



# Technical Assistance Consultant's Report

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Project Number: 37373 (TA 4784)  
July 2007

## Republic of Tajikistan: Dushanbe-Kyrgyz Border Road Rehabilitation Project (Phase III)

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**Asian Development Bank**

# Final Report

## Volume I



**Project Number: TA-4784-TAJ**  
**Republic of Tajikistan:**  
**Dushanbe-Kyrgyz Border Road**  
**Rehabilitation Project (Phase III)**

**July 2007**

## ABBREVIATIONS

ADB	ASIAN DEVELOPMENT BANK
ATSS	ADMINISTRATION FOR TRAFFIC SAFETY SUPERVISION UNIT
CAR	CENTRAL ASIA REPUBLIC
CAREC	CENTRAL ASIA REGIONAL ECONOMIC COOPERATION
CIS	COMMONWEALTH OF INDEPENDENT STATES
EBRD	EUROPEAN BANK FOR RECONSTRUCTION & DEVELOPMENT
EIRR	ECONOMIC INTERNAL RATE OF RETURN
EU	EUROPEAN UNION
FIDIC	INTERNATIONAL FEDERATION OF NATIONAL ASSOCIATIONS OF INDEPENDENT CONSULTING ENGINEERS
FMA	FINANCIAL MANAGEMENT ASSESSMENT
FSU	FORMER SOVIET UNION
GOT	GOVERNMENT OF TAJIKISTAN
HDI	HUMAN DEVELOPMENT INDEX
HH	HOUSEHOLDS
ICB	INTERNATIONAL COMPETITIVE BIDDING
IEE	INITIAL ENVIRONMENTAL EXAMINATION
JBIC	JAPAN BANK FOR INTERNATIONAL COOPERATION
JFPR	JAPAN FUND FOR POVERTY REDUCTION
MOTC	MINISTRY OF TRANSPORT AND COMMUNICATION
NCB	NATIONAL COMPETITIVE BIDDING
NGO	NON-GOVERNMENT ORGANISATION
OPEC	ORGANISATION OF PETROLEUM EXPORTING COUNTRIES
PIU	PROJECT IMPLEMENTATION UNIT
PPTA	PROJECT PREPARATORY TECHNICAL ASSISTANCE
PRC	PEOPLE'S REPUBLIC OF CHINA
RSA	ROAD SAFETY AUDIT
SCC	STATE CUSTOMS COMMITTEE
SRP	SHORT RESETTLEMENT PLAN
SSNP	STATE SUPERVISION SERVICE ON NATURE PROTECTION
STI	SEXUALLY TRANSMITTED INFECTION
TJS	TAJIKISTAN SOMONI (CURRENCY)
TRACECA	TRANSPORT CORRIDOR EUROPE CENTRAL ASIA
TSSU	TRAFFIC SAFETY SUPERVISION UNIT
USD	UNITED STATES DOLLARS
RAYON	COUNTY LEVEL ADMINISTRATION
JAMOAT	SUB-COUNTY OR DISTRICT LEVEL ADMINISTRATION

## CURRENCY EQUIVALENTS

(as of 31 March 2007)

Currency Unit	–	Somoni (TJS)
TJS1.00	=	\$0.29
\$1.00	=	TJS3.44

## NOTES

- (i) The fiscal year (FY) of the Government of the Republic of Tajikistan ends on 31 December
- (ii) In this report, "\$" refers to US dollars

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## I. RATIONALE: SECTOR PERFORMANCE, PROBLEMS AND OPPORTUNITIES

1. The road section to be improved under the Project is the final stage (Phase III) of the overall Dushanbe to Kyrgyz Border Road Rehabilitation Project being funded by the ADB. The Highway forms an integral part of a regional road network in Central Asia that directly links Kazakhstan, the Kyrgyz Republic, the People's Republic of China (PRC), Tajikistan, Afghanistan, and Uzbekistan. More broadly, this network is part of a larger network providing links to the ocean ports of Pakistan and Iran to the south, and to the Russian Federation to the north. The feasibility study for the Project was prepared through an Asian Development Bank (ADB) technical assistance (TA)<sup>1</sup>. The design and monitoring framework for the proposed Project is in Appendix 1.

