

**ASIAN DEVELOPMENT BANK
Operations Evaluation Department**

PROJECT PERFORMANCE EVALUATION REPORT

IN

TAJIKISTAN

In this electronic file, the report is followed by Management's response.



Performance Evaluation Report

Project Number: 33248
Loan Number: 1714
March 2007

Tajikistan: Emergency Flood Rehabilitation Project

Operations Evaluation Department

Asian Development Bank

CURRENCY EQUIVALENTS

Currency Unit – somoni (TJS)

	At Appraisal (October 1999)	At Project Completion (August 2003)	At Operations Evaluation (October 2006)
TJS1.00 =	\$0.0007	\$0.3235	\$0.2954
\$1.00 =	TJS1,436	TJS3.0908	TJS3.3854

ABBREVIATIONS

ADB	–	Asian Development Bank
CLCND	–	Center for the Liquidation of Consequences of Natural Disasters
DEES	–	Department of Environment and Emergency Situations
DME	–	disaster management expert
EFAP	–	Emergency Flood Assistance Project
OEM	–	Operations Evaluation Mission
PCR	–	project completion report
PIU	–	project implementation unit
SDR	–	special drawing rights
TA	–	technical assistance

NOTE

In this report, “\$” refers to US dollars.

KEYWORDS

tajikistan, disaster, emergency, flood, landslide, lessons, performance evaluation, rehabilitation

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The guidelines formally adopted by the Operations Evaluation Department on avoiding conflict of interest in its independent evaluations were observed in the preparation of this report. P. Darjes and N. Halimova were engaged to provide consulting services for the report.

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BASIC DATA

Loan 1714-TAJ(SF): Emergency Flood Rehabilitation Project

Project Preparation/Institution Building

TA No.	TA Name	Type	Person-Months	Amount (\$000)	Approval Date
TA 3319-TAJ	Flood Disaster Management	ADTA	5.0	205.0	2 Dec 1999

As per ADB

Key Project Data (\$ million)	Loan Documents	Actual
Total Project Cost	6.25	5.85
Foreign Exchange Cost	3.25	4.14
ADB Loan Amount/Utilization	5.00 ^a (SDR3.601)	4.66 (SDR3.600)

Key Dates

	Expected	Actual
Appraisal		18–28 Aug 1999
Loan Negotiations		25–29 Oct 1999
Board Approval		2 Dec 1999
Loan Agreement		22 Dec 1999
Loan Effectiveness	21 Mar 2000	7 Jan 2000
First Disbursement		29 Mar 2000
Project Completion	31 Dec 2001	Dec 2002
Loan Closing	30 Jun 2002	20 Mar 2003
Months (from effectiveness to completion)	21.3	24.0

Borrower Republic of Tajikistan

Executing Agency Department of Environment and Emergency Situations

Mission Data

Type of Mission	No. of Missions	No. of Person-Days
Appraisal	1	26
Inception	1	14
Project Administration		
Special Loan Administration	1	6
Review	3	42
Project Completion Review	1	22
Operations Evaluation	1	39

ADB = Asian Development Bank, ADTA = advisory technical assistance, SDR = special drawing rights, TA = technical assistance, TAJ = Tajikistan.

^a The SDR exchange rate decline from \$1.37 to \$1.25 during project implementation..

EXECUTIVE SUMMARY

In October 2006 an Asian Development Bank (ADB) operations evaluation mission visited Tajikistan to evaluate the 1999 Emergency Flood Rehabilitation Project. The Project was the first ADB disaster and emergency assistance to the country.

Tajikistan is prone to natural disasters. Each year, the country experiences about 50,000 landslides, 5,000 tremors and earthquakes, and hundreds of avalanches and debris flows. In July 1999, intense monsoon rains caused severe flooding and landslides that were unprecedented in intensity and extent. The Government requested ADB assistance to rehabilitate infrastructure and to restore normal life and activity. The Project was designed and approved as emergency assistance to the Government.

The Project was to assist the Government, given its severe budget constraints, in rehabilitating public infrastructure and in coping with the consequences of the disaster. The Project's rationale was to enable quick economic and social recovery by restoring infrastructure to predisaster condition. The Project was in line with ADB's policy on *Rehabilitation Assistance after Disasters* (1989).

The Project's physical outputs included subprojects to restore or construct (i) district roads and bridges, (ii) riverbank protection facilities, (iii) water supply and irrigation facilities, (iv) telephone and power transmission lines, (v) schools, and (vi) resettlement areas. The project outputs at completion substantially conformed to the project design at appraisal.

The actual project cost of \$5.85 million was close to the appraisal estimate of \$6.25 million. This was not surprising as the cost estimates were treated as a budget, to which subproject standards and quality had to be adapted. This meant that rehabilitation, as the title of the Project would suggest, could not be accommodated by available funds. The approximately 9% decline of the exchange rate of special drawing rights (SDR) to the US dollar reduced the availability of funds, rather than the project cost. ADB financed 80% of the total cost, including all foreign exchange costs and a portion of the local cost.

The Project comprised 85 civil works and 64 materials procurement contracts. The civil works were carried out by force account; the construction equipment and materials were procured separately from the civil works. At the time of appraisal, Tajikistan was at an early stage in the transition to a market economy and a competitive contracting industry was nonexistent. Under the circumstances, the chosen procurement modality was appropriate. The Project was completed after 3 years, 1 year later than expected at appraisal. The scope to reduce the implementation time was limited considering the unfamiliarity of the Executing Agency, the Department of Environment and Emergency Situations (DEES), with ADB procedures and the volume of construction work involved in the Project.

The physical condition of the inspected subprojects was mixed. Of 37 subprojects, 57% are rated good to fair, while 43% are rated poor or destroyed. Prior to the disaster, many facilities were already in disrepair and required comprehensive reconstruction, rather than restoration to predisaster condition. The perceived need to maximize the coverage of available funds meant that resources may have been spread too thinly over too many subprojects. A smaller number of subprojects would have made project implementation more manageable and would have enhanced overall performance. Relatively simple construction work, including the restoration of telephone and power transmission lines, is rated as good, and their present state of repair satisfactory.

The Project's objectives of restoring (i) key infrastructure to predisaster condition and (ii) normal livelihood conditions were largely met. Overall, the Project is assessed as successful. This result has to be appreciated in the light of the formidable challenges under which the relief measures had to be implemented, notably the wide geographic distribution of subprojects, the geologic instability of the area where facilities had to be reconstructed, and the capacity and capability constraints of the institutions that had to carry out the relief measures. Subprojects in power and telecommunications performed best and are rated highly successful. The worst performers were subprojects in the water management sector that are rated on the margin between successful and partly successful. Overall, the Project is rated relevant, effective, efficient, and less likely to be sustainable.

The socioeconomic impact survey confirmed that subprojects improved the quality of life in the affected communities. The rehabilitation works allowed normal activities to be resumed with access to places of employment, markets, hospitals, and schools. In general, those affected expressed satisfaction with the relief measures. Most did not regard the relocation areas as permanent and returned to their original homes. Interviewed residents indicated that they were allowed to express preferences with respect to the relocation area. Problems associated with the relocation centers varied and included longer distances to schools and health centers and inadequate access to irrigation and drinking water.

Sustainability of the project outcomes, which has emerged as the key concern, has several different aspects including (i) ADB's previous emergency assistance policy and the funds available under the project loan that could not provide more than quick fixes, rather than sustainable development results; (ii) the recurrent nature of disasters in Tajikistan; and (iii) the generally weak maintenance regime that led to a backlog of deferred maintenance and may have been a contributing factor to the dimension of the disaster. Of the 37 subprojects visited by the OEM, the sustainability of 17 (46%) is rated likely, 10 (27%) less likely, and 10 (27%) unlikely because of their location in geologically unstable areas, their poor physical condition, and the low likelihood of proper maintenance.

ADB provided complementary technical assistance (TA) to develop the capacity for disaster management. However the less than efficient recruitment of international consultants was a major reason for the TA's limited impact on capacity building. The draft disaster management plan, which was the key TA output, has yet to be converted into an operationally useful document.

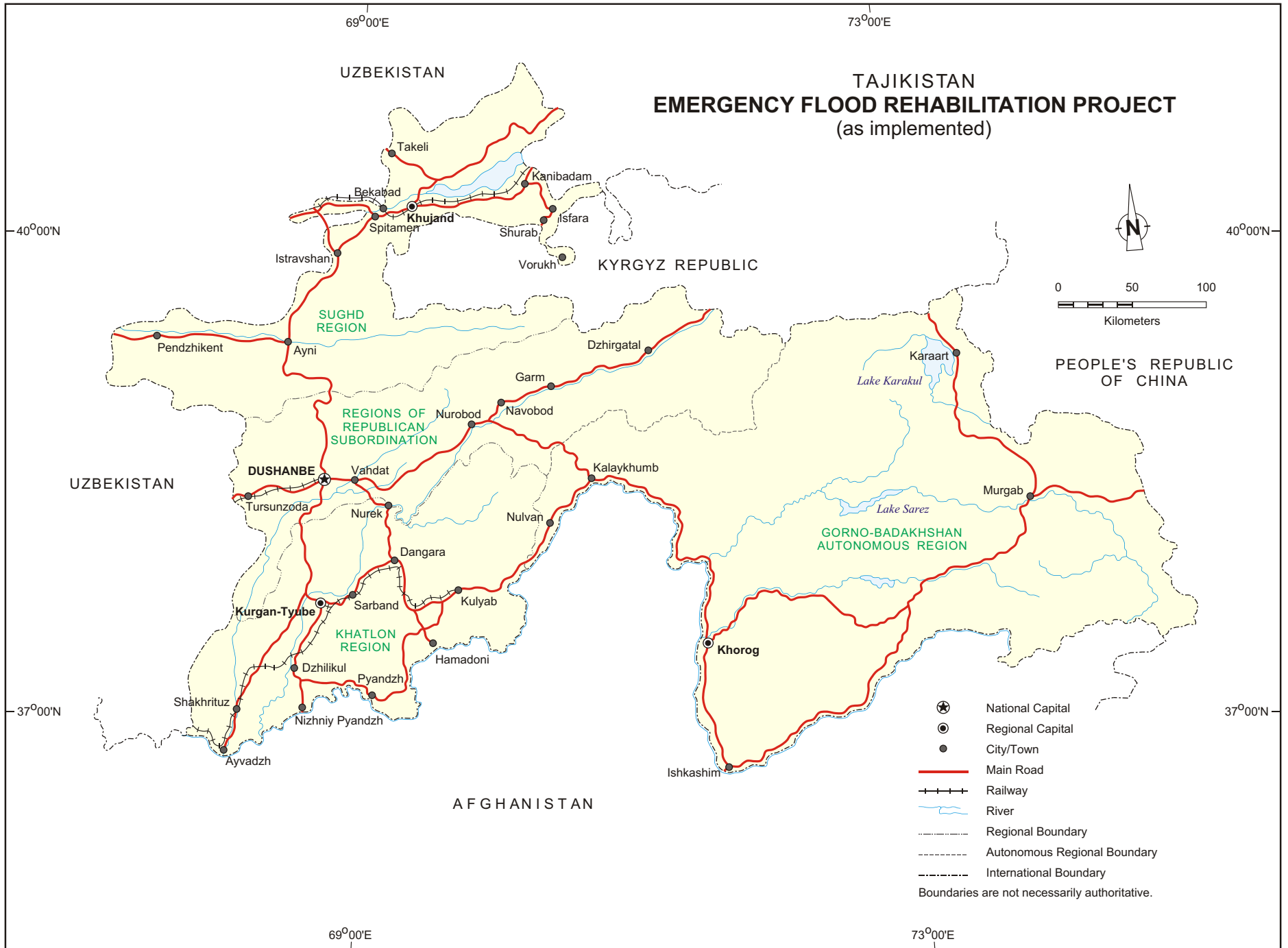
ADB's processing of the loan was expeditious. Subproject formulation and approval arrangements were generally satisfactory. However, greater attention should have been paid to the recurrent nature of flood disasters in Tajikistan, the dimension of the damage inflicted on infrastructure, and the modest construction standards that would ensue from the short implementation period and available financing.

The key issue and lesson identified relate to ADB's role in postdisaster operations. If urgency is imperative and funding limited, the selection of subprojects should be limited to achievable outcomes with a focus on facilities that cost relatively less and are a priority in the context of emergency disaster relief for the affected population. This would apply to resettlement centers and would have meant leaving infrastructure rehabilitation for a separate project. An ordinary project loan would allow a realistic time horizon for adequate funding to achieve sustainable results. ADB's *Disaster and Emergency Assistance Policy* (2004) addresses this issue. The recurrent nature of natural disasters in Tajikistan poses risks that are of a strategic nature and should be addressed at the country level and in regular project loans. As an alternative, a fund dedicated to disaster mitigation could be established.

The OEM identified lessons suggesting that (i) implementation periods should be assessed based on realistic times for project preparation and construction; (ii) disaster relief assistance cannot remedy a situation of deferred maintenance; (iii) the emergency intervention should focus on transitional emergency assistance addressing immediate needs of the population, while infrastructure rehabilitation is left for dedicated project loans; and (iv) public education and awareness are the keys to disaster protection.

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TAJIKISTAN EMERGENCY FLOOD REHABILITATION PROJECT (as implemented)



- National Capital
 - Regional Capital
 - City/Town
 - Main Road
 - Railway
 - River
 - Regional Boundary
 - Autonomous Regional Boundary
 - International Boundary
- Boundaries are not necessarily authoritative.

I. INTRODUCTION

A. Evaluation Purpose and Process

1. In July 1999, continuous monsoon rains caused severe flooding and landslides over a wide area of Tajikistan. The Asian Development Bank (ADB) Flood Emergency Rehabilitation Project, approved on 2 December 1999, was to assist the Government of Tajikistan in restoring physical infrastructure damaged by the disaster.¹ The Project was completed in December 2002. Four years after completion, ADB's Operations Evaluation Department evaluated the Project with regard to its relevance, effectiveness, efficiency, and sustainability. The Operations Evaluation Mission (OEM) visited Tajikistan from 7 to 23 October 2006 and visited 37 of a total of 85 subprojects² (Appendix 1), accounting for 44% of all subprojects and 64% of the value of all contracts. The subprojects were located in the oblasts of Khatlon (16) and Sughd (18), and the Regions of Republican Subordination (3).

2. The OEM prepared this report in accordance with ADB guidelines.³ The evaluation draws upon a review of project documents and other relevant studies, and discussions with ADB staff and officials of government agencies concerned with the Project. It incorporates the results of the OEM's field inspections of a representative sample of subprojects and of beneficiary consultations at selected project sites. A copy of the aide memoire and draft evaluation report was shared with ADB departments and offices concerned with specific subprojects and the Government and the Department of Environment and Emergency Situations (DEES), the Executing Agency. Their views were incorporated where relevant.

