 - (v) enter the attribute data (disaster management baseline survey, hazard worksheets) and raster data (scanning of the sketch geological, evacuation, land use maps and photos) into the disaster management GIS;
 - (vi) georeference and digitize the sketch maps using Arc Map application;
 - (vii) prepare, design and produce village disaster management plans;
 - (viii) print and stitch large format maps based on the disaster management GIS data for the HVA team for use during seminars with the villages or other events:
 - (a) hazard map,
 - (b) social map,
 - (c) risk map, and
 - (d) CODANS location map;
 - (ix) prepare and produce other statistical information based on the disaster management GIS data for hazard mitigation project purposes or other events;
 - (x) perform GIS analysis for applications related to the earth sciences and disaster management;
 - (xi) process and analyze remote sensing imagery for applications related to earth sciences, geomorphic processes, and disaster management;
 - (xii) ensure the overall quality control of information and clear processes for many types of data processing;
 - (xiii) ensure that all disaster management GIS hardware and software are properly maintained (including fieldwork laptops, GPS sets, and digital cameras);
 - (xiv) provide advisory and other support to senior program and management staff;
 - (xv) network to stay abreast of, gather, and integrate relevant data from other sources;
 - (xvi) provide internal and external training to staff and partners on the disaster management GIS; and
 - (xvii) perform other duties as required.

17. The senior GIS consultant should have a university degree in GIS, computer science, or in a related field. He or she should have work experience in the study of geomorphic processes in Tajikistan or elsewhere in Central Asia. He or she should have knowledge of and some experience in satellite image and aerial photo interpretation, knowledge of spatial data management and remote sensing (preferably with experience in GIS products and/or other remote sensing software), be experienced in using and analyzing GIS and data from different sources, experienced in handling and analyzing digital remote sensing data, have knowledge and experience in disaster management, be fluent in English, Russian and Tajik (written and spoken), and be experienced in structuring and conducting internet searches. He or she should have demonstrated capacity to work successfully and sensitively with villagers and as part of a team.

18. **National Forestry Coordinator and Botanist.** The botanist will:
- (i) manage all aspects of component 2;
 - (ii) develop a restoration master plan for the tugai designated area of 22 km x 2 km in Hamadoni;
 - (iii) prepare a species list for tugai restoration;
 - (iv) determine final planting densities;
 - (v) prepare estimates of planting stock requirements;
 - (vi) coordinate seed collection;
 - (vii) monitor nursery establishment and plant production;
 - (viii) schedule planting activities;
 - (ix) provide inputs to the long-term management plan;
 - (x) coordinate activities with other project specialists;
 - (xi) arrange and conduct appropriate educational and public awareness training;
 - (xii) work at the ecological camp;
 - (xiii) regularly communicate and update relevant supervisors, NGO staff, and other consultants on the progress of work;
 - (xiv) provide brief monthly progress reports;
 - (xv) help to ensure the high quality of the project and its timely completion within the budget; and
 - (xvi) perform other duties as required.

19. The botanist should have a university degree in biological sciences or equivalent, with prior work experience in revegetation or reforestation in Tajikistan or Central Asia, preferably in tugai but at least in reforestation. He or she must have understanding of or experience in commercial horticulture and nursery techniques, and knowledge of and experience in conducting ecological assessments. Fluency in Russian and Tajik (written and spoken) is required, and English would be an advantage. The botanist must be experienced in conducting training successfully at the village level. Demonstrated capacity to work successfully and sensitively with villagers and as part of a team is required.

20. **Zoologist.** The zoologist will:
- (i) review tugai ecosystems and the habitats they support;
 - (ii) select habitat components that support the overall objectives of the master plan;
 - (iii) provide inputs to the master plan with regard to land use, species composition, and design of habitat components;
 - (iv) provide inputs to the long-term management plan; and
 - (v) undertake assessments and any follow-up report writing.

21. The zoologist should have a university degree in the zoological sciences or equivalent, with prior work experience in the study of habitats in Tajikistan or elsewhere in Central Asia. He or she should be experienced in previous habitat creation or restoration projects, and have knowledge of and experience in conducting habitat assessments. He or she must be fluent in Russian and Tajik (written and spoken), and English would be an advantage. He or she must be experienced in conducting training successfully at the village level. Demonstrated capacity to work successfully and sensitively with villagers and as part of a team is required.

22. **Sociologist.** The sociologist will:
- (i) coordinate community inputs into the restoration master plan;
 - (ii) coordinate community inputs into the long-term management plan;
 - (iii) provide educational and public awareness training;
 - (iv) work with project and local government administration on socioeconomic aspects;

- (v) assess and determine socioeconomic problems and potential solutions regarding the tugai restoration and long-term management;
- (vi) monitor and manage socioeconomic problems linked with ecological aspects;
- (vii) work at the ecological camp, managing design and delivery of training and awards and overall camp activities and results; and
- (viii) undertake all relevant assessments and any follow-up report writing.

23. The sociologist should have a university degree in sociology or equivalent, with at least 3 years' prior work experience in the study of societies and cultures and their interaction with forested areas in Tajikistan or Central Asia. He or she must have knowledge of and experience in conducting habitat assessments and working with villagers. He or she must be fluent in Russian and Tajik (written and spoken), and English would be an advantage. He or she must be experienced in managing and conducting training successfully at the village level and with children. Demonstrated capacity to work successfully and sensitively with villagers and as part of a team is required.