### A. Performance Indicators and Analysis

2. Under the former Soviet Union (FSU), the regional road network existed only as part of an internal network, with no links to Afghanistan or the PRC. Following the breakup of the Soviet Union, the condition of the national roads comprising the network deteriorated substantially because of the decrease in financing for road maintenance in most countries (arising from budget constraints) and in the case of Tajikistan, many years of civil conflict (1991-1997). However, the situation has been improving over the last several years because the civil conflicts have ended and, mostly due to the efforts of the ADB, financing for maintenance has generally been increasing. Much of the regional road network is being rehabilitated by ADB and other international and bilateral agencies, with many significant projects already completed. The ADB-financed first phase of the rehabilitation of the Dushanbe–Kyrgyz border road is being implemented<sup>2</sup> and a contract for the ADB financed second phase of the Dushanbe–Kyrgyz border road has been awarded.<sup>3</sup> Among the recently approved projects to improve the Regional International Network are (i) the ADB-financed project to rehabilitate part of the road from Osh to the border with the PRC<sup>4</sup> and (ii) the project financed by the Government of the United States to construct a bridge over the Pyandzh River between Tajikistan and Afghanistan. The river forms the border between Afghanistan and Tajikistan, and past crossings has been by ferry and only during certain months. Additional projects to improve remaining sections of the network are planned. MOTC has requested further assistance through ADB's regional program for Central Asia to include the funding to rehabilitate the Dushanbe–Tursunzade Highway to Uzbekistan (possible as part of this Phase III Loan facility). The Islamic Development Bank has also made a large contribution to improve the Tajikistan road network, and other bilateral agencies are in talks with the governments of Tajikistan and the Kyrgyz Republic to improve other network sections. The road link from Karamik (border of Tajikistan and Kyrgyz Republic) to Sary Tash in the Kyrgyz Republic (on the road from Osh to the PRC–Kyrgyz Republic border) is being studied for rehabilitation under EU project, "Prefeasibility and Feasibility Studies for Road Sections of the Termez-Dushanbe-Sary Tash Road". The

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<sup>1</sup> ADB. 2007. *Technical Assistance to the Republic of Tajikistan for Preparing the Dushanbe–Kyrgyz Border Road Rehabilitation Project (Phase III)*. Manila

<sup>2</sup> ADB. 2003. *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 Dushanbe-Kyrgyz Border Road Rehabilitation Project (Phase I)*. Manila.

<sup>3</sup> ADB. Nov. 2005. *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 Dushanbe-Kyrgyz Border Road Rehabilitation Project (Phase II)*. Manila.

<sup>4</sup> ADB. 2004. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Kyrgyz Republic for the Southern Transport Corridor Road Rehabilitation Project*. Manila.

Dushanbe–Kyrgyz Border road, in particular, the Phase III Section constitutes a bottleneck to regional trade because of the poor condition of this section. By removing this obstruction to trade, the Project will help realize the full benefits of the completed, ongoing, and planned projects forming the Regional network.

3. The road subsector is the most important component of transport in Tajikistan, and dominates the domestic transport of goods and passengers within Tajikistan. The combined length of the road network is about 31,800 kilometers (km), consisting of 4,800 km of national roads and 27,000 km of local roads. The Ministry of Transport (MOTC) has jurisdiction over 13,800 km, including all national roads and 42% of the local roads (9,000 km). The remaining 18,000 km of local roads not under MOTC are mostly rural and farm roads, and industrial access roads. The major part of the network was constructed before 1970, and was not built to support the large volume of heavy and overloaded trucks that now use the roads. Inadequate maintenance funding, poor attention to drainage and damage from civil conflict and natural disasters has left the network in a state of severe deterioration. Of the national roads, 28% are asphalt, 46% are other pavement, 18% are gravel, and 8% are earth, however much of the listed asphalt surfaced roads are seriously deteriorated or worn away due to the lack of maintenance, so the percentage of asphalt roads as documented is somewhat overstated. Recent studies have categorized the condition of the Republican roads as 80% in poor or very poor condition, and whilst the scope of the network is considered adequate to accommodate existing traffic levels, the condition of the network does not provide much rural accessibility or optimize road agency and road user costs, thus restricting the contribution of road transport to economic growth, poverty reduction, and social development. There is an urgent need to upgrade the existing roads to meet the demands of sustained economic growth, development, and reduced poverty in the medium term. The poor condition of many roads have lowered travel speeds, increased fuel consumption, and raised vehicle operating costs. Rough surfaces have also reduced the economic lives of the vehicles and suppressed road transport demands in certain areas. An updated Road Subsector Analysis is provided in Appendix 2.