3. In June 2004, the project completion report (PCR) rated the Project highly relevant, less efficacious, efficient, and less likely to be sustainable.⁴ The overall performance of the Project was rated successful. The PCR found the Project relevant in supporting the Government's disaster response and with regard to ADB's policy on *Rehabilitation Assistance after Disasters* (1989). It considered the Project less effective because completed subprojects did not fully achieve their intended purpose of expeditiously restoring the damaged facilities to predisaster condition. The Implementing Agency, the Center for the Liquidation of Consequences of Natural Disasters (CLCND), could have been more effective if it had received closer guidance from the consultants and disaster management experts (DMEs). Although no formal economic analysis was undertaken, the PCR concluded that the Project was efficient in achieving its outputs. The PCR expressed concerns about the sustainability of subprojects, particularly with respect to roads and riverbank protection works. Sustainability was considered at risk because of inadequate maintenance management and financing, and the vulnerability of subprojects to recurrent disasters. The overall rating of successful reflects the predominantly positive assessment of relevance and efficiency, and those subprojects with a generally satisfactory overall performance.

4. An advisory technical assistance (TA)⁵ was approved together with the loan to improve flood disaster management, provide suitable training, provide guidance in handling requirements and opportunities through international funding agencies, and help

¹ ADB. 1999. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Republic of Tajikistan for the Emergency Flood Rehabilitation Project*. Manila.

² Eighty-one contracts were on 71 construction sites. The term "subproject" is used synonymously with contracts.

³ ADB. 2006. *Guidelines for Preparing Performance Evaluation Reports for Public Sector Operations*. Manila.

⁴ ADB. 2004. *Project Completion Report on the Emergency Flood Rehabilitation Project in Tajikistan*. Manila.

⁵ ADB. 1999. *Technical Assistance to the Republic of Tajikistan for Flood Disaster Management (Financed by the Japan Special Fund)*. Manila (TA 3319-TAJ, for \$205,000, approved on 2 December).

prepare a long-term management plan. The TA is rated partly successful as it failed to deliver its development objectives and build the institutional capacity of CLCND. This resulted from changes of the international consultants, the DMEs, and delays in their inputs. Because of problems encountered with the DMEs, the professional skills of the national consultants were not upgraded.

B. Expected Results

5. The Project's was expected to restore economic activity by rehabilitating public physical infrastructure facilities. In the long term, the Project's impact was expected to be demonstrated in (i) reduced poverty and (ii) assistance to the Government's efforts to return social and economic life to normal conditions while sustaining general economic activities in the affected regions. Consistent with ADB's policy on *Rehabilitation Assistance after Disasters*,⁶ the Project was to enable the Government to continue its normal expenditure program. No design and monitoring framework was prepared at appraisal.

II. DESIGN AND IMPLEMENTATION

A. Formulation

6. Regional and district government committees in charge of emergency situations identified subprojects eligible for restoration and ADB financing. Damage statements listed the affected sites and scope of damage, and provided cost estimates and financing needs. The central Government screened and prioritized the statements. Despite the large number of sites spread over a wide geographic area, the damage and needs assessment was completed within a relatively short time and formed the basis for ADB and World Bank projects.⁷ The scope of the Project allowed adequate flexibility for changes during implementation, although changes were insignificant. All locations targeted for disaster interventions by the original needs assessment received assistance under the Project.

7. Following the Government's request for emergency assistance, ADB carried out a fact-finding mission in close consultation with the national and local government authorities and people affected by the disaster. ADB and the World Bank reached an agreement on a suitable division of work based on sectors and geographic area. The damage and needs assessment provided the basis for a list of proposed interventions grouped by systems and quantified units rather than by subprojects defined by their location and civil works type. The anticipated and actual project components are shown in Table 1.

8. The criteria used to design the Project followed ADB's policy on *Rehabilitation Assistance after Disasters* (1989), which requires that subprojects be implemented expeditiously and restored to predisaster condition, rather than be reconstructed. Implementation arrangements were designed to ensure quick and simple access to funds, adequate beneficiary participation, and a relatively high level of consultant support and ADB supervision. Environmental and social aspects were also to be considered in the design of subprojects, although the emergency nature of the subprojects precluded a thorough consideration of these concerns.

⁶ Prior to this, ADB's response to emergencies in its developing member countries (DMCs) was governed by ADB. 1987. *Policy on Rehabilitation Assistance to Small DMCs Affected by Natural Disasters*. Manila.

⁷ The World Bank project was subsequently terminated and not evaluated.

Table 1: Physical Components Included at Appraisal and as Completed

Sector of Intervention	Sughd	Khatlon	RRS and GBAR	Total Output at Appraisal	Actual Outputs
Roads (km)	37	23	21	81	58
Bridges (m)	147	113	40	300	477
Riverbank Strengthening (km)	26	7	5	38	32
Power Lines (km)	24	8	5	37	35
Telephone Lines (km)	17	0	0	17	17
Irrigation Pipes (km)	9	8	30	47	18
Irrigation Headworks, Pumps, and Wells	50	0	2	52	53
Water Supply Facilities (km)	8	8	1	17	14
School Buildings (number)	5	0	0	5	7
Resettlement (number of households)	288	0	0	288	288

GBAR = Gorno-Badakhshan Autonomous Region, km = kilometer, m = meter, RRS = Regions of Republican Subordination.

Sources: Asian Development Bank. 1999. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of Tajikistan for the Emergency Flood Rehabilitation Project*. Manila; and Asian Development Bank. 2004. *Project Completion Report on the Emergency Flood Rehabilitation Loan in Tajikistan*. Manila.

B. Rationale

9. Because of its seismic and geographic conditions, Tajikistan is prone to natural disasters. Each year, the country experiences about (i) 50,000 landslides; (ii) 5,000 tremors and earthquakes; and (iii) hundreds of avalanches and debris flows.⁸ From 6 to 12 July 1999, intense monsoon rains caused severe flooding, slope failures, and landslides affecting Sughd and Khatlon oblasts (administrative regions), the Regions of Republican Subordination, and the eastern, high mountain area of Gorno-Badakhshan Autonomous Region. Mountain streams and rivers already swollen by melting snow received further inflows from the rains, and overflow of banks and levees caused widespread floods. Mud, rocks, and boulders aggravated the force of the floods and damaged or destroyed private property and public infrastructure, including roads, water supply, drainage systems, power and telephone lines, health care facilities, and school buildings. The disaster worsened the misery of poor people living in the most affected areas, especially in Asht district, where houses, farmland, and livestock were lost. Damage to public infrastructure prevented access to markets, health services, drinking water, electricity, irrigation, and education.

10. The Project was proposed under ADB's policy on *Rehabilitation Assistance after Disasters* (1989). The Project was to assist in (i) rehabilitating public infrastructure damaged by floods and landslides in July 1999, and (ii) mitigating the risk that these expenditures would disrupt the Government's macroeconomic stabilization and postconflict⁹ development programs. The assistance was considered urgent as the Government was experiencing severe budget constraints. Without ADB assistance a portion of the Government budget would have had to be reallocated to disaster rehabilitation, aggravating existing fiscal

⁸ In 1999, a drought in southwest Tajikistan affected most of the 250,000 hectares of rain-fed crops, leaving 840,000 people in critical need of food assistance. This was followed in 2000 by Tajikistan's worst drought in 74 years, when cereal production decreased by 47%, and a million people faced hunger. United Nations Development Programme. 2005. *Central Asia Human Development Report. Bringing Down Barriers: Regional Cooperation for Human Development and Human Security*. Bratislava.

⁹ A civil war situation prevailed in Tajikistan until 1997.

constraints that were already hindering the Government's social and economic stabilization efforts. The Project was duly coordinated with the Government and other funding agencies, such as the World Bank (paras. 6 and 14).

C. Cost, Financing, and Executing Arrangements

11. The actual project cost of \$5.85 million was close to the appraisal estimate of \$6.25 million. The original cost estimates were treated as a budget, to which subproject standards and quality had to be adapted. The decline of the exchange rate of special drawing rights (SDR) to the US dollar from \$1.37 to \$1.25 reduced the availability of funds, rather than project cost. The actual foreign exchange cost rose by 27% compared with the appraisal estimate and its share in the total cost increased from 52% estimated at appraisal to 61%, the underlying reason being that all construction material was procured internationally. At appraisal about one third of the construction material was assumed to be purchased in the local market.¹⁰ The actual cost of material purchases accounted for 52.7% of the total cost, compared with 36.3% envisaged at appraisal.

12. Among the various cost items, the greatest increases in expenses were for consultant services (65%) and equipment purchases (36%). In contrast, resettlement costs estimated at \$350,000 at appraisal decreased by 80% to \$70,000. Part of the reduction can be explained by the cost of construction materials, which were not shown separately at appraisal. The cost estimates at appraisal did not allow for the preparation of designs, work drawings, specifications, and bid documents. A summary of the estimated and actual project cost is in Table 2. A detailed comparison of estimated and actual project cost is in Appendix 2.

Table 2: Project Cost
(\$'000)

Component	Appraisal Estimate	Actual Cost
A. Civil Works	2,380	2,014
B. Construction Materials	2,270	3,087
C. Equipment	420	388
D. Resettlement	350	70
E. Consulting Services and Incremental Cost	150	248
Base Cost	5,570	5,807
Physical Contingencies	290	0
Price Contingencies	340	0
Interest during Construction	50	46
Total Cost	6,250	5,853

Sources: Asian Development Bank. 1999. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of Tajikistan for the Emergency Flood Rehabilitation Project*. Manila; and Asian Development Bank. 2004. *Project Completion Report on the Emergency Flood Rehabilitation Project in Tajikistan*. Manila.

¹⁰ In addition to more favorable prices, the option to source the material internationally was preferred because of the avoided application procedure involved in the reimbursement of taxes and duties that were incorporated in local prices. Most of the material was procured from the People's Republic of China.

13. Financing arrangements remained largely unchanged, with ADB financing 80% of the total cost, including all of the foreign exchange cost and a portion of the local cost.

14. The cost and financing estimates provide an indication of the amount and, perhaps, quality of construction envisaged at appraisal. Given the type of outputs proposed for the various infrastructure facilities and their respective state of disrepair prior to the disaster, the cost and financing estimates would not have allowed more than quick fixes, rather than sustainable rehabilitation. While expeditious restoration to predisaster conditions was in line with ADB's policy at the time of appraisal, the policy may have been in conflict with the overall objective to achieve development results.¹¹

15. Project management and implementation were consistent with arrangements envisaged at appraisal and followed those established by the Government for the World Bank-funded Emergency Flood Assistance Project (EFAP). As the department in charge of disaster prevention and emergency relief operations, DEES acted as the Executing Agency under the overall supervision of the cabinet of ministers. CLCND was established to deal with natural disaster rehabilitation and became the Implementing Agency for the World Bank's EFAP and the ADB Project. When CLCND took over the ADB Project, it had more than 1 year of experience with the World Bank-financed EFAP. Two project implementation units (PIUs) were established, one in Khodjand for the subprojects in Sughd oblast, and one in Dushanbe for all other subprojects. The PIUs were in charge of review of designs, construction supervision, quality control, and maintenance of project accounts. The organization charts in Appendixes 3 and 4 indicate that the original and actual project management organization were largely identical.

D. Procurement, Construction, and Scheduling

16. **Procurement.** The Project comprised 85 civil works and 64 materials procurement contracts. The construction equipment and material were procured separately from the civil works. The value of civil works contracts ranged from \$5,000 to \$65,000 with an average value of about \$23,700. Had the cost of equipment and materials been included in the civil works contracts, the average contract value would have been about \$36,300. With or without that cost, the civil works contracts would have been significantly below the value that would have attracted the interest of foreign contractors. International competitive bidding was therefore not a valid option for the procurement of civil works. At the time of appraisal, no developed private contracting industry was available. Civil works were carried out by construction brigades operated by the regional or district administration, based on existing rate schedules. The civil works under the project contracts were carried out by such construction brigades. Under the circumstances, this was the most expeditious and efficient method.

17. The 64 contracts for construction equipment and materials were tendered based on competitive procedures. Thirty contracts were awarded based on local competitive bidding, 19 used international shopping and 15 national shopping. CLCND undertook the procurement of all equipment and material.

18. In observing that the performance of the construction brigades was not always satisfactory, the PCR concludes that (i) fewer contractors should have been used; (ii) the large number of construction contracts with materials procured separately made the consumption of

¹¹ The policy was revised in 2004.

materials difficult to monitor; (iii) substandard materials were used; and (iv) materials should not have been procured separately, but should have been included in the construction contracts with the contractors responsible for their procurement. The OEM agrees that a smaller number of contractors and contracts would have been desirable to facilitate construction supervision. However, the organization of civil works at the time of the disaster followed boundaries of administrative responsibilities, which meant using the labor force of the individual rayons and oblasts. Interfering with an established system, when disaster relief services had to be delivered, would likely have led to greater inefficiencies. The OEM found that the occasional use of substandard material was related to stretching budgets and increasing outputs, rather than being a cause of the chosen procurement modality.

19. The PCR recommends that the procurement of construction materials should have been carried out by the contractors and incorporated in the civil works contracts. The recommendation would have had merit in a competitive environment with a developed contracting industry. However, at the time of the disaster, Tajikistan was at an early stage of transformation to a market economy. The lack of a private contracting industry meant that no viable alternative to using force account work was available. Given the large number of contractors and their unfamiliarity with competitive procurement concepts, the decision to consolidate all procurement in one agency was rational under the circumstances. Providing training for a multitude of contractors and supervising them would have been a challenging task and would not have reduced the risk of fund abuse. The approach of consolidating procurement in CLCND made supervision more effective and enabled the World Bank to identify an abuse of loan funds under its EFAP. The abuse involved fictitious bids from nonexistent suppliers; as a result the World Bank canceled its loan. In response, the head of CLCND was changed and supervision strengthened. The ADB Project benefited from this.

20. The arrangements made for commissioning the preparation of designs, specifications, and work drawings were less than transparent. The work was to be carried out by state-owned design institutes. However, the cost of this work was not included in the appraisal estimates, and financing was not arranged for it. Apparently, the cost was to be included in the civil works contracts and to be assumed by the state contractors. This arrangement would have come close to the design-and-build concept, which is a suitable option for small and straightforward¹² contracts that need to be carried out quickly. The OEM could not determine whether the design cost was reflected in the contracts and how the contractors were compensated for the design work.

21. **Construction.** The quality of construction was mixed. Of 37 inspected subprojects, 57% are rated as good to fair condition, while 43% are rated poor or destroyed. A variety of reasons contributed to these results. Prior to the disaster, many facilities were already in disrepair and required comprehensive reconstruction, rather than restoration to predisaster condition. This applies in particular to roads along rivers and riverbank protection works. Budgets were stretched to maximize output per available unit of finance. In some cases non-disaster-related facilities were included. School buildings were completed consistent with the modest standards prevalent in Central Asia, and the Project did not improve them. Relatively simple construction work, including the restoration of telephone and power transmission lines, was completed at good quality and their present state of repair was found satisfactory. The detailed results of the condition survey carried out by the OEM are in Appendix 5. A summary is in Table 3.