24. **Reforestation Specialist.** The reforestation specialist will:

- (i) coordinate the activities of established nurseries to develop planting materials to ensure timely delivery of planting stock in sufficient quantities;
- (ii) work with communities to establish new nurseries;
- (iii) conduct educational and public awareness trainings;
- (iv) provide inputs into the development of the planting schedule;
- (v) provide inputs into the long-term management plan;
- (vi) coordinate and supervise all works associated with component B;
- (vii) ensure strict observation of the proper reforestation system according to the long-term management plan; and
- (viii) assess and follow-up on report writing.

25. The reforestation specialist should have a professional diploma in botany and biology or horticulture; or extensive experience in commercial horticulture, with at least 3 years' work experience in major revegetation or reforestation projects in Tajikistan or elsewhere in Central Asia. He or she should have knowledge of and experience in conducting biological and botanical assessment. He or she must be fluent in Russian and Tajik (written and spoken), and English would be an advantage. He or she must be experienced in designing, conducting and overseeing training successfully at the village level. Demonstrated capacity to work successfully and sensitively with villagers and on teams is required.

26. **Land Use Planning Specialist.** The land use planning specialist will:

- (i) develop community and family land allocation systems;
- (ii) coordinate land certification requirements;
- (iii) provide inputs to the restoration master plan;
- (iv) develop a long-term management plan for the restoration area;
- (v) design and deliver educational and public awareness training;
- (vi) Undertake research on the project area;
- (vii) make recommendations on the division of the project area into sites;
- (viii) provide explanatory materials and activities to ensure the successful distribution of sites;
- (ix) supervise all arrangements for fencing works;
- (x) supervise work at the ecological camp; and
- (xi) undertake assessment and report writing.

27. The land use planning specialist should have a university degree in geology and geomorphology or its equivalent, preferably with work experience in the study of geology and land in Tajikistan or elsewhere in Central Asia. He or she should have knowledge of and experience in conducting geomorphic assessment. He or she must be fluent in Russian and Tajik (written and spoken), and English would be an advantage. He or she must be experienced in conducting training successfully at the village level. Demonstrated capacity to work successfully and sensitively with villagers and as part of a team is required.

28. **Legal Counsel.** The legal counsel will:

- (i) establish a legal, socially workable, environmentally sustainable stewardship arrangement for ongoing tugai maintenance by the local villagers;
- (ii) assess legal requirements to allocate land to households within the area for reforestation and long-term tugai maintenance;
- (iii) with the land use planner, define and set up arrangements with households so agreement can be reached on legal responsibilities for ongoing maintenance and offtakes on designated land areas;
- (iv) work with the land use planner and designated households for legal aspects of land use certificates issuance; and
- (v) ensure all parties are aware of and can understand and deliver their specific responsibilities under the stewardship and land use certificates.

29. **Hydrogeologist.** The hydrogeologist will:

- (i) research the project area for the bedding of underground water and prepare a geotechnical map of the area with the following assessment information: (a) soil layer evidence and its depth; and (b) water-bearing capacity of the sediments;
- (ii) research project area and prepare a hydrological map of the area with solutions to the following: (a) groundwater depth, seasonal variation of depth (regime); and (b) chemical constitution of ground (all cycles);
- (iii) provide inputs for the development of a land rehabilitation map for the reforestation campaign;
- (iv) monitor hydrogeological activities during reforestation activities for 10 days in one month (total 70 days); and
- (v) provide support and recommendations for (a) educational and public awareness training, (b) planting of young plants, (c) dividing of project area into sites, (d) ecological camps, and (e) assessment and report writing.

30. The hydrogeologist should have a university degree in hydrology or its equivalent, preferably with work experience in the study of hydrological systems in Tajikistan or elsewhere in Central Asia. He or she should have knowledge of and experience in conducting hydrological systems assessment. He or she must be fluent in Russian and Tajik (written and spoken), and English would be an advantage. He or she must be experienced in conducting training successfully. Demonstrated capacity to work successfully and sensitively with villagers and as part of a team is required.

FUND FLOW ARRANGEMENT

1. The proceeds of the ADB loan will be disbursed according to ADB’s *Loan Disbursement Handbook* (2007, as amended from time to time). The imprest fund procedure will be used to establish one imprest account to be opened by the executing agency (EA). The EA will pay all its own costs directly. There will be second-generation imprest accounts for IAs which will be established at a bank or banks acceptable to ADB. The EA will be fully accountable for all expenditures in the IA second generation imprest accounts. The imprest accounts will be established and managed in accordance with ADB’s *Loan Disbursement Handbook*. The initial deposit to the imprest account will not exceed \$300,000, 10% of the total grant. ADB’s statement-of-expenditure procedure will be applied to reimburse eligible project outlays and to liquidate and replenish imprest accounts for individual payment transactions of up to \$10,000 equivalent. The EA will submit requests to ADB for replenishment. The EA and IAs will be responsible for demonstrating (i) full financial and operational accountability for funds to all relevant donors, and (ii) financial controls to prevent commingling of funds. Donors may request joint meetings with the EA/IAs at inception and thereafter to ensure this is satisfactory.

2. ADB will initially channel \$300,000 to the imprest account as an advance for day-to-day project implementation during the inception period based on initial 6-month cash flow projections for the project. ADB will replenish funds every 3–6 months to the imprest account, based on the replenishment requests from the EA and in accordance with ADB’s statement-of-expenditures procedure. Detailed implementation arrangements, such as the flow, replenishment, and administrative procedures will be detailed in the GIM, and be established between ADB and the EA through the JFPR letter of agreement. The schematic fund flow for the JFPR project is shown in Figure A7.

Figure A7: Funds Flow Diagram