4. During Soviet times the constituent republics traded mainly among themselves and the transport network throughout Central Asia was orientated towards Moscow. Following the collapse of the USSR it became evident that old industries and old trading patterns would have to be replaced. Transport volumes declined very sharply. The effect was intensified in Tajikistan by the civil war, which ended only in 1996. Recovery is now under way. There are discontinuities<sup>5</sup> in the available official statistics, so it is not possible to be precise. But it appears that total freight tonnage carried by all modes of transport in Tajikistan was at least 80 million tons in 1991 (excluding transit traffic). It bottomed at about 6 million tons at the end of the civil war but by 2005 it had recovered to 38.5 million tons.

5. Rail transport dominates international trade, with 94% of all import+export tonnage in 2005 (96% if transit traffic is included). Including both domestic and international traffic it accounts for only about 15% of total freight tonnage. This is not surprising, since the rail network in Tajikistan is fragmented. It was built to link three regions (Dushanbe, Khujand in the north and Khatlon in the south) to other parts of the USSR, not with one another. Because of the difficult terrain this is unlikely to change.

6. Of the 38.5 Million tons of freight carried in 2005, 36.9 million tons were carried by road. This was less than half the volume in 1991 but four times the volume in 1998. Meaningful growth rates are impossible to estimate because the year-to-year statistics are highly erratic. International trade is still weighted in favor of other CIS countries: 20% of exports and 65% of imports by value in 2005. This is partly attributable to the orientation of

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<sup>5</sup> Transit traffic was included from 1994; natural persons' operations were included from 1998.



the transport system, but also to inertia and the continuing cultural and linguistic affinity among the former Soviet republics. For example the Russian Federation and other CIS countries buy virtually all of Tajikistan's edible agricultural exports.

7. The PRC has emerged as a major trading partner, but so far only as an exporter to Tajikistan. In 2005 the PRC accounted for 11% of Tajikistan's merchandise imports, compared with only 1% four years earlier. The increase owes something to the improvement of the road through the Pamir region giving access to the PRC via the Kulma Pass, which is open for 5.5 months of the year, and an ongoing programme of ADB-funded road improvement in Kyrgyzstan. But it is also part of a global trend towards increased trade with the PRC. The PRC's share of imports into the countries of Central Asia<sup>6</sup> increased from 2.7% in 2001 to 18.0% in 2005. Incomplete data suggest that the trend has continued in 2006. Most of the trade with the PRC takes place by rail, which is inexpensive but circuitous and slow. international road transport is constrained by poor quality roads and winding mountain passes, which limit both the size of vehicle that can safely negotiate them and the length of time that the roads are passable at all during the winter months. Of 25 designated border crossing points, only 11 are operational (including Karamik). Of these operational crossing points, two account for two-thirds of the country's trade by road, and three account for virtually all the transit traffic. All are on the Uzbek border.

## **B. Analysis of Key Problems and Opportunities**

### **1. Obstacles to Development**

8. **Regional Cooperation.** Increasing trade is a key to accelerating economic growth and assisting with a reduction in poverty in Central Asia, particularly in Tajikistan and the Kyrgyz Republic with their small populations and limited natural resources (except for hydropower). Even in the Central Asian Republics (CARs) with more natural resources—such as Kazakhstan and the Xinjiang Uygur Autonomous Region of the PRC (Xinjiang)—the contribution of trade to increased economic growth is constrained by their landlocked status and distances to ocean ports. Improvement of the regional road network is therefore essential to increase economic growth. Four core problems constrain the development of regional road transport in the CARs: (i) lack of a unified regulatory framework and procedures for customs control that demonstrates transparency and assists the transport operators with understanding process, (ii) delays and excessive charges at borders, (iii) inadequate border crossing/customs processing facilities, and (iv) physical deterioration of the network. ADB has been and continues to be involved in solving all these problems. Development of a unified regulatory framework is one of the issues being dealt with as part of the Transport Sector Coordinating Committee's work under the Central Asia Regional Economic Cooperation (CAREC) program. Regional cooperation in improving customs processing and the border post facilities is being promoted under regional projects such as the ADB-financed Regional Customs Modernization and Infrastructure Development Project.<sup>6</sup>The deterioration of the road network is being addressed through a two-pronged approach. First, ADB is continuing its assistance program to improve roads comprising part of the regional network. Second, the implementation of these projects includes policy dialogue to increase financing for road maintenance and to carry out institutional reforms to improve the efficiency of the maintenance system. The Project will continue to improve the road network through both of these avenues.