¹² These would be contracts with predictable quantities and standard unit costs.

Table 3: Summary of Condition Survey

Subproject Category	Condition								Total in Category	
	Good		Fair		Poor		Destroyed			
	No.	%	No.	%	No.	%	No.	%	No.	%
A. Roads and Bridges	3	27.3	6	54.5	1	9.1	1	9.1	11	100.0
B. Riverbank Protection	0	0.0	5	29.4	3	17.6	9	52.9	17	100.0
C. Power and Telephone Lines	4	100.0	0	0.0	0	0.0	0	0.0	4	100.0
D. Pump Stations	0	0.0	1	50.0	1	50.0	0	0.0	2	100.0
E. Schools	0	0.0	2	66.7	1	33.3	0	0.0	3	100.0
Total	7	18.9	14	37.8	6	16.2	10	27.0	37	100.0

Source: Asian Development Bank Operations Evaluation Mission estimates.

22. **Scheduling.** At appraisal, the Project was expected to be completed within 2 years, by 31 December 2001. However, the Project was completed in September 2002, with some minor work finished by December 2002. To accommodate this work, the loan closing date was extended by 6 months to 31 December 2002. Difficulties that contributed to start-up delays related to the opening of an imprest account, which in turn delayed the design, mobilization, and implementation of the civil works contracts. Recruitment of staff for the PIUs and unfamiliarity with competitive procurement procedures caused further delays. ADB's Tajikistan Resident Mission did not exist at the time of appraisal. A fully staffed resident mission likely could have provided the guidance and assistance needed to significantly reduce the initial implementation delays. The arrangement for retroactive financing provided under the ADB loan contributed to expeditious implementation in the first phase of project implementation.

23. The OEM is of the view that the assumed 2-year implementation period was too short to effectively complete the targeted volume of civil works on bridges, roads, and riverbank facilities. While expeditious implementation was a key principle underlying ADB's policy on Rehabilitation Assistance after Disasters, the expectation to complete the Project within 2 years was unrealistic and may have been even counterproductive. The scope and nature of the civil works and the lead time required to prepare the subprojects would suggest that an implementation period of 2 years was too short and that completion of the Project in 3 years was a good achievement. There is a trade-off between implementation time of emergency assistance loans and quality of output. For infrastructure restoration projects, this trade-off can mean a choice between quick fixes and achieving development results. In setting objectives and determining an implementation period of 2 years, the appraisal mission should have adapted the project scope and the type of subprojects to the given objectives and implementation period. Had this process been followed, the restoration of road and riverbank facilities likely would have been excluded from the project scope.

E. Design Changes

24. No major changes were made to the design or project scope during implementation. Instead of 81 kilometers (km), only 58 km of roads km were restored. The scope of work on bridges increased from 300 meters to 477 meters. Given the nature of the emergency rehabilitation projects and the accelerated processing schedules, changes of this magnitude should not be unexpected.

F. Outputs

25. The Project's physical outputs included subprojects to restore or construct (i) district roads and bridges, (ii) riverbank protection facilities, (iii) water supply and irrigation facilities, (iv) telephone and power transmission lines, (v) schools, and (vi) resettlement areas. The PCR states that the project outputs at completion substantially conformed to the project design at appraisal. Specifically, the project outputs include the following:

- (i) **Roads and bridges.** This component covered 25 subproject sites and 26 civil works contracts. A total of 58.2 km of roads and 10 bridges with a combined length of 477 meters were restored based on designs prepared by state-owned design institutes. Upon their completion, the roads were transferred to the Ministry of Transport.
- (ii) **Reconstruction of riverbanks.** This component covered 46 subproject sites and 30 civil works contracts. A total of 32.1 km of riverbanks were reconstructed. Upon completion the facilities were handed over to the Ministry of Water Resources.
- (iii) **Water supply and irrigation systems.** Subprojects were located on 46 sites. The reconstruction involved 16 contracts and covered 44 irrigation wells, four irrigation pumps, five headwater intakes, and 18.5 km of irrigation canals. Upon completion the facilities were handed over to the Ministry of Water Resources.
- (iv) **Municipal power and telephone lines.** Reconstruction involved 9 subproject sites and 9 contracts, covering 35.4 km of power lines in the range of 0.4 to 35 kilovolts, 17 km of telephone lines, and 15 transformer substations.
- (v) **Resettlement area and public school buildings.** A total of 288 households were relocated from disaster-affected areas to safer ground in Asht district of Sughd oblast. The subproject involved 5 contracts covering the repair of five school buildings, and the construction of two new schools and 7 km of village roads.
- (vi) **Procurement of equipment and construction material.** All equipment and material for the civil works contracts were procured separately involving a total of 64 contracts, of which 30 contracts were tendered based on local competitive bidding, 19 on international shopping, and 15 on national shopping.

G. Consultants

26. A total of 300 person-months of national consulting were used for project management and supervision. Nineteen national consultants were recruited for the positions of deputy director of the project management unit; project engineers for irrigation, power, and roads and bridges; procurement specialists; project accountants; project supervisor; and three field engineers for subprojects in Dushanbe, Khatlon, and Sughd. Specialists for social impact and environmental monitoring were recruited from among qualified national consultants. The performance of the national consultants was evaluated as generally satisfactory. The consultants reviewed the designs and recommendations submitted for CLCND approval. The consultants supervised construction effectively, and provided quality control. They prepared contract documents and reports, which were included in the field visit reports of the attached TA (footnote 5). The domestic social and environmental specialists prepared a resettlement plan for 288 people who lost homes during the 1999 floods. The loan did not finance the services of international consultants.

H. Loan Covenants

27. All major covenants were complied with in a timely manner. The progress reports, audited project accounts, and financial statements were submitted as required. The PCR was submitted in April 2003. According to ADB's PCR, one covenant was partly complied with. The Government was required to account for the use of eligible items financed from loan proceeds and to disclose their use in the Project,¹³ which the Government apparently was unable to do in all or some cases. The PCR prepared by the Government included lists of all civil works contracts with the quantities of all major inputs. In inspecting the subprojects, the OEM was unable to verify the PCR's observation, because some subprojects were destroyed and because the nature of the civil works would make an audit of material consumption extremely difficult.

I. Policy Framework

28. Because of its geophysical conditions, Tajikistan is prone to natural disasters such as earthquakes, landslides, and floods. According to an estimate of the United Nations Development Programme, 70% of gross domestic product could potentially be lost as a result of natural disasters.¹⁴ The Department for Emergency Situations was set up to formulate and implement policies to prevent such emergencies. The department manages financial, material, and technical resources for disaster relief operations; and is responsible for the coordination of operations among the various central and local government departments. It develops emergency plans and carries out training for the local population and government officials. ADB provided TA to help the Government formulate its disaster preparedness plan and provide training (footnote 5). The plan identifies actions required to prepare for natural disasters as well as mitigate the destruction they cause. The current Government policy adopts a comprehensive response that integrates (i) disaster prevention; (ii) development of early-warning and monitoring systems; (iii) awareness building, education, and training (of experts and citizens); and (iv) relief and reconstruction.

29. A key feature of ADB's policy effective at appraisal was to restore infrastructure to predisaster conditions. The policy envisaged quick recovery and restoration of normal services and, accordingly, a short implementation period. Other elements of the policy included (i) community participation, (ii) coordination with development partners involved in the relief operation, and (iii) a sector approach to project design. This meant that the ADB Project would have to be part of a larger Government program and that a batch of subprojects would have to be ready for immediate implementation, while the preparation of the subsequent batch could be carried out during implementation. The Project was generally in line with the approach envisaged by this policy. While the affected population was consulted about options for relocation centers, other subprojects, such as roads, riverbank facilities, and power transmission lines, provided only limited need for community participation.

30. ADB's *Operations Manual* was revised in 2004, one year after completion of the Project. The updated policy, the *Disaster and Emergency Assistance Policy*, incorporates lessons from previous emergency assistance projects and envisages (i) a sharper focus on fewer sectors, (ii) faster project preparation, (iii) design criteria that ensure sustainability, (iv) TA for preventive measures, and (v) independent project monitoring for strengthened governance. The

¹³ Footnote 1, Loan Agreement, Section 4.06 (a).

¹⁴ UNDP. 2005. Central Asia Human Development Report. *Bringing Down Barriers: Regional Cooperation for Human Development and Human Security*. Bratislava.

policy regards disaster relief as a continuum involving short-term transitional emergency assistance combined with medium- to long-term rehabilitation and reconstruction. The comprehensive approach addressing both short-term emergency assistance needs and long-term rehabilitation requirements is supported by the insights gained from the OEM's assessment of the Project.

31. Funding for maintenance is a systemic issue in Tajikistan. Central and local government budgets are inadequate to finance proper maintenance of roads, bridges, schools, and other facilities rehabilitated under the Project. For road and riverbank maintenance, the situation is particularly serious and the outlook to sustain the project facilities is less than encouraging. As many of the roads in Tajikistan run along riverbeds, the maintenance situation for roads is to a large extent dependent on that of riverbanks. Maintenance of riverbanks and roads came to a halt immediately after the collapse of the Soviet Union and during the civil war, when numerous facilities were damaged or destroyed. Tajikistan is prone to natural disasters that regularly disrupt economic activities. Thus, allocation of funding is often restricted to emergency maintenance needs and is insufficient for routine or periodic maintenance requirements. As a result, the condition of infrastructure has gradually deteriorated and is in a serious state of disrepair.

32. Tajikistan's 26,000 km road network consists of 4,700 km of national roads and 21,300 km of local roads. The Ministry of Transport has jurisdiction over 13,700 km, including all national roads and 9,000 km of local roads, and is responsible for planning and coordinating the maintenance of these roads. Road maintenance and construction are funded from the general state budget.¹⁵ The Ministry of Transport's current road budget is about \$11.3 million, of which 80% is spent for construction and rehabilitation and 20% for maintenance. On a per-km basis, an average of \$100 is available for road maintenance. This amount is grossly inadequate considering the climate and topography of Tajikistan and the substantial backlog in deferred maintenance. A more adequate amount would be \$1,800 per year, including \$300 for routine and \$1,500 for periodic maintenance. The Government's strategy for the road and water management sectors is aimed at greater reliance on cost recovery from users and at increasing expenditures on maintenance. However, recourse to financing riverbank maintenance through user charges is limited. The Ministry of Water Resources and Land Reclamation has a budget of \$4 million for riverbank protection, which is inadequate for maintenance. While a system is in place to collect revenues from water users, the financial situation of farms, in particular cotton farms, makes mobilizing a significant amount of revenue difficult. The arrears of farms related to the payment of water dues are currently about \$20 million.

III. PERFORMANCE ASSESSMENT

A. Overall Assessment

33. Overall, the Project is assessed successful. This result has to be appreciated in light of the formidable challenges under which the relief measures were implemented, including (i) the geographic dimension of the disaster and the wide distribution of subprojects, (ii) the need to distribute disaster relief resources fairly and in accordance with the emergency needs of the oblasts, (iii) the geological instability of the area where facilities had to be reconstructed, (iv) the need for expeditious emergency operations, (v) the principle of economy and efficiency that had

¹⁵ Until 2000, the Government operated a dedicated road fund. The fund was viewed by the International Monetary Fund as an extrabudgetary operation potentially undermining fiscal discipline and was abolished. The taxes and receipts used to replenish the Road Fund are now paid directly to the national budget.

to be complied with, and (vi) the capacity and capability constraints of the institutions that had to carry out the relief measures. Given these constraints, the performance of the Project is rated satisfactory.

34. The subprojects improved the quality of life of the people in the affected areas. The socioeconomic survey carried out by the OEM confirmed that the rehabilitation works restored normal life and access to schools, hospitals, and employment places. The affected people were allowed to express their preferences for relocation areas, most returned to their home, and the relief measures in general were satisfactory (see also para. 44). However, the quality of about 43% of the subprojects is considered poor. The perceived need to maximize the coverage of available funds meant that resources may have been spread too thinly over too many subprojects. A smaller number of subprojects would have made project implementation more manageable and enhanced overall performance. Fewer subprojects could have been completed at better quality, increasing both their efficiency and sustainability.

35. To arrive at the overall assessment, the individual component ratings were aggregated using equal weightings for the 37 subprojects. The rating is based on four criteria: (i) relevance (20%), (ii) effectiveness (30%), (iii) efficiency (30%), and (iv) sustainability (20%). Individual criterion ratings are in whole numbers from 0 to 3, in increasing order of project performance. The overall assessment is summarized in Table 4. Further details are in Appendix 6.

Table 4: Overall Performance Assessment

Criterion	Average Score per Subproject	Weight	Overall
A. Relevance	2.80	0.2	0.54
B. Effectiveness	2.60	0.3	0.73
C. Efficiency	2.00	0.3	0.52
D. Sustainability	1.10	0.2	0.25
Total Rating^a			2.04

^a Highly successful > 2.7, successful 2.7 ≥ S ≥ 1.6, partly successful 1.6 > PS ≥ 0.8, unsuccessful < 0.8.
Source: Asian Development Bank Operations Evaluation Mission.

36. In terms of sectors, subprojects in power and telecommunications performed best and are rated highly successful. The worst performers are subprojects in the water management sector that are rated on the margin between successful and partly successful. Tables 5 and 6 provide summaries of the ratings. A detailed assessment is in Appendix 6.

Table 5: Summary of Rating by Sector and Region

Item	Rating
Sector	
Roads and Bridges	2.19
Water Management	1.61
Power and Telecommunications	2.80
Resettlement and Schools	2.30
Region	
Khatlon	2.19
Regions of Republican Subordination	1.35
Sughd	2.15

Source: Asian Development Bank Operations Evaluation Mission.

B. Relevance

37. The Project is rated relevant.¹⁶ The rating applies to Tajikistan's objectives to mitigate the effects of natural disasters and ADB's policy, both in terms of the policy valid at the time of appraisal and the 2004 *Disaster and Emergency Assistance Policy*.¹⁷ ADB responded quickly in assisting the Government to reconstruct or rehabilitate damaged infrastructure facilities in affected oblasts. The OEM rates 89% of the subprojects highly relevant, 5.4% relevant, and 5.4% partly relevant.

Table 6: Summary of Ratings by Criteria

Criterion	Contract Value (\$ million)	Number	Percent
Relevance			
Highly Relevant	3.47	33	89.2
Relevant	0.00	0	0.0
Partly Relevant	0.35	4	10.8
Not Relevant	0.00	0	0.0
Relevance Rating		2.78	
Effectiveness			
Highly Effective	2.68	25	67.6
Effective	0.89	9	24.3
Less Effective	0.25	3	8.1
Ineffective	0.00	0	0.0
Effectiveness Rating		2.59	
Efficiency			
Highly Efficient	0.50	6	16.0
Efficient	1.17	15	40.5
Less Efficient	2.01	15	40.5
Inefficient	0.13	1	0.0
Efficiency Rating		1.70	
Sustainability			
Most Likely	0.00	0	0.0
Likely	1.28	16	43.0
Less Likely	1.24	10	27.0
Unlikely	1.29	11	30.0
Sustainability Rating		1.14	
Total Overall Rating		2.04	

Source: Asian Development Bank Operations Evaluation Mission.