9. One long-standing problem is being solved, but it will still take some years. This is the closure throughout the winter months of the only in-country road link between Khujand

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<sup>6</sup> Included in this analysis: Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan.

and the main corpus of Tajikistan. Longer routes through Uzbekistan have provided an alternative but border delays, high transit fees and alleged harassment have deterred haulers. There are routes through Kyrgyzstan, but only via Karamik and a notoriously difficult and dangerous section to the border. With Iranian and Chinese assistance the Anzob and Shahristan Tunnels are being built at a combined cost of over US\$90 million. When completed these should provide a shorter, all-weather route to Khujand. It is likely that construction will take longer than the three years remaining before the expected completion of the proposed project, in which case the project road would undoubtedly attract a proportion of that traffic. But this has not been included in the appraisal. The road sections to be rehabilitated under the project form a bottleneck that obstructs trade between much of Tajikistan, Afghanistan, and adjacent countries to the south. Rehabilitation of the final stage of the Dushanbe – Kyrgyz Border Road will create the opportunity for trade amongst CAR, particularly between Tajikistan and Kyrgyz Republic, and between CAR and CIS countries. It opens opportunity for increased trade between China, Kyrgyz Republic, Tajikistan and Afghanistan with a positive impact on the economic impact of all countries. Based on the Transport Corridor Europe Central Asia (TRACECA) being developed by the various funding agencies, it can be clearly seen that the Dushanbe – Kyrgyz Road forms part of this corridor, and whilst clearly it is not as strategic as some of the other international links in the region to Eastern Europe, it will be a key corridor for trade from China as indicated above. The Dushanbe – Kyrgyz Border Road, will connect through to Osh in the Kyrgyz Republic (a traditional crossroads for trade), Xinjiang (with its population of 19 million and dynamic economy), and neighboring countries to the north. The significance of this bottleneck is evident in the PRC's share of total trade of countries in the region. Kazakhstan and the Kyrgyz Republic have direct road access to the PRC that does not pass through this bottleneck. The official PRC's share of total trade of these countries is 14.2% and 23.0%, respectively. However, the road connecting the PRC with Tajikistan and Afghanistan does pass through the bottleneck. The PRC's share of total trade with Tajikistan and Afghanistan is significantly lower and estimated to be as low as 0.1%, for Afghanistan. (actual figures are expected to be higher as the onward flow of PRC originated goods from Kyrgyz Republic are not counted, nor are the significant proportion of goods carried by road and air by small traders who pay no customs duty or VAT because their consignments are deemed, or at least recorded, as being smaller than the concessional threshold).

10. By improving key sections of the road from Dushanbe to the Tajik–Kyrgyz border, the Project will substantially reduce this obstruction to trade and will facilitate direct trade and cooperation between countries north of the project road, including the PRC and the Kyrgyz Republic, and those to the south, including Tajikistan and Afghanistan. The increased trade and regional cooperation arising from the Project will yield substantial benefits for the region. In addition to the direct benefits from increased trade, the Project will improve efficiency in the region's economies. The reduced transport costs<sup>7 8</sup> and removal of the bottleneck to regional trade will result in increased demand for exports and imports, thus increasing the profitability of export-oriented industries and decreasing the profitability of import-substituting industries. Economic resources will therefore shift from the import-substituting industries to export-oriented industries, and increase economic efficiency. This shift will also lead to increased employment, since export industries include agriculture and light industry such as textiles. In the medium-term, this shift of resources to sectors in which countries have comparative advantages will increase total output and living standards through more efficient resource allocation and increased productivity.

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<sup>7</sup> ADB. 2002. Technical Assistance for Reassessment of the Regional Transport Sector Strategy. Manila.

<sup>8</sup> ADB. 2004. Report and Recommendation of the President to the Board of Directors on Proposed Loans and Technical Assistance Grants to the Kyrgyz Republic and the Republic of Tajikistan for the Regional Customs Modernization and Infrastructure Development Project. Manila.