C. Effectiveness

38. The Project is rated effective. Effectiveness describes the extent to which the outcome, as specified in the design and monitoring framework, is achieved. The expected outcome of the Project was to help create conditions necessary to restore economic activity in the affected regions through rehabilitated roads and bridges, power and energy, water supply, schools, telecommunications, and new public facilities in relocation centers. The Project largely achieved the expected outcome. While some of the disaster-affected areas have since suffered from recurring disasters, the outcome of the Project was restoration of daily lives to normalcy. Seventy-eight percent of all subprojects are rated highly effective, 18.9% effective, and 2.7% partly effective.

¹⁶ The rating of 2.8 is on the margin between highly relevant and relevant.

¹⁷ ADB. 2004. *Disaster and Emergency Assistance*. Manila.

D. Efficiency

39. The Project is rated efficient. Efficiency describes how economically resources are converted to results. In view of the emergency situation prevailing in the aftermath of the disaster, no rigorous economic analysis was carried out at appraisal. As baseline data were not available, the OEM did not calculate an economic internal rate of return or related investment indicators. As indicators of efficiency, the OEM used a combination of the following criteria: (i) duration of construction, (ii) unit cost of construction, (iii) quality of construction, and (iv) number of beneficiaries. In some instances, unit cost of construction, such as investment cost per kilometer of construction cost, was inordinately high. In other cases, work quality was poor causing premature repair work and expenditures. Some subprojects displayed a combination of such factors (i.e., high cost and poor work quality). Overall the rehabilitation of physical infrastructure could have been more cost effective. Sixteen percent of all subprojects are rated highly efficient, 40.5% efficient, and 43.2% less efficient.

E. Sustainability

40. The OEM rated the Project's sustainability as less likely. This assessment takes into account the low sustainability of subprojects located in geologically unstable areas and the physical conditions of the subprojects vis-à-vis the generally weak maintenance regime. Funding for maintenance is a systemic issue in Tajikistan. However, the OEM is of the view that covenants imposed on an emergency assistance loan would not have been expedient in addressing the chronic issue of infrastructure maintenance. The OEM notes that routine and periodic maintenance of most of the road and riverbank subprojects had been neglected prior to the disaster and that the facilities had already been in need of major rehabilitation. The project designs under ADB's earlier emergency assistance policy and the funds available under the project loan could not provide more than short-term solutions, rather than long-term sustainability. Of the 37 subprojects visited by the OEM, the sustainability of 17 (46%) is rated likely, of 10 (27%) less likely, and of 10 (27%) unlikely. Four subprojects are rated unsustainable because of their location in geologically unstable areas, and 11 because of their poor physical condition coupled with a low likelihood of receiving proper maintenance.

41. Under ADB's 2004 *Disaster and Emergency Assistance Policy*, subprojects are envisaged to become more sustainable. The policy regards disaster relief as a continuum involving short-term and medium- to long-term rehabilitation and reconstruction. The comprehensive approach addressing both short-term emergency assistance needs and long-term rehabilitation requirements is supported by the insights gained from the OEM's assessment of the Project.

IV. OTHER ASSESSMENTS

A. Impact

1. Impact on Institutions

42. To build the Government's capacity to manage flood disasters, ADB provided TA (footnote 5) along with the emergency assistance loan. The TA was designed to help improve flood disaster management, provide training, and lay the foundation for the preparation of a long-term management plan. The TA was also expected to provide guidance in dealing with requirements and opportunities provided by international funding agencies and nongovernment organizations. The TA funded about 7 person-months of services of international disaster

management experts (DMEs). The 7 person-months were utilized by three DMEs, who visited Tajikistan on an intermittent basis between February 2000 and January 2003. The first DME conducted two workshops and prepared a draft disaster management plan and a benefits monitoring plan for the loan project. The second DME was replaced, and the third DME assisted DEES in monitoring and evaluating the civil works and in reporting progress to ADB. The DMEs submitted an inception report, six field visit reports, and a final report.

43. The outputs of the TA included a preliminary plan for flood disaster management, and a plan for benefit monitoring and social assessment of the civil works under the Project. The impact of the TA on project implementation and contract management was limited because the assignments of the DMEs were not aligned with implementation of the Project. Two community-based disaster management workshops were conducted. The workshops helped strengthen the disaster management capacity of vulnerable communities. The third DME visited all project sites and provided useful feedback on construction progress and quality. Most of the sites were in satisfactory condition, although proper construction supervision was identified as a problem. The DME made recommendations to correct the quality of works and to improve construction supervision. The DME assisted in preparing data sheets for the civil works contracts, and the Government's draft PCR. Due to the changes of the DMEs and the 9-month interval between the assignments of the first and second DME, the TA objectives were not fully met. Specifically, the DMEs did not (i) properly train the PIU staff and the supervisors of the civil works,¹⁸ (ii) review the designs of the civil works before commencement of the works, (iii) assist the national social specialists in preparing baseline data for project benefit monitoring, (iv) assist DEES in securing additional financing, and (v) seek cooperation of nongovernment organizations.

2. Socioeconomic Impact

44. The OEM carried out a socioeconomic survey of selected subprojects using a combination of rapid assessments, interviews, and focus group discussions. Appendix 7 reports the socioeconomic conditions in the relocation centers. The rapid assessments were undertaken mostly for roads, bridges, and riverbank strengthening subprojects, while the surveys were held in four resettlement centers and rehabilitated schools located in Asht district (e.g., Pangaz, Shaidon, and Shodoba) of Sughd oblast. This oblast was the most severely affected region in terms of damage to private property and the ensuing need to relocate. The focus group discussions and house-to-house interviews concentrated on the relocation centers in this region. The subprojects have improved quality of life in the affected communities. The rehabilitation works allowed normal activities to be resumed with access to places of employment, markets, hospitals, and schools. In general, those affected expressed satisfaction with the relief measures. Most did not regard the relocation areas as permanent and have returned to their original homes. Interviewed residents indicated that they were allowed to express preferences with respect to the relocation area. In one case, the residents prevailed over the district administration in the selection of a suitable relocation area. Problems associated with the relocation centers varied and included longer distances to schools and health centers, and inadequate access to irrigation and drinking water.

3. Environmental Impact

45. The Project had no significant adverse environmental impact. Since the Project's objective was to restore the infrastructure to predisaster conditions, the subprojects were

¹⁸ Only the third DME provided training in office technology to CLCND staff.

not expected to create any specific environmental impact. During the site visits, the OEM did not observe any adverse impact on the environment, arising from ADB-assisted subprojects.

B. ADB and Borrower Performance

46. ADB's performance is rated satisfactory. ADB's processing of the loan was expeditious. Subproject formulation and approval arrangements were generally satisfactory, although the estimated implementation time was overly optimistic. However, greater attention should have been paid to the recurrent nature of flood disasters in Tajikistan, the dimension of the damage inflicted on infrastructure, and the construction standards that would ensue from the short implementation period and the available financing. Another indicator of ADB's performance is the approximately 5 months that elapsed between the appraisal mission and loan effectiveness. One option for ADB to reduce the processing time of future emergency assistance loans would be to prepare a medium-term strategy and work plan at the country partnership strategy stage for responding to disasters. Since natural disasters in Tajikistan occur regularly and at predictable locations, specific sectors could be identified where ADB could get involved and a work plan developed based on a quick response mechanism.

47. ADB's performance during project implementation was satisfactory. DEES and CLCND staff indicated that they were generally satisfied with ADB's performance. Between December 1999 and August 2003, ADB carried out six missions including the inception mission, a special loan administration mission, three review missions and the project completion review mission. Communications with ADB, which DEES perceived as occasionally time-consuming, improved after establishment of the Tajikistan Resident Mission. Advance action agreed by ADB for procurement of equipment and materials and recruitment of consultants, and the provision for retroactive financing was effective and saved time. The simplified approval procedures for contract award recommended by ADB were realistic for the Project as they involved small contracts that needed to be awarded and implemented expeditiously. Although evidence of procurement fraud involved three mailbox firms relating to the World Bank-funded EFAP (para. 19), no allegations of irregularity against DEES or the mailbox firms were made regarding the ADB project.

48. The Borrower's performance is rated satisfactory. Loan covenants were complied with and progress reporting was in line with the requirements. Delayed release of counterpart funds during the latter part of project implementation hampered the progress of civil works. The documentation of subproject implementation and contracts was impressive.

C. Technical Assistance

49. The TA had limited impact on capacity building, and the draft of the disaster management plan prepared under the TA has yet to be converted into an operationally useful document. On the basis of the arguments in paras 42-43, the TA is rated relevant, less effective, and inefficient, and its sustainability is unlikely. Overall, the TA is rated unsuccessful.

V. ISSUES, LESSONS, AND FOLLOW-UP ACTIONS

A. Issues

50. The issues that have emerged from the evaluation revolve around ADB's policy, the construction standards applied to infrastructure subprojects, and their efficiency and sustainability. While the issues were relevant to the ADB policy *Rehabilitation Assistance after*

Disaster (1989) valid at appraisal, they have been rendered mute to some extent by the revised 2004 policy. Clearly, the issues would have been better addressed, if the project design had been based on ADB's current policy. Nonetheless, as the OEM's conclusions reinforce the directions adopted by the new policy, a discussion of the issues follows.

51. Prior to the disaster, maintenance of infrastructure facilities in Tajikistan, particularly roads and riverbanks, had long been neglected, maintenance budgets were inadequate, and the cost-recovery mechanism was deficient. The substantial backlog of deferred maintenance and the poor state of repair of roads and riverbank protection facilities aggravated the impact of the disaster. Emergency assistance loans under the relevant ADB policy aimed to mitigate immediate losses to priority assets, rather than to provide comprehensive reconstruction and remove the backlog of deferred maintenance. Given this objective, the emergency assistance could only restore the facilities to the inadequate predisaster condition. While ADB's policy was consistent with the objective to restore economic, social, and governance activities after disasters, it prolonged the circular problem of inadequate maintenance and increasing vulnerability to disasters.

52. One road subproject in Sughd oblast provides a case study of the risks involved in disaster relief projects. First, DEES succumbed to the temptation of using scarce loan funds to carry out patch work on road sections that had not been damaged by the flood. The quality of the repair work was poor and caused pavement failure over the full length of the repaired road. The road's alignment was along a river prone to flooding and due to the impact of the floods the riverbank needed restoration as well as the road. As the loan funds had been stretched to fix the road, the remaining funds were insufficient for rehabilitating the riverbank. As a result, the quality of the completed work for both the road and the riverbank was poor. Subsequent floods have destroyed a large part of the road and the riverbank.

53. ADB needs to better define its role in postdisaster operations. The issues that should be addressed in this context relate to the selection of subprojects that can or cannot be completed satisfactorily within the given constraints of time and financing. Reconstruction of infrastructure usually takes longer and requires substantial funding. The "patch and mend" approach that was applied to road and riverbank subprojects, while being expeditious and in keeping with available budgets, is not in line with ADB's overall policy to achieve development results. The focus should be on facilities that cost relatively less and are a priority in the context of emergency disaster relief for the affected population. This would apply to resettlement centers. The efficiency of the Project would have benefited from a smaller number of subprojects and a sharper focus on what should be achieved. This would have meant focusing on resettlement centers and leaving infrastructure restoration to a separate project.

54. The issue of proper funding is of a strategic nature and must be addressed at the country level and in country strategy programs. In Tajikistan, natural disasters are recurrent and foreseeable. The risks involved should therefore be considered in country programs and in regular project loans. As an alternative, a fund dedicated to disaster mitigation could be established.

55. CLCND is the Government's implementation agency for disaster relief interventions. Given the nature of the 1999 disaster, several sectors were affected, notably transport, water management, and education. Knowledge to carry out projects in these sectors resides in the respective line ministries and the question is to what extent they should be involved in project implementation. As an alternative to the organizational setup used under the Project, the OEM proposes to examine the merits of PIUs that would be formed based on the major sectors affected by the disaster, e.g., transport, education, and water supply. Such an arrangement

would appear advantageous in larger scale projects with a large number of subprojects in each sector. It would make more effective use of the knowledge available in the line ministries, and enhance the sense of ownership and accountability.

56. Recent experience from disaster-prone countries in different parts of Central, South, and Southeast Asia reveals how the community and schoolchildren can bring value-added in information dissemination. Disaster preparation could be mainstreamed as part of the community program and national school curriculum as a means of raising basic awareness of measures that could reduce risk for natural disasters.

B. Lessons

57. The performance of the Project provides lessons for the implementation of future disaster relief operations. The lessons include ways to shorten disaster response times, the need to more narrowly focus on priority emergency interventions, and the desirability to combine disaster relief operations with post-emergency reconstruction activities.

- (i) In disaster relief operations, urgency can be counterproductive with regard to the sustainability of facilities to be restored. In assessing the implementation time, identifying the potential for reducing response times may be more useful than basing implementation time on the completion target determined at appraisal.
- (ii) Completion of the Project's infrastructure subprojects would have required more than the actual implementation time if design procedures and construction standards had been governed by sustainability considerations. Adequate arrangements should have been made for preparing construction designs.
- (iii) The implementation time could have been shortened. In view of the recurrent nature of disasters in Tajikistan, a proactive approach can be adopted by training selected DEES staff in areas that have caused delays, including procurement, financing, and accounting procedures. The issue was largely addressed by setting up a resident mission with delegated authorities.
- (iv) Past maintenance, the state of disrepair of facilities, and vulnerability to disasters are interdependent. Disaster relief assistance cannot remedy a situation of deferred maintenance. Attempts by executing agencies to do exactly that and spread the emergency assistance funds to infrastructure not affected by the disaster should be mitigated by clearer eligibility criteria for subprojects.
- (v) The immediate emergency intervention should focus on transitional emergency assistance addressing immediate needs of the population; while an accompanying project preparatory TA should identify infrastructure facilities eligible for comprehensive reconstruction and prepare a loan project for implementation when the emergency situation has passed. Capacity building for maintenance management and financing should be pursued along with the proposed loan project.
- (vi) Education is the key to disaster protection. Large numbers of lives have been saved by the power of knowledge. National school curriculum could be revisited to incorporate modules on disaster preparation. Disaster training sessions covering basic preparation measures, early warning signals, and emergency procedures should be offered to schools and communities. The Government must be prepared to provide additional resources to train teachers, and prepare training manuals and textbooks for disaster-prone areas, if not for the entire population.

- (vii) ADB and the Government should encourage disaster preparation and preventive measures. More conscious effort should be put toward raising public awareness (through community, schoolchildren, media, and local authorities), putting in place sound environmental protection and better ecological management, and encouraging relocation rather than rehabilitation.
- (viii) The Government should be encouraged to incorporate necessary repair and maintenance expenditures in its recurrent budget, and where appropriate mobilize local communities to maintain rehabilitated infrastructure.
- (ix) For the country strategy and program, a special strategy and program should be considered to address recurrent natural disaster preparation and management in the country, and be delegated to the resident mission to implement as necessary.

C. Follow-Up Action

58. The OEM did not identify issues that require immediate follow-up action. Issues that should be considered under future ADB projects are related to maintenance management and funding of infrastructure facilities. These issues were taken up under subsequent infrastructure projects, including (i) Sustainable Cotton Subsector,¹⁹ (ii) Dushanbe–Kyrgyz Border Road Rehabilitation (Phase II),²⁰ (iii) Road Rehabilitation,²¹ and (iv) Irrigation Rehabilitation.²²

¹⁹ ADB. 2006. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of Tajikistan for the Sustainable Cotton Subsector Project*. Manila (Loan 2271-TAJ[SF]).

²⁰ ADB. 2005. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of Tajikistan for the Dushanbe–Kyrgyz Border Road Rehabilitation Project (Phase II)*. Manila (Loan 2196-TAJ[SF]).

²¹ ADB. 2000. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of Tajikistan for the Road Rehabilitation Project*. Manila (Loan 1819-TAJ[SF]).

²² ADB. 2004. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of Tajikistan for the Irrigation Rehabilitation Project*. Manila (Loan 2124-TAJ[SF]).

LIST OF SUBPROJECTS VISITED BY THE OPERATIONS EVALUATION MISSION

KHATLON Region		SUGHD Region	
A. Roads and Bridges		A. Roads and Bridges	
1. Sino Street of Kulyab city	223,957	1. Bridge on Shaidan-Dagana Road	162,603
2. Bridge over irrigation canal in Moscov district	95,806	2. Bridge on Gafurov-Pungan Road	349,692
3. Bridge in Baljuvon district	49,656	3. Rehabilitation of Road in Khamidaban district	33,157
4. Somonchi road in Parkhar district	100,055	4. Shaidan-Dagana Road rehabilitation	114,315
5. Road Moscovski - Chubek	15,000	5. Shaidan-Pangaz Road rehabilitation	104,941
6. Dangara - Kangurt road	76,000	6. Buston-Altintopa Road rehabilitation	133,795
B. Water Management		B. Water Management	
1. Pyandzh Riverbank protection in Moscow district Post 7	195,027	1. Dagana riverbank protection (Sai Salt Plant)	150,205
2. Pyandzh Riverbank protection in Moscow district Post 6	186,451	2. Shaidan riverbank protection, Sai	19,886
3. Pyandzh Riverbank protection Posts 6-7	145,867	3. Sai riverbank protection, Pangaz area, Burak	87,187
4. Kyzylsu riverbank protection Parkhar district	102,532	4. Sai riverbank protection, Pangaz area, Suja	104,215
5. Yakhsu riverbank protection Kulyab district	95,661	5. 44 pump stations in Asht district	66,457
6. Yakhsu riverbank protection Khonobod, Kulyab district	97,210	C. Power Supply/Telecommunications	
7. Yakhsu riverbank protection near treating facility	99,658	1. 13 km transmission line 10kv in Asht district	98,241
8. Pyandzh Riverbank protection near frontier post 7	97,398	2. 10.5 km transmission line 0.4kv in Asht district	48,824
9. Obi Mazor riverbank protection, Baljuan district	97,844	3. Transmission line 10/0.4kv in Asht district incl. Gulchan town	97,393
10. Yakhsu riverbank protection in Vose district	21,000	4. 17 km telecom lines in Asht district	41,273
Total subprojects visited in Khatlon	1,699,122		
Share in total Khatlon contracts (%)	78.1%		
RRS Region		D. Resettlement/Schools	
A. Water Management			
1. Khanaka River underground water duct	59,082	1. 7km of roads in Gulshan center	59,382
2. Karatag pump station Gissar district	49,788	2. School in Jamoat village, Shaidan	76,582
		3. Dagan school	121,677
		4. Schools in Pangaz and Shaidan	172,500
Total subprojects visited in the RRS region	108,870	Total subprojects visited in Sughd Region	2,042,325
Share in total RRS contracts (%)	17.9%	Share in total Sughd contracts (%)	77.7%
Total subprojects visited	37	Share in all subprojects	45.7%
Total contract value of subprojects visited (\$)	3,850,317.00	Share in total contract value	69.5%

OEM = Operations Evaluation Mission, RRS = Regions of Republican Subordination.

Source: Asian Development Bank Operations Evaluation Mission.

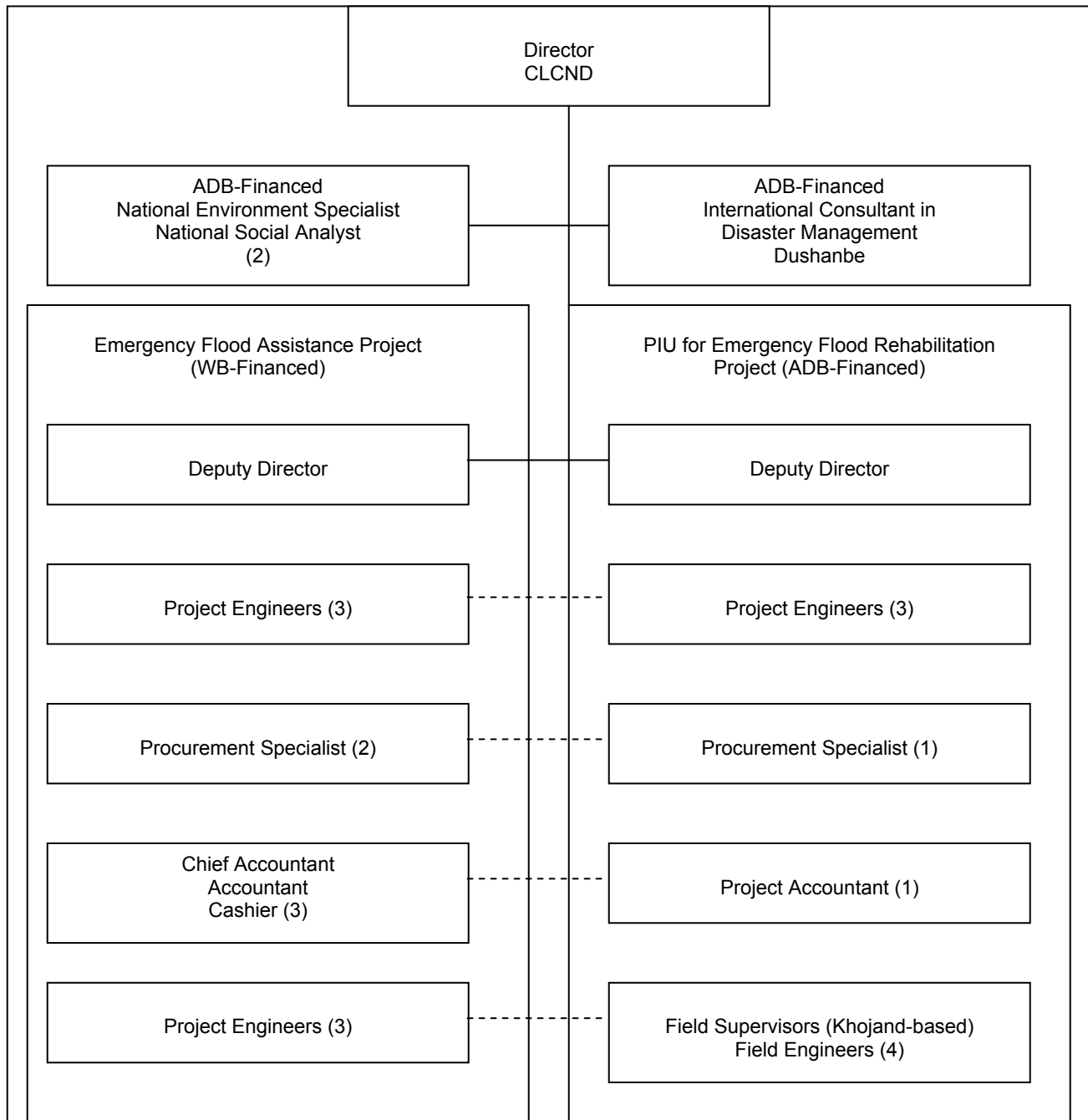
COMPARISON OF ESTIMATED AND ACTUAL PROJECT COSTS
(\$'000)

Item	Appraisal Estimate			Actual Cost		
	Foreign Exchange	Local Currency	Total Cost	Foreign Exchange	Local Currency	Total Cost
A. Civil Works						
1. Sughd	370	890	1260			
2. Khatlon	235	575	810			
3. RRS and GBAR	95	215	310			
Subtotal (A)	700	1,680	2,380	520	1,494	2,014
B. Construction Materials	1,530	740	2,270	3,087	0	3,087
C. Equipment	420	0	420	388	0	388
D. Resettlement	180	170	350	26	44	70
E. Consulting Services	70	80	150	73	66	139
F. Contingencies						
1. Physical	140	150	290	0	0	0
2. Price	160	180	340	0	0	0
Subtotal (F)	300	330	630	0	0	0
G. Incremental Project Cost	0	0	0	0	109	109
H. Interest during Construction	50	0	50	46	0	46
Total	3,250	3,000	6,250	4,140	1,713	5,853

GBAR = Gorno-Badakhshan Autonomous Region, RRS = Regions of Republican Subordination.

Source: Asian Development Bank. 2004. *Project Completion Report on the Emergency Flood Rehabilitation Project in Tajikistan*. Manila.

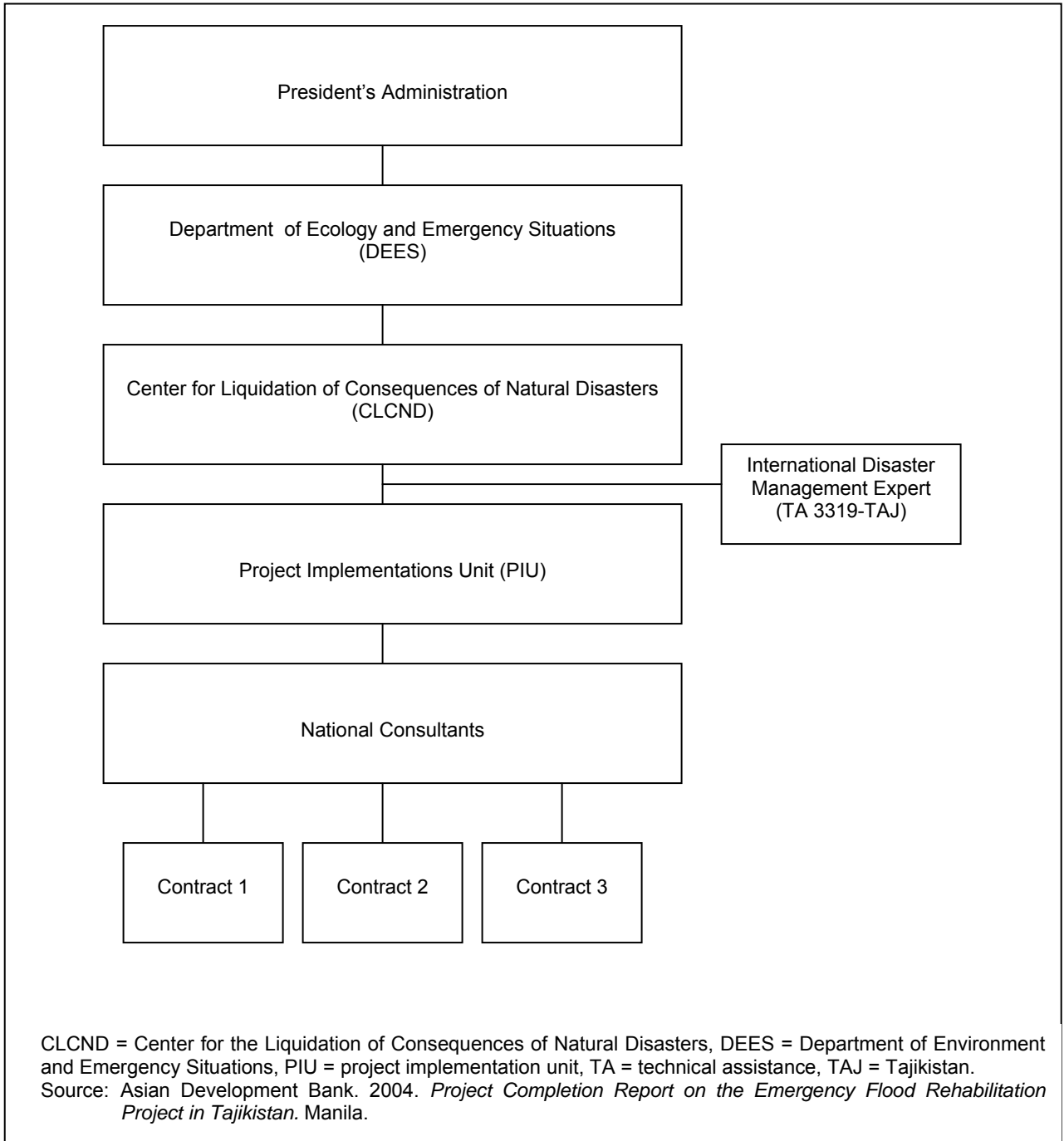
ORIGINAL IMPLEMENTATION ARRANGEMENTS



ADB = Asian Development Bank, CLCND = Center for the Liquidation of Consequences of Natural Disasters, WB = World Bank, PIU = project implementation unit.

Source: Asian Development Bank. 1999. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Republic of Tajikistan for the Emergency Flood Rehabilitation Project*. Manila.