11. **Economic Growth and Poverty Reduction.** Tajikistan has significantly reduced poverty in recent years. Strong and steady economic growth<sup>9</sup>, policy reforms, and a favorable economic environment led to sustained poverty reduction from 82% in 1999 to about 50% in 2005<sup>10</sup>. However, it is still the poorest among the CARs with highest poverty incidence. Although poverty in the project area has also been reduced, it is still higher than for the country. Poverty incidence in the project area is estimated at 47.6%<sup>11</sup> according to a sample household survey. Unofficial estimate of poverty from the Rayon and Jamoat Officials is that it is in the range of 40-90% with the higher percentage applying to the higher mountainous communities away from the project road. The rapid reduction of poverty in the project area in the past years is due to: (i) increased remittances from residents working in the Russian Federation and even in Dushanbe, and (ii) increased production and marketing of potatoes and fruits. Farmers are applying extensive management but the level of production is very low. Overall yields of potatoes and fruits have only reached about 60% of their potentials, defined as 25-40% of the highest yields in the world, according to agricultural specialists. The low level of production is due to: (i) destruction from the civil conflict in 1990s, (ii) disappearance of previous markets in FSU, (iii) the absence of an effective marketing system to replace what was used in the FSU, (vi) the lack of investment capital, and (iv) the deterioration in road conditions, which is resulting in high costs for transport and damage to produce.

12. Future economic growth and poverty reduction in the project area will have to be dependent on further rehabilitation and intensification of agricultural production, and the development of coalmining<sup>12</sup> and small hydro-power stations. The project will lead to increased production, higher profitability and lower transport costs, and most of them will be passed on to poor. Specifically, numerous poverty reduction-oriented development projects are being implemented by a number of international organizations in the project area, and the project will maximize the benefits of these projects by improving transport conditions.

13. **Road Subsector.** MOTC is responsible for planning and coordinating the maintenance of the road network. Maintenance of the road network throughout Tajikistan virtually ceased following the collapse of the Soviet Union due to inadequate funding, and this is reflected in the deteriorated condition of the road network. The situation in the project area was exacerbated by the civil war, when numerous bridges and road sections were damaged. ADB has been addressing this issue through a strategic commitment to improving regional road network and transport sector policy dialogue, and gaining a Government commitment to increase road maintenance budgets annually by imposing covenants on the existing road rehabilitation loans. As a result, financing for road maintenance has steadily increased since 2003.

14. The Administration for Traffic Safety Supervision (formerly the Transport Safety and Security Unit) of MOTC is responsible for the physical aspects of road safety, including road conditions and signs, and for carrying out road audits and investigation traffic accident incidents in conjunction with the Road Supervision Unit, of the Traffic Police, Ministry of

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<sup>9</sup> Annual growth of about 8% since 1999 and its GDP has reached about 60% of the pre-independence level by 2005..

<sup>10</sup> World Bank (World Development Indicators (2006) estimated that the poverty headcount ratio was 42.5% at PPP \$2 a day in 2005, this might indicate an overall poverty incidence of over 50% at PPP \$2.15.

<sup>11</sup> 600 Somoni per capita per year, roughly equivalent to PPP 2.15\$ a day.

<sup>12</sup> There is a reserve of 600 million tons of high quality coal in Haiti of Rasht Rayon at the beginning of Phase III road. The annual output was only about 16,000 tons in 2005; the mine only operates only 8 months a year. The republican government, with the opening of the project road soon, is seeking investors to scale up it to 250,000 tons.

Internal Affairs. Tajikistan's road safety record in the mid-1990s was poor, with a fatality rate of 407 per 10,000 vehicles.<sup>13</sup> Road safety has improved since then because of MOTC's Accident Prevention Plan, which monitors about 30 indicators annually. Although the number of vehicles has increased substantially, the rates of road accidents and fatalities have remained relatively stable. In 2003 there were a total 1378 registered road accidents ( a decrease of 0.7%, from 2002) with resulting fatalities of 421 (an increase of 1.7% from 2002), and a further 1620 people injured. The improvement is considered due to the Government's Accident Prevention Plan, under which approximately 30 indicators are monitored annually. Unfortunately, however indications are that the accident rate is increasing on those sections of the road which have undergone recent rehabilitation. This can be attributed solely to an increase in travel speed, and compromised road safety standards to gain construction cost savings. In the Project Area (Phase II & III), the number of accidents between Nurabad and Karamik was 13 in 2005, with 14 fatalities (seven reported from one accident), but decreased to ten and seven respectively in 2006.