REVISED IMPLEMENTATION ARRANGEMENTS



CONDITION ASSESSMENT OF SUBPROJECTS

Subproject	Assessment
A. Khatlon Region	
1. Bridge on Sino Street of Kulyab city Overall fair condition	<ul style="list-style-type: none"> • Restored bridge improves on the old bridge by including a sidewalk and providing higher elevation • Bridge is asphalt-sealed; potholes in places • Significant amount of debris and siltation around the pylons • No abutments to protect from future floods • Per unit cost is on the high side • Poor maintenance
2. Bridge over irrigation canal in Moscov district Overall poor condition	<ul style="list-style-type: none"> • The canal provides irrigation to four villages in the district • Metal bridge shows heavy wear (the old bridge was made of concrete) • Strong embankment protection • Significant amount of debris and siltation around the pylons • Component road is asphalt-sealed; some potholes close to the bridge • Poor maintenance of the bridge and road
3. Bridge in Baljuvon district Overall fair condition	<ul style="list-style-type: none"> • The bridge is in good condition, though some cracks are evident
4. Somonchi road in Parkhar district Overall fair condition	<ul style="list-style-type: none"> • Direct relation to 1998 floods is difficult to establish • Road is asphalt-sealed; with potholes and wear in places • Poor maintenance
5. Moscowski–Chubek road Overall fair condition	<ul style="list-style-type: none"> • Road is in fair condition; some maintenance evident
6. Dangara–Kangurt road Overall good condition	<ul style="list-style-type: none"> • In reasonably good condition; some potholes • Road and sidewalks well used by residents going to the local bazaar and students going to school • Minimum maintenance
7. Pyandzh riverbank protection in Moscow district post 6 Destroyed	<ul style="list-style-type: none"> • The subproject was meant to protect villages on the west bank of the Pyandzh River • It was completed in 2002, but destroyed in large floods in 2005; during this flood villages such as Khodira were submerged in more than 3 meters of water • Villagers are slowly rebuilding their community, including laying down a culvert crossing over a strong tributary, under the community self-help scheme “hashar” • New and stronger embankments or dams were built under a subsequent Asian Development Bank agriculture loan
8. Pyandzh riverbank protection post 6 Destroyed	See subproject 7
9. Pyandzh riverbank protection posts 6–7 Destroyed	See subproject 7
10. Pyandzh riverbank protection near frontier post 7 Destroyed	See subproject 7
11. Kyzylsu riverbank protection Parkhar district Overall poor condition	<ul style="list-style-type: none"> • Riverbank protection is in bad condition; nearly 30% is destroyed • The community tries to fortify the riverbank by contributing labor, cash, and livestock under the hashar scheme

Subproject	Assessment
12. Obi Mazor riverbank protection, Baljuvan district Overall poor condition	<ul style="list-style-type: none"> • Protection scheme features metal-clad gabions; generally in good condition except for some metal mesh wearing away
13. Yakhsu riverbank protection Kulyab district Overall fair condition	<ul style="list-style-type: none"> • Protection scheme includes prefabricated concrete cones and metal gabions • The concrete cones remain intact and in place, however, metal wires cladding the gabions are torn in many places • Poor maintenance
14. Yakhsu riverbank protection Kulyab district Overall fair condition	<ul style="list-style-type: none"> • Protection scheme includes prefabricated concrete cones and metal gabions • The concrete cones remain intact and in place, however, metal wires cladding the gabions are torn in many places • Poor maintenance
15. Yakhsu riverbank protection near water treatment facility Overall fair condition	<ul style="list-style-type: none"> • Protection scheme includes prefabricated concrete cones and metal gabions • The concrete cones remain intact and in place, however, metal wires cladding the gabions are torn in many places • Poor maintenance
16. Yakhsu riverbank protection in Vose district Overall fair condition	<ul style="list-style-type: none"> • Protection scheme includes prefabricated concrete cones and metal-clad gabions • The concrete cones remain intact and in place, however, metal wires cladding the gabions are torn in many places • Poor maintenance
17. Riverbank protection of the left bank of Yakhsu in Khonobod area Overall fair condition	<ul style="list-style-type: none"> • Protection scheme feature metal-clad gabions; wire mesh has unraveled in a few places • It protects a vital irrigation canal that provides water to Khonobod • However, the village of New Khonobod on the right bank of the river is vulnerable; residents were relocated away from danger before, but they returned due to lack of income-earning opportunities at the relocation site • The concrete cones remain intact and in place, however, metal wires cladding the gabions are torn in many places • Poor maintenance
B. Sughd Region	
1. Bridge on Shaidan–Dagana road Overall fair condition	<ul style="list-style-type: none"> • Bridge in fair condition • Huge boulders rolling down the mountain along the river puts the bridge and the community continuously at risk • Poor maintenance
2. Bridge on Gafurov–Pungan road Overall fair condition	<ul style="list-style-type: none"> • Bridge itself is quite impressive and in fair condition, whereas the bridge it replaced was a only a culvert crossing • Bad erosion along the asphalted approach • Poor maintenance shows in cracks along the bridge and eroding approach
3. Shaidan–Dagana road rehabilitation Overall good condition	<ul style="list-style-type: none"> • Road in very good condition; asphalt-sealed
4. Shaidan–Pangaz road rehabilitation Overall good condition	<ul style="list-style-type: none"> • Road in very good condition; asphalt-sealed

Subproject	Assessment
5. Buston–Altintopkan road rehabilitation Overall poor condition, partly destroyed	<ul style="list-style-type: none"> • Direct relation to 1998 floods is hard to establish • For the low amount of traffic, the road is in very bad condition with significant wear and severe potholes; asphalt is porous and unsealed • Where the road is aligned near the river, erosion has eaten away most of the road • No riverbank protection exacerbates the erosion • Subproject includes a bridge that is in fair condition • Very poor maintenance; evidence of minor repair with liquid bitumen
6. Dagana riverbank protection (Sai salt plant) Destroyed	<ul style="list-style-type: none"> • Riverbank protection poorly designed and not intensive • Nearly 85% of the protection has been washed away • Village is vulnerable as most residents live near the river, the only source of water • Road component suffers from the poor embankment protection; it is aligned along the river and is being continuously eroded • Ministry of Transport reports that a more robust river protection scheme would have required significantly more capital than provided under the subproject
7. Shaidan riverbank protection, Sai Destroyed	See subproject 24
8. Sai riverbank protection, Pangaz area, Burak Destroyed	See subproject 24 Riverbank erosion threatens the only clinic in Burak village
9. Sai riverbank protection, Pangaz area, Suja Destroyed	See subproject 24
10. 44 pump stations in Asht district Fair condition	<ul style="list-style-type: none"> • Direct relation to 1998 floods is difficult to establish • Only about one third of the pumps were operating during the site visit; villagers use the water to irrigate crops and wash clothes • Poor maintenance
11. 13 kilometer (km) 10 kilovolt (kV) transmission line in Asht district	In good working condition
12. 10.5 km 0.4 kV transmission line in Asht district Good condition	In good working condition
13. Transmission line 10 km 0.4 kV in Asht district including Gulchan town Good condition	In good working condition
14. 17 km of telecommunications lines in Asht district Good condition	In good working condition
15. 7 km of roads in Gulshan center Good condition	<ul style="list-style-type: none"> • The road is in fair condition • Low level of maintenance • New construction is evident in the resettlement center, but many houses look vacant • Residents often use their plot to grow crops as a second home and still maintain their primary residence at their flood-prone village of Dagana

	Subproject	Assessment
16.	School in Jamoat Shaidan Overall fair condition	<ul style="list-style-type: none"> • From the outside, the primary school looks clean and well maintained • However, poor design and construction mean that the ceiling is peeling and linoleum covers the cement floor to help insulate the children from the cold • Most fluorescent lamps are gone and the rooms are dark on cloudy days • The school has no heating system and teachers say it can get very cold in winter
17.	Dagana school Overall poor condition	<ul style="list-style-type: none"> • Poor design, construction, and maintenance mean the school is in significant disrepair • Many dark corridors have poor floorboards • Many fluorescent lamps are missing • The school is cold and dank with severe water damage on the walls due to bad roof construction • The school does not have a heating system • Most school equipment, such as desks and chairs, is in some form of disrepair (e.g., missing seatbacks) • School teachers say education is free but students and parents often contribute in kind to operate and maintain the school
18.	Rehabilitation of schools in Pangaz and Shaidon Overall fair condition	<ul style="list-style-type: none"> • Some defects in design and construction • Students and parents contributed cash and in kind to improve the school (e.g., adding wooden floorboards or linoleum to insulate the floor and protect students, and constructing a canteen)
C.	Regions of Republican Subordination	
1.	Khanaka River underground water duct Overall poor condition	<ul style="list-style-type: none"> • The aquaduct protects a train bridge • The entrance sluices are clogged with garbage and other debris • The river itself is silted and the embankments are weak • Residents claim it is critical to reinforce the riverbank with cement, otherwise the next big flood can destroy the aqueduct and train bridge
2.	Karatag pump station Gissar district Overall poor condition	<ul style="list-style-type: none"> • Direct relation to the 1998 floods is difficult to establish • It was built to replace a Soviet-era gravity-based system, to provide potable and irrigation water to surrounding villages • The pump is not operational and the state of disrepair suggests it has not been for a few years • A local resident reports that the system has not provided water for at least 3 years

Source: Asian Development Bank Operations Evaluation Mission.

ASSESSMENT RATING OF SUBPROJECTS

Item	Relevance		Effectiveness		Efficiency		Sustainability		Overall Rating
	Score	%	Score	%	Score	%	Score	%	
A. Khatlon Region									2.19
1. Roads and Bridges	0.53		0.85		0.55		0.33		2.27
a. Sino street of Kulyab city	3	0.60	3	0.90	1	0.30	1	0.20	2.00
b. Bridge over irrigation canal in Moscov district	3	0.60	2	0.60	2	0.60	1	0.20	2.00
c. Bridge in Baljuvon district	3	0.60	3	0.90	2	0.60	2	0.40	2.50
d. Somonchi road in Parkhar district	1	0.20	3	0.90	2	0.60	2	0.40	2.10
e. Moscovski–Chubek road	3	0.60	3	0.90	2	0.60	2	0.40	2.50
f. Dangara–Kangurt road	3	0.60	3	0.90	2	0.60	2	0.40	2.50
2. Water Management	0.60		0.90		0.46		0.15		2.11
a. Pyandzh riverbank protection in Moscow district post 7	3	0.60	3	0.90	1	0.30	0	0.00	1.80
b. Pyandzh riverbank protection in Moscow district post 6	3	0.60	3	0.90	1	0.30	0	0.00	1.80
c. Pyandzh riverbank protection posts 6–7	3	0.60	3	0.90	1	0.30	0	0.00	1.80
d. Pyandzh riverbank protection near frontier post 7	3	0.60	3	0.90	1	0.30	0	0.00	1.80
e. Kyzylsu riverbank protection Parkhar district	3	0.60	3	0.90	1	0.30	0	0.00	1.80
f. Obi Mazor riverbank protection, Baljuan district	3	0.60	3	0.90	2	0.60	1	0.40	2.50
g. Yakhsu riverbank protection Kulyab district (1)	3	0.60	3	0.90	2	0.60	2	0.40	2.50
h. Yakhsu riverbank protection Kulyab district (2)	3	0.60	3	0.90	2	0.60	1	0.40	2.50
i. Yakhsu riverbank protection near treating facility	3	0.60	3	0.90	2	0.60	1	0.20	2.30
j. Yakhsu riverbank protection in Vose district	3	0.60	3	0.90	2	0.60	2	0.20	2.30
k. Yakhsu riverbank protection Khonobod, Kulyab district	3	0.60	3	0.90	2	0.60	1	0.20	2.30
B. Sughd Region									2.15
1. Roads and Bridges	0.50		0.80		0.50		0.30		2.12
a. Bridge on Shaidan–Dagana road	3	0.60	3	0.90	2	0.60	2	0.20	2.30
b. Bridge on Gafurov–Pungan road	3	0.60	3	0.90	1	0.30	1	0.20	2.00
c. Shaidan–Dagana road rehabilitation	3	0.60	3	0.90	3	0.90	2	0.40	2.80
d. Shaidan–Pangaz road rehabilitation	3	0.60	3	0.90	3	0.90	2	0.40	2.80
e. Buston–Altintopkan road rehabilitation	1	0.40	1	0.60	0	0.30	0	0.00	1.30
2. Water Management	0.52		0.54		0.30		0.00		1.36
a. Dagana riverbank protection (Sai salt plant)	3	0.60	2	0.90	1	0.30	0	0.00	1.80
b. Shaidan riverbank protection, Sai	3	0.60	2	0.90	1	0.30	0	0.00	1.80
c. Sai riverbank protection, Pangaz area, Burak	3	0.60	2	0.90	1	0.30	0	0.00	1.80
d. Sai riverbank protection, Pangaz area, Suja	3	0.60	2	0.90	1	0.30	0	0.00	1.80
e. 44 pump stations in Asht district	1	0.40	1	0.60	1	0.30	0	0.20	1.50
3. Power Supply and Telecommunications	0.60		0.90		0.90		0.40		2.80
a. 13 km transmission line 10 kV in Asht district	3	0.60	3	0.90	3	0.90	2	0.40	2.80
b. 10.5 km transmission line 0.4 kV in Asht district	3	0.60	3	0.90	3	0.90	2	0.40	2.80
c. Transmission line 10 km 0.4 kV in Asht district	3	0.60	3	0.90	3	0.90	2	0.40	2.80

Item	Relevance		Effectiveness		Efficiency		Sustainability		Overall Rating
	Score	%	Score	%	Score	%	Score	%	
including Gulshan town									
d. 17 km of telecommunications lines in Asht district	3	0.60	3	0.90	3	0.90	2	0.40	2.80
4. Resettlement and Schools		0.60		0.70		0.60		0.40	2.30
a. 7 km of roads in Gulshan center	3	0.60	3	0.90	2	0.60	2	0.40	2.50
b. School in Jamoat village, Shaidan	3	0.60	2	0.60	2	0.60	2	0.40	2.20
c. Dagan school	3	0.60	2	0.60	2	0.60	2	0.40	2.20
d. Schools in Pangaz and Shaidan	3	0.60	2	0.60	1	0.30	1	0.40	1.90
C. Regions of Republican Subordination									1.35
Water Management		0.40		0.45		0.30		0.20	1.35
a. Khanaka river underground water duct	3	0.60	2	0.60	1	0.30	1	0.20	1.70
b. Karatag pump station Gissar district	1	0.20	1	0.30	1	0.30	1	0.20	1.00
Overall Rating		0.54		0.73		0.52		0.25	2.04

Source: Asian Development Bank Operations Evaluation Mission.

SOCIOECONOMIC SURVEY OF SELECTED SUBPROJECTS

1. The survey was carried out to assess the socioeconomic impacts of the Emergency Flood Rehabilitation Project, implemented from 1999 to 2001.¹ The field visits and surveys were held in several subproject sites in Khatlon, Regions of Republican Subordination, and Sughd oblast from 9 to 23 October 2006. These sites were selected on the basis of a review of relevant background documents and in consultation with former project implementation unit staff charged with the subprojects.

2. This review included meetings with key officers of the Department of Environment and Emergency Situations, Center for Liquidation of Consequences of Natural Disaster, Ministry of Water Resource Management in Dushanbe, and local district officials; and visits to subprojects. A combination of rapid socioeconomic assessments, interviews, and focus group discussions was employed. In Asht district, initial meetings were held with district administration staff and heads or representatives of local authorities or *jamoat*.²

3. This report covers 19 subproject sites. Rapid assessments were undertaken mostly for roads, bridges, and riverbank strengthening subprojects, while the surveys were conducted in four resettlement centers and rehabilitated schools in Asht district (e.g., Pangaz, Shaidon, and Shodoba). Focus group discussions and house-to-house interviews covering 65 people were done in these centers.

A. Description and Findings

1. Power Transmission and Phone Communication Lines, Asht District, Sughd Oblast

4. The flood destroyed a number of infrastructure and utilities. Restoration of transformer substation 10/04 kilobytes in the villages of Dagana, Gulshan Mullomir, Pangaz, Saro, Shaidon, and power lines in 2000 brought back electricity and other means of communication, such as radio, television, and telephones to the community. The structure and utility appeared to be in good working condition, which was later confirmed during group discussions and interviews.