15. Overloaded vehicles cause premature deterioration of roads. Past axle load surveys indicate that the number of overloaded vehicles using the Dushanbe – Kyrgyz Border Road is not significant (three out of 22 recorded near Nimich in 2005), but these results are the results of two days of random testing, and should not be taken as representative, as firstly, the condition of the road between Karamik and Garm generally limits the use of large overloaded trucks, and secondly the larger (and perhaps overloaded) trucks tend to travel the route in convoy at night time, and hence loads do not get recorded. Also there are inadequate vehicle weighing stations to compile statistics on overloaded vehicles. Tajikistan is a party to the Intergovernmental Agreement on Vehicle Dimension and Weights which has been signed by ten Commonwealth of Independent States (CIS) countries. Two national decrees have been issued to make it effective but are not enforced because of lack of vehicle weighing equipment. The agreement<sup>14</sup>. and the decrees require that overloaded vehicles obtain a special permit to enter Tajikistan and the other countries, which are allowed to charge for it. In practice, while Tajikistan issues permits jointly through MOTC, the Ministry of State Revenue, and the Ministry of Internal Affairs, there is no schedule of payments and, therefore, no payments are being collected.

## **2. Government and ADB Strategies**

16. The Project is fully consistent with ADB's long-term strategic objectives for regional cooperation in Central Asia, medium-term strategic plan, and regional transport sector strategy. The Project forms part of the core program of the Regional Cooperation Strategy and Program for the CAREC countries for 2005–2006. The Project directly supports two of the four long-term strategic objectives that are identified in the Regional Cooperation Strategy and Program: (i) increasing trade and integration with large markets, including securing the CARs' access to markets in South Asia, the PRC, Iran, Turkey, and the Russian Federation; and (ii) improving economic cooperation to reduce transport costs and to facilitate trade. Within the context of these long-term objectives, ADB's medium-term strategic plan for regional cooperation comprises two components. The first, the core program, continues ADB's focus on three sectors, including transport and trade. The strategic plan recognizes that adequate capacity in these sectors is essential for achieving sustainable economic growth, private sector growth, and foreign direct investment, which will create jobs and reduce poverty, but only with greater infrastructure capacity. The plan also recognizes that much of the integrated capacity developed under the FSU has fallen into

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<sup>13</sup> ADB. 1995. Technical Assistance for Regional Initiatives in Road Safety. Manila.

<sup>14</sup> Decree 93 of 11 March 2000 on adoption of the agreement on vehicle dimensions and weights for international road transportation among CIS countries; and Decree 82 of 4 March 2005 on adoption of the agreement to introduce international certificate for weighing cargo vehicles in the territories of CIS countries



disrepair and that rehabilitation is best undertaken regionally. ADB's regional transport sector strategy for the CARs is to (i) provide physical links to all parts of the region, (ii) provide access to external markets, (iii) integrate and upgrade transport infrastructure, and (iv) enhance competitiveness. The strategy focuses on developing regional east-west and north-south transport corridors by using existing infrastructure to link state capitals and local production centers to regional and international markets.

17. ADB's country strategy for Tajikistan focuses on promoting growth through rural development and regional cooperation. Improving transport infrastructure is cited as an aspect of both rural development and regional cooperation. The Project is clearly consistent with ADB's country strategy in its objective to increase regional trade by improving the regional road network. The Tajikistan Country Strategy and Program Update for 2006–2008 have tentatively allocated a loan of \$25 Million for the third phase of the rehabilitation of the road, to be supplemented by an additional \$35 million with OPEC, JBIC and others being pursued for co-financing. This ADB component is firm for loan negotiations in the second half of 2007.

18. The Government's Transport Sector Policy Statement outlines the policy directive requiring development of the transport sector to be based on market-oriented reforms and restructuring to improve efficiency. The Government's strategy for the road subsector is to rehabilitate and maintain road infrastructure and to develop an efficient road transport industry through more private sector provision of transport services, greater reliance on cost recovery to finance road maintenance, and rehabilitation of critical parts of the road network and transport services that remain under state control. The Government has committed to increase expenditures on road maintenance, and has been doing so in line with ADB's policy dialogue, and the covenants imposed. It also aims to change the regulatory framework to encourage greater private sector involvement in road transport. The progress in the facilitation of such change remains slow, and a revisit to the Transport Sector Policy Plan would perhaps be timely. The Government's strategy includes developing international road corridors to facilitate international trade. The Dushanbe-Kyrgyz Border Road remains a key element of such development.