5. Telephone communication lines were restored in Mullomir, Pangaz, Dagana, Shaidon, Saro, and Gulshan villages in 2000. Although the importance and relevance of telephones to emergency situations, medical aid, social cohesion, welfare, and economic development in general could not be overemphasized, few households in the resettlement centers visited have telephones of their own.

2. Roads, Bridges, and Riverbank Strengthening Works, Asht District, Sughd Oblast

6. Restoration work was done along 77.45 km of the Gafurov–Pungan motorway, the bridge on 7 km of Shaidon–Dagana motorway, on km 0–7 of the Shaidon–Dagana motorway, and on km 7–15 of the Shaidon–Pangaz motorway. Riverbank strengthening works accompanied the rehabilitation of motorways and bridges in Dagana Sayy, Pangaz Sayy, and Shaidan Sayy. The rehabilitated bridge on Gafurov–Pungoz motorway connects Ashtsky district

¹ ADB. 1999. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Republic of Tajikistan for the Emergency Flood Rehabilitation Project*. Manila (Loan 1714-TAJ).

² Subdistrict unit of the Government.

with the community of more than 122,000 in the oblast center of Khujand town and other towns of Sughd oblast. The rehabilitated bridge on Shaidon–Dagana motorway connects the 21,300 inhabitants of Dagana village to the center of Shajdan settlement and the other villages of Asht district. The rehabilitated Shaidon–Pangaz motorway connects the more than 23,000 inhabitants of Pangaz Jamoat to the center of Shaidon settlement and other villages of Asht district, the center of the oblast, Khujand town, and other towns of Sughd oblast.

3. Roads, Bridges, and Riverbank Strengthening Works, Khatlon Oblast

7. **Rehabilitation of Road Dangara-Kungurt.** This 3 km road was rehabilitated in 2002 to connect Kungurt village to the center of Dangara district and other towns in the oblast.

8. **Riverbank Strengthening Works in Pyandzh River, Hamadoni District.** The Pyandzh river overflowed the bank and the flooding affected adjacent villages. A dam with ridged stone waveguides was installed in the expanded riverbank using project funds. Later, the stone waveguides were removed and reinstalled in a nearby bank. The constructed dam is still in place and remains useful in reducing security threats posed by floods.

9. **Riverbank Strengthening Works in the Left Bank of Yakh-Su River Sewerage.** The Yakh-Su river is one of the largest rivers in Tajikistan. Although the April 1999 flood damaged 17 houses and fields in adjacent villages, no lives were lost. Project funds were used for bank strengthening works to redirect the riverflow. The work was completed using good standards and appears to have had a high positive impact for people living in adjacent villages. Threats of disaster and safety were reduced.

10. **Riverbank Strengthening Works on the Left Side of River Yak-Su, Vose District.** The Government funded the bank strengthening works carried out at this site for \$21,000. The 1999 floods damaged the existing bank-strengthening dams and raised threats of flood to adjacent buildings and villages. Serious threats to its 8,000 inhabitants, livestock, and utilities (schools, medical center, power structures, and other buildings) were reduced. The availability of road and passage improved mobility and trading of agricultural produce and livestock.

11. **Riverbank Strengthening Works in Khonobod, Kulyab District.** The bank strengthening works were undertaken on the left side of the river with Asian Development Bank (ADB) funding. Time constraints precluded rapid assessment, but the subproject has had a positive impact on socioeconomic welfare. Threats to safety were reduced; economic activities enhanced, e.g., cropping and breeding of livestock; and access improved to school and medical services.

12. A male inhabitant of the village noted that about 1,000 households live on that side of the river. The river has encroached on the land area and a number of households have moved their houses further away. The safety of the village appeared to be compromised by imminent landslides from the hills. No bridge is available to cross the river; the manually operated cable (the only means of transportation) compromises the safety of the people particularly schoolchildren. The people walk through the river at low tide.

13. In 1965, the Government resettled the population who later moved back to their old unsafe places. Available resources in the resettlement area would entice people to stay. The main source of livelihood is agriculture and livestock, which are taken to the market through the river when the water level is low. Goods and commodities to and from the village are transported in the same manner.

14. The village has power lines but no access to drinking water. Residents use river water for drinking. The village has one school up to grade 5 and one medical point. After completion of grade 5, schoolchildren move to the neighboring village school, which offers classes to grade 11. The schoolchildren use the cable car daily to attend school on the other side of the river. The girls usually cease attending school after grade 9.

15. **Construction of Bridge in Canal Chubak, Hamadoni District.** Restoration of this bridge was estimated to cost \$100,000. The actual cost was \$95,806. The Operations Evaluation Mission (OEM) found the bridge to be in good condition. The site is strategically important for the Tajik border troops staffing the Tajikistan and Afghanistan border in Hamadoni district. The bridge was useful in (i) reducing security threats, (ii) countering drug smugglers and illegal activities, and (iii) ensuring political stability. In addition, the bridge allows the inhabitants of adjacent villages who have farmlands to transport their produce of onions and tomatoes. The adjacent village houses a school up to grade nine, and schoolchildren move to higher grades in the neighboring school.

16. **Bridge in Kulyab District.** The bridge was damaged by floods but was quickly restored in 1 month. A woman settler confirmed that, although strengthening and other improvement works took over a year to complete, they are satisfied with the new, elevated, and wider bridge that also provides pedestrian walkways especially suitable for schoolchildren. The new bridge restored the normal socioeconomic activities of the people who would have continued to be served with the old lower bridge without ADB funding for its restoration.

B. Description of Resettlement Centers

17. The heavy rains of 7 July 1999 in Asht district resulted in mudflows that swept away two bridges on the roads from Gafurov to Pungan and from Shaidan to Dagana and Pangaz. The disaster also destroyed houses, schools, electric power lines, telecommunication lines, and transformer substations. The villages affected include (i) Dagana, Mullomir, and Shaidan of Shaidan Jamoat; and (ii) Khishtkhona, Pangaz, and Saroof Pangaz Jamoat. The Asht Commission on Emergency Situations categorized the damage to affected households as follows:

- (i) first category: houses completely destroyed,
- (ii) second category: houses partly destroyed, and
- (iii) third category: houses flooded or assessed to be located in unsafe sites for potential floods.

18. The Government allocated land plots of 0.15 hectares (ha) for each affected household. Other organizations offered to construct two-room houses, while ADB's funds were used to construct basic utilities and infrastructure such as power transmission lines, telecommunication lines, and roads; as well as schools, classrooms, and bridges in some centers.

19. The project completion report notes that 288 households were resettled after the floods.³ During field visits and meetings with the relevant district and jamoat authorities,⁴ the OEM team found that fewer were actually resettled. The discrepancy arose from confusion regarding the categories of affected households (para. 17). Resettled households include the following:

³ ADB. 1999. *Project Completion Report on the Emergency Flood Rehabilitation Project in Tajikistan*. Manila.

⁴ Beknazarov Bahriddin, head of Asht District Hukumat Office.

- (i) First category: people whose houses were fully destroyed, restoration was no longer feasible, and location was unsafe. Households were allocated land plots from 0.08 ha to 0.15 ha and relocated in four centers (two in Shaidon Jamoat, Dagana village; one in Shaidon settlement; and one in Shodoba Jamoat). About six households preferred to move to towns; consequently, the responsible enterprises purchased apartments for them in Chkalovsk, Kairokum, and Khujand.
- (ii) Second and third categories: people whose houses were partly affected by floods or assessed to be located in unsafe sites for potential floods. They were given land plots (0.15 ha) and advised to transfer their houses (construction materials) to the allocated safe area.

20. The findings in four resettlement areas surveyed share similarities in some respects. The issues raised could also be cited in many other rural communities of Tajikistan not necessarily affected by flood or resettlement efforts. Despite the problems, the people are satisfied with the ADB assistance. Each visited community expressed gratitude to the Government, ADB, and the international community.

21. Some households managed to restore and reoccupy their flood-damaged homes. Others decided otherwise due to the extent of restoration required. The flood brought huge and heavy stones and rocks, some of which were impossible to remove making the land parcel unusable. Others, whose land was free of huge stones or with houses partly livable, restored their properties. The tendency to reoccupy their old damaged houses is caused by the following social and economic factors:

- (i) people wish to hold on to their original land parcel and houses, and end up maintaining two houses: one in the village and the other in the relocation center;⁵
- (ii) a two-room house does not meet the growing demand of households;
- (iii) people need closer access to drinking and irrigation water;
- (iv) people hope that such a huge flood will not occur again, and
- (v) instead of abandoning them, people believe they should keep property inherited from their parents.

22. **Jamoat Shaidon.** Dagana village has a population of more than 2,130. Fifty-one households belonging to the first category were allocated land plots of 0.15 ha and provided two-room houses by different enterprises. The affected inhabitants were moved to the allocated sites in the same village:

- (i) In a group of 33 families, about 200 people were moved to the southeast suburb of a remote village, far from the school and source of potable water.
- (ii) The second group of 18 affected households, comprising about 100 people, was moved to the southwest of the village, near the village center.
- (iii) For households rated as second and third categories—132 households—land parcels were allocated for transfer of their houses.

23. In newly restored streets, transformers, electricity power lines, and phone communication lines were established and water pipelines laid using ADB funds. Although all

⁵ In a number of meetings with officials (district hukumat office, secretary of Jamoat Shaidon, etc.) and villagers, participants mentioned that when the affected people had a meeting with high ranking officials, including the President, they were advised not to leave their resettlement center properties but rather to maintain them.

houses were provided with electricity, power lines, and water pipes, the amount of available potable water was inadequate. Irrigation water is also insufficient and depends on Dagana canal. Prior to the disaster the village had two wells; one was washed away by the flood.

24. In Mullomir village, 16 households of the first category were allocated land plots of 0.15 ha and funds, and 60 households of the second and third categories were allocated land parcels.

25. In Shaidan settlement, 11 households of the first category were allocated by different enterprises with land plots of 0.08 ha of which nine had two-room houses.. Other households constructed their houses through their own means. In newly restored streets, transformers, electricity power lines, and phone communication lines were installed and water pipelines laid. Nineteen affected households of second and third categories were allocated land plots to transfer their houses.

26. **Jamoat Pangaz.** The village is one of the most densely populated areas with 23,000 residents. More than 4,000 male laborers have migrated mainly to the Russian Federation to earn a living. Ninety households of the first category were provided with land plots of 0.15 ha and two-room houses in the territory of settlement Gulshan, Jamoat Shodoba.

27. In newly restored streets, transformers, power lines, and phone communication lines were established and water pipelines laid. The problem in this settlement is shortage of potable water. The advantage is that the resettlement is located near farmlands and an industrial area such as the cotton plant where the inhabitants can find work.

C. Resettlement Centers

28. **Dagana 1,⁶ Shaidon Jamoat.** Thirty-three households whose houses were destroyed during the flood were relocated in this area. The affected people expressed their appreciation to the Government and the international community for the assistance provided. Some advantages of the previous place of residence mentioned include (i) better and closer access to drinking water, (ii) better access to transportation and closer to center, (iii) better houses (with more rooms than the ones provided after resettlement), and (iv) school and the medical service center more accessible and in better condition.

29. Among other issues raised was the safety of the new resettlement site from future floods. During focus group discussions, the people considered the new resettled area still unsafe. Residents recalled that, since resettlement, they withstood three more floods. Although the damage was not as serious as the 1999 floods, it nonetheless badly affected their social and economic conditions. Floods and mud partly destroyed their walls, farmlands, and yard. The new resettlement site was located at the foot of the hills. The people suggested building a canal to redirect floods away from the village. The proposed canal is part of the resettlement plan passed 6 years ago, but it has not yet been implemented.

30. According to the jamoat secretary, the first alternative was to resettle these people to safer ground. However, in a meeting with high-ranking officials (including the President), the people requested that they be resettled in an area with a garden. This is referred to as

⁶ As this village has two resettlement centers, Dagana 1 and Dagana 2 are used only for presentation purposes in this report.

Sovkhoze's garden. That meeting yielded a positive response and people were consequently resettled there.

31. People essentially get by through foreign remittances of labor migrants. From each household, at least one male has migrated. According to the figures given by the jamoat secretary, an estimated 300 of a total population of 2,130 have migrated. Livelihood is supplemented by subsistence agriculture. From discussions, the resettlement is assessed to not have affected the livelihood of these people. Its impact is insignificant as they previously lived closer to the center and had better shopping opportunities. Agriculture and gardening occupy them in both places, e.g., before and after resettlement, depending largely on the weather and availability of water in the irrigation canal.

32. In terms of infrastructure and utilities, residents have access to rough roads, power transmission, and telephone communication lines (five households). The situation with phone communication has improved. Before resettlement, they did not have phone lines and communication with the district center. Now, the installed equipment and lines are in good working condition. The people have electricity with limited supply as determined all over the country.

33. The medical point for the community is a wagon. Although obviously not an adequate facility, it meets the standards. The people receive medical services. Nurses visit patients at home. The community identified the more common diseases in the area as diarrhea and jaundice caused by unclean water.

34. The children walk 4.5 km to school, farther than before the disaster. During discussion with the OEM, the people identified the need to construct a primary school near the village. The jamoat secretary advised that at least 100–150 pupils would be needed for a primary school to be constructed. Unfortunately, the community does not have that many primary school students.

35. With the resettlement, communication and mobility became more difficult. Previously, it was more convenient, walking about 0.2–0.5 km compared with present, which is about 7 km. Once a day, a bus leaves the village at 7:00 am and returns at 11:00 am. This makes transferring goods and commodities from the district center difficult. Facilities such as library, shops, sport and playgrounds, and clubs are not commonly available in many rural communities of Tajikistan.

36. Access to both irrigation and drinking water is difficult. The existing well was washed away by the flood. The Red Cross delivered water through pipelines for drinking from the water springs and the system is still in operation. The focus group stated that they had insufficient drinking water when they moved here as people from other relocation centers also used it. The population carries drinking water from a distance of 3.5 km from the water spring for drinking, cooking, and washing using donkeys, carts, and pails. Sometimes water from the ditch is used instead. Women normally spend an average of 4 hours daily to carry water to their homes. Water fetching is usually the job of children and women in households.

37. The following recommendations and issues need attention for this resettlement center:

- (i) install a well to provide drinking water,
- (ii) construct a canal (to redirect the flood) from the relocated center at the foot of the hill, and
- (iii) construct a bridge to connect the village to the primary school.

38. Social cohesion is emphasized in addressing the community's problems. Where possible, the community attempted to solve the problems through *hashar*.⁷ This was used when threats of floods and imminent damages persist even after resettlement. Although arrangements were made with the *hashar* to make the canal that would redirect the flood, lack of sufficient funds and machines rendered the benefits of this move suboptimal.

39. **Dagana 2, Shaidon Jamoat.** In this center, 18 households whose houses were destroyed during a flood were resettled. The resettlement center is located in safer grounds than Dagana 1.