### **3. Lessons Learned**

19. The project design incorporates lessons learned from ADB's loan and TA operations in general, ADB's road subsector operations in Tajikistan, and other projects and TAs in the CARs. One lesson learned from ADB's impact evaluation study on rural roads and poverty reduction<sup>15</sup> is that the long-term benefits of road projects can be threatened by neglecting road maintenance. The study recommends devolving responsibility for road maintenance to local communities, particularly for rural roads to ensure long-term sustainability. An ADB TA performance audit report<sup>16</sup> found that expenditures on road maintenance should be increased in Kazakhstan, the Kyrgyz Republic, and Mongolia. The Project has loan covenants requiring specified increases in financing for national road maintenance and specified levels of financing for project roads, and provides for the purchase of maintenance equipment for the project roads. An ADB special evaluation study<sup>17</sup> notes that project implementation units (PIU) are a legitimate means of implementing large investment projects, but cautions against the proliferation of separate PIUs for individual projects. The Project has

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<sup>15</sup> ADB. 2002. Impact of Rural Roads on Poverty Reduction: A Case Study-Based Analysis. Manila.

<sup>16</sup> ADB. 2002. Technical Assistance Performance Audit Report on Institutional Strengthening and Policy Support to the Road Sector in Kazakhstan, Kyrgyz Republic, and Mongolia. Manila. 12 ADB. 2005. Special Evaluation Study on the Role of Project Implementation Units. Manila

<sup>17</sup> ADB. 2005. Special Evaluation Study on the Role of Project Implementation Units. Manila

taken this into account by agreeing with the Government to use the PIU of ongoing ADB-financed road projects. This PIU is physically located in MOTC's headquarters, and existing staff have gained substantial experience with ADB Procurement Guidelines, FIDIC Conditions of Contract, Quality Management and Environmental Management which we greatly assist with effective project implementation. Many PIU staff members previously worked for MOTC, and officials and staff members of MOTC and the PIU interact daily.

20. ADB has just completed final certificates for the First Road Rehabilitation Project (February 2007), and is currently implementing Phase I and Phase II of the Dushanbe – Kyrgyz Border Road Rehabilitation in Tajikistan. Implementation of the First Road Rehabilitation Project<sup>18</sup> had been delayed considerably. The implementation delays were mainly because of (i) lack of advance procurement action, (ii) a delay in declaring the loan effective, and (iii) the detailed design being prepared by the supervision consultants under the project. Since there was no advance action under this project, the supervision consultants, who were responsible for preparing the detailed design, could not be recruited until the loan had been declared effective, further delaying the preparation of the detailed design and the procurement of civil works. As discussed above ADB is implementing the Dushanbe–Kyrgyz Border Road Rehabilitation Project (Phase I). Although mobilization of the contractor was delayed, it was due to the contractor's internal problems, and not implementation planning issues. This project is expected to meet the original completion date. The Tender Documents and Design for Dushanbe – Kyrgyz Border Road Phase II have been prepared by the CSC under Phase I Loan, and under the Feasibility TA for Phase III. This will remove a major component of past delays and tenders for Phase III may be called as soon as Loan Negotiations are completed.

21. Funding road maintenance remains a challenge given Tajikistan's fiscal constraints. The status of road maintenance funding has been addressed under the Road Sector Analysis (Refer Appendix 2). The agreed Government and ADB covenants and loan assurances that are in place will adequately finance maintenance of the project roads and continue to provide for annual increases in the financing of road maintenance nationally, without exceeding Tajikistan's budget. The PIU handling the ongoing projects is functioning well, and will implement the proposed Project with the assistance of additional staff.

#### **4. External Assistance**

22. ADB has provided more assistance to the road subsector than any other international organization. The Islamic Development Bank, Government of Iran, Kuwait Fund, OPEC, EBRD, World Bank and others have also provided large amounts of assistance to the transport sector. (Refer Appendix 3).