40. During meetings and focus group discussions, the OEM learned that the new resettled area is safe from floods, although potential threats of flood remain, especially if the canal remains unstrengthened. The canal has changed course and the community strives to find a way to direct the canal to its original course. They have tried to improve the situation to some degree with *hashar* and the *mahalla* (community social structure) collected TJS50 from each household. However, without adequate funding and machinery, the work undertaken is insufficient.

41. The livelihood of people here is similar to those of Dagana 1, which consists mostly of cropping, gardening, and receiving foreign remittances from migrant workers. The resettlement had no significant impact on the livelihood of the affected people. However, as in Dagana 1, their original land was closer to the district center and had better shopping opportunities. Agricultural and gardening activities in both places depend on the availability of water from the canal.

42. In terms of infrastructure and utilities, nonasphalted road access was provided. They have power transmission and phone communication lines. The discussions indicated that, although phone communication lines were installed, most households in this community only received phone points (to connect with phone apparatus). The people believe that "they were allocated 25 phone points (for 25 households) in total, but after giving five points in the upper section of the resettlement center (Dagana 1), that work was completed." The installed equipment and power transmission lines still are in good working condition. Access to electricity became more reliable, although with limited supply as determined nationally.

43. People receive medical services from the existing medical point in the village, and nurses visit patients at home. This arrangement is maintained in the resettlement area.

44. In this resettled community, access of children to school is good. They attend the newly constructed school (ADB fund-funded project). The school is not far away and in better condition than their previous school.

45. Although this resettlement center is in a more remote area, transportation is good. They have the same bus routine, e.g., once per day with departure from the village at 7:00 am and return at 11:00 a.m. The community does not have many shops and few transportation alternatives. It experiences some difficulties with the transfer of goods and commodities from the center.

⁷ *Hashar* is a traditional practice where community members come together to provide free labor to improve an area or solve other community concerns.

46. This community experiences the same difficulty as Dagana 1 with access to irrigation and drinking water. Lack of access to irrigation water negatively affects the gardens. The existing well was destroyed by the flood. The pipeline system now used in the village does not meet sanitary norms. Water is delivered from the hills about 60 km through the open water lines. Livestock pasturing and other animal wastes contaminate the water. Dead birds and animals were often seen in the water canal. Some households share water from the existing water pipes constructed by the Red Cross, close to resettlement center Dagana 1. Most of the population carry water from the spring about 1.5 km. The same methods of carrying water are employed as in Dagana 1.

47. Compared with Dagana 1, this center is in a good location and better condition. It is located in a flatter area, with fewer threats of floods, and closer to the center. Similar difficulties like shortage of irrigation and drinking water, and transportation means are nonetheless experienced.

48. Recommendations and urgent needs were identified, including the need for

- (i) installation of well for drinking water,
- (ii) strengthening the bank of Canal over the village, and
- (iii) phone communication.

49. **Gulshan Settlement, Shodoba Jamoat.** At this center, 90 households affected by floods were resettled from Pangaz Jamoat. All interviewees and participants in the discussions indicated that the resettlement was voluntary. People were resettled in the most advantageous location compared with all four areas (resettlement centers) visited by the survey team. The people resettled here from Pangaz Jamoat. This jamoat is in a more remote area from the district center and the houses are located on the hill. Transportation was difficult during rainy and winter seasons in their previous place of living. Households located in Pangaz have greater threats of floods, especially houses located along with and/or close to the canal. As assessed by a number of focus group participants, resettlement to Gulshan settlement was good and advantageous.

50. The new resettlement center is located in a flat area safe from floods unlike the previous hilly area where the people lived. They have enough land (allocated 0.15 ha) for cultivation. The new resettlement area is close to the district center (that offers better and closer access to the social infrastructures like schools, shops, and medical points). This provides these families with more conveniences than they had before. Some families retained their damaged houses although the decision had nothing to do with the new place of resettlement.

51. Foreign remittances of labor migrants are an essential source of income for people in this resettlement area. Each household has one to three male members working out of the country. With resettlement closer to an industrial area and farms, they also found more income-generating and job opportunities compared with the remote and uphill village in Jamoat Pangaz. They found opportunities to (i) work in other people's farmlands, (ii) work in the cotton plant, and (iii) engage in other trading activities. With resettlement, they got a parcel of flat land where they cultivate crops in kitchen gardens. The difficulty with the resettlement is the limited number of rooms in the house as discussed for all visited four resettlement centers. A two-room house does not meet the rising demand in the households.

52. This resettlement was most advantageous than the other three. As in the other centers, main infrastructure and utilities were put in place. Although the roads in this resettlement village are better constructed and asphalted, the subcontractors did not lay down pipes in the passes (ditches) between the streets in the new resettlement area. This makes transportation difficult. Also, the absence of the concrete trays in the ditches along the roads of the new village results in erosion and damage to asphalt roads. In some sites, some people employing hashar have laid the pipes (in ditch) in passes for different streets. But the concrete trays are not laid in the ditches along the roads, a situation that reduces sustainability of the roads. The power transmission lines are good. Although the phone communication lines are installed, only a few people (six households) have phone points and others are dissatisfied. Still, the situation with the power supply and phone communication improved compared with that prior to resettlement. The installed lines and equipment for electricity are more reliable than before although the supply of electricity remains limited as determined nationally.

53. Access to medical services improved upon resettlement. The medical point is located about 3 km away from the village and they also use a district center medical point. The practice of nurses visiting patients and checking their health situation, and the types of diseases here are common as in the rest of the other resettled communities.

54. The people met and interviewed in this resettlement village described difficulties accessing drinking water and transportation. A well for drinking water is urgently needed. The nearest bus stop in the new village is about 1 km away, which causes inconvenience in transportation, especially of goods and commodities. However, this type of issue is common for most rural communities of Tajikistan.

55. **Shaidon Settlement, Shaidon Jamoat.** Shaidon Jamoat has another resettlement center with 11 households. These households are from Mullomir village. Sixteen households had houses damaged by the flood. Of these, 11 were resettled in Shaidon Jamoat. The rest preferred to get apartments from Chkalovsk, Kairokum, or Khujand, towns and consequently moved to these towns. Nine households were provided with land parcels and houses, while two households were allocated only land parcels. They constructed the houses themselves.

56. The people were resettled to a safer location, closer to the district center, and more convenient for accessing medical services, roads, and schools. The main problem identified was very similar to the other resettled areas: lack of drinking water. The irrigation water is normal and contributes to the people's livelihood. The main source of income is from remittances from migrant workers. The resettlement has not negatively affected their livelihood.

D. Schools

57. Five rehabilitated schools were visited during the survey. Interviews and meetings were held with school headmasters and teachers. The rehabilitation works were relevant to project objectives. During the 1999 flood, these schools were damaged, with classrooms totally washed away. The new schools were constructed to meet the increased demand after the resettlement of affected population. Although the buildings initially looked normal, visible lapses in the quality of materials and rehabilitation were obvious.

58. **School 17.** School number 17 named after A.I. Sino is located in town Shaidon, Jamoat Shaidon. It is an 11-grade school with 20 classrooms. The school has 57 teachers and 584 schoolchildren study in one shift; 288 are girls. The school used to have 634 students who studied in two shifts. This reduction was demographic-driven, as mentioned by the school

headmaster. The pupils come from nearby mahallas traveling an average of 1 km. The school conditions have improved since the rehabilitation. The schoolchildren attendance and studies as assessed by the school director have improved. The number of graduates entering different high institutes increased. This year, 70% of school graduates entered high institutes in Khujand and Dushanbe.⁸

59. As in other schools, this school lacks a sports hall, books, desks, and other supplies. The heating system is not working; classrooms are heated by coal.

60. **School 13.** School number 13 is located in the Jamoat Pangaz, Khishtkhona village. This school has a total of 420 pupils and 50 teachers. The school has 22 classrooms including 4 classrooms built under this Project. During the flood, four classrooms were damaged. Although they built a building with four classrooms in a relatively safer site, serious threats remain as the village still sits on the hill prone to flooding. These classrooms are allocated for primary school children of grades 1–4 (age 7–10 years). The construction of the additional four classes was relevant to the Project and from a social perspective the additional classrooms are useful in sustaining the educational needs of the children of the affected community.

61. The condition of the building was normal, although there were lapses during construction. In particular, this relates to the classroom floors assessed to be in terrible condition. The floor is made of poor cement and covered by linoleum. After 1 academic year, nothing was left of the linoleum. The cement floor is uncovered bringing in soil and dust harmful to human health and children in particular.

62. Teachers and students study in this unhealthy environment. “It is harmful for the health of children; although parents express their dissatisfaction, they went along with it so as not to compromise their children’s education” says the deputy school headmaster. All four newly built classes were seen and the situation with the floor and linoleum was in the same unacceptable condition. The trough in the building roof was missing (not installed) resulting in rain showers inside the classroom during rainy season. Photos of the corridor, classrooms with floors covered with dust, and walls damaged because of absence of a trough were provided. The parents collected some funds (TJS1,500) and worked in hashar to repair the floors of some classrooms. They took out the wall between two classrooms—a remedial measure. Subsequent floods affected the ground and continued to affect some classrooms. The combined classrooms were used as a multipurpose hall.

63. **School 11.** A building of eight classrooms was constructed to meet the rising demand for schools after resettlement. These classrooms were constructed as a branch of school number 11. This school has 170 pupils in primary grades. The classroom floors have the same bad and dusty conditions as school number 13. The trough is missing in the roof of the building as in the school number 13 and results in damage to the walls. Through hashar, the parents made stairs for the school, which were not in place during the opening of new classrooms. One of the parents built a wooden floor in one of the classrooms where his child studied. The school was opened in 2001.

64. **School 36.** A building with four classrooms was constructed in the school for 80 pupils in the aftermath of the floods. The school has 405 pupils and 40 teachers. The new classrooms looked unused compared with the other classrooms built under this Project in schools 11 and 13. The school headmaster shared that when the classrooms were given out for use, they did

⁸ The school headmaster is Makhkamov Ilhom.

not have any desks. The school had no resources and the classrooms were left unused for about 5 years. The classrooms were constructed to replace the destroyed school classrooms. This year, through the pressure of the district hukumat,⁹ the school headmaster repaired very old desks, more than 50 years old, just to open the classrooms.

65. The condition of the building looks good, although the floor has the same problems as the newly built classrooms in schools 11 and 13. The difference is that the linoleum is still intact as it has not been used. The roof and ceilings have missing troughs.

66. **School 4.** This 11-grade school has 706 students and 84 teachers. It is located in the hills of Jamoat Pangaz, the village Pangaz. The project funds in this school were used to strengthen the canal bank and construct a concrete wall to protect the school. The flood this year partly washed away the constructed wall. The school requires rehabilitation and books.

E. Social Participation and Cohesion

1. Social Participation

67. Social participation is assessed as low, particularly during implementation and maintenance phases. While time is critical for emergency projects leaving not much room for consultation with the community, the involvement of community during implementation and follow-up of project (activities) and encouragement of community participation in maintenance of utilities are essential for sustainability. In the cases cited above, self-help initiatives are the traditional social practices that communities rely on to keep projects working because they are aware of the inability of the Government to respond sufficiently and timely to their needs. Cases in point are illustrated here.

2. Community Initiatives

68. Hashar is a traditional practice where community members come together for free labor to improve an area or solve other concerns of the community.

69. Another tool used to mobilize the community is the mahalla (community social structure) which collects funds from each family to boost the community's financial resources; mahalla also disseminates information about the different community activities and events, including hashar.

F. Case Studies

1. Hashar Bridge Construction

70. Three bridges along the river, two streets, and 136 houses were totally destroyed in the June 2005 flood in Hamadoni.¹⁰ The flood affected four jamoats (subdistrict) and one school. The basements of the houses were filled with mudflows. The district government allocated land parcels and provided financial assistance for the resettlement of 13,611 families in safe areas. The OEM learned that the Government did not have funds to restore the damaged infrastructure. The OEM witnessed how the hasher worked to build the bridge, and install big water pipes for one of the villages. For more than a year, the village had no communication with

⁹ District government.

¹⁰ Renamed name for Moskovskiy district

the outside, which affected the socioeconomic condition of the inhabitants. The people walked through the river when the water level was low.

a. School Improvements through Hashar

71. The floods of 1999 washed away some classrooms and affected others in school number 13. ADB funds were used to construct a building with four classrooms. However, just after 1 academic year the linoleum covers in the corridor and in the classrooms came off due to its low quality. The cemented floor was not of good quality either. The location of the school exacerbated the already poor construction of the school. Floods eroded the floors and damaged classroom walls. Seeing no hope for external assistance, the school headmaster and deputy brought the concern to mahalla and the community. Through hashar, teachers and parents used their own resources to build a wooden floor. The shares of contribution from parents vary from TJS3 to TJS50 and above depending on their economic conditions

b. Hashar to a School Canteen

72. Floods destroyed some classrooms in school number 36. The school lacked a snack area. This was addressed through the contribution of parents and hashar that made way for a small building. The unfinished canteen sits on a site prone to flooding, close to the same site previously destroyed.

2. Designing Relocation Houses

73. A household headed by a woman with five children was resettled to Dagana 1 after the flood destroyed her three-bedroom house. The new house was unfit for their needs. The woman stated: "I have five children and now eight people live in this house. Two families occupy the two rooms after my son got married. Two of my sons leave for Russia every year and earn our living. The next son is getting married and I do not know what to do. We have somehow restored the damaged house so one of the families could stay there. But soon after, the next flood destroyed it again. Here, we have a land parcel (0.15 ha) but have difficulties with water and limited rooms. The financial possibilities also are very limited. We had spent much to complete the construction of the two-bedroom house provided to us. When I got it, the works were not complete. The windows had no glasses." The survey met a number of people who had similar concerns.

3. Communal Facility Associations

74. These cases show the merits in formalizing the creation of a joint facility association to assist communities, the Government, and funding agencies in their efforts to keep infrastructure and utilities sustainable. Road user fees could also be explored where possible.

**MANAGEMENT RESPONSE TO THE PROJECT PERFORMANCE EVALUATION
REPORT FOR THE EMERGENCY FLOOD REHABILITATION PROJECT
IN TAJIKISTAN (Loan 1714-TAJ)**

On 3 May 2007, the Director General, Operations Evaluation Department, received the following response from the Managing Director General on behalf of Management:

We agree with the overall findings and assessment of the above Project Performance Evaluation Report. We have no specific comments on this report and we feel that a Management response is not necessary.

**MANAGEMENT RESPONSE TO THE PROJECT PERFORMANCE EVALUATION
REPORT FOR THE EMERGENCY FLOOD REHABILITATION PROJECT
IN TAJIKISTAN (Loan 1714-TAJ)**

On 31 May 2007, the Director General, Operations Evaluation Department, received the following response from the Managing Director General on behalf of Management:

Further to the memo dated 2 May 2007 on the above subject, we would like to advise you for more clarity that we agree with the overall findings and assessment of the above Project Performance Evaluation Report and have no specific comments on this report.