### **C. Policy Dialogue**

23. ADB has been intensively involved in policy dialogue on the transport sector, particularly the road subsector. The dialogue covered financing of road maintenance, commercialization of transport services, improvement of transport management efficiency by improving key institutions, separation of regulatory and operational functions of the sector, and other areas related to the transition to a market economy. As a result of policy dialogue and ADB technical assistance, the TSPS were formulated and the administration of the transport sector was reorganized and MOTC created (now MOTC). MOTC is responsible for planning and coordinating all modes of transport. Tariffs for road freight have been completely deregulated; road haulage organizations enter into agreements with customers at

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<sup>18</sup>. 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.

negotiated rates. Tariffs for passenger transport are still subject to some official regulation, e.g., minimum fares, but in practice fares vary according to competition. The Project continues the policy dialogue on road subsector sustainability, institutional development, and road safety, within the changed structure of MOTC which once again assumes responsibility for Civil Aviation and now also Communications.

## 1. Road Subsector Sustainability

24. **Road Maintenance Financing.** Increasing the financing of road maintenance is key to improving the sustainability of the road subsector. As road rehabilitation progresses, the cost of maintenance of the rehabilitated roads will decrease, but this will not remain the case for long if adequate funds are not committed to adequately take care of routine maintenance. All ongoing road subsector projects include loan covenants on road maintenance financing. They are based on a two-part approach to increase allocations for maintenance, and to ensure that maintenance has high priority among total sector expenditures. First, the covenants require annual real increases in budget allocations for road maintenance and rehabilitation. Second, the covenants require that allocations for road maintenance and rehabilitation comprise specified percentages of total road subsector expenditures. Allocations for road maintenance and rehabilitation are required to be increased by 15% per year during 2005–2007 and to comprise at least 80% of total road subsector spending, excluding the construction of the Anzob Tunnel on the Dushanbe–Khujand–Tashkent road, as it is considered a national priority project.

25. The Government has generally exceeded the targets for annual increases in financing for road maintenance and rehabilitation. Approved budget allocations for road maintenance and rehabilitation increased substantially in 2004 and 2005. The allocation for 2005 is 20% higher than in 2004, however figures provided for budgeted and actual expenditure on road maintenance and rehabilitation in 2006, indicates that there was actually a slight decline of expenditure for 2006. Compliance with the covenant requiring that road maintenance and rehabilitation comprise at least 80% of total road subsector spending has been more challenging, although performance is improving. The proportion was 59% in 2004 for actual expenditures, and has improved to 79% for 2005. The covenant excludes from the proportion expenditures for the construction of the Anzob Tunnel. If expenditures for the construction of avalanche galleries on the approaches leading up to the tunnel are excluded, the proportions for 2004 and 2005 increase to 76% and 86% respectively, bringing the Government into compliance for 2005 on this component. Under the proposed Project, the Government will continue to address the financing of road maintenance. It will ensure that actual expenditures for maintenance (including emergency maintenance but not rehabilitation and new construction) of MOTC roads will be increased at least at the same rate as the increases in the overall national budget during 2008–2009. The Government will allocate \$90,000 per year (adjusted for inflation) for routine maintenance<sup>19</sup> for the sections of the Dushanbe–Kyrgyz border road rehabilitated under the Project. If into the future any rural roads are rehabilitated under the Project, then also MOTC will need to ensure that such roads are also adequately maintained.

26. **Road Maintenance Tenders.** The Project will require the continued commitment by MOTC to improve sustainability of the road subsector through a continued expansion of tendering for road maintenance with private sector participation. Under Phase II Loan Agreement, the Government have agreed that two pilot cases of maintenance of the completed sections of the Dushanbe–Kulyab Border Road (Phase I) improved under the

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<sup>19</sup> Routine maintenance includes cleaning culverts, sealing cracks, filling potholes, and removing debris and snow.

Road Rehabilitation Project will be carried out. The Government will be required to ensure that this program is expanded and additional maintenance contracts awarded for maintenance of Phase II sections as the rehabilitation becomes completed.

27. **Vehicle Weighing.** While Tajikistan has legislation and national standards for dealing with overloaded vehicles, these are not enforced because of lack of both permanent and portable vehicle weighing equipment. The international traffic on the project road will increase in both quantity and size, and could include a substantial number of overloaded trucks. Such traffic may damage the Dushanbe – Kyrgyz Border Road as well as other recently rehabilitated roads. In order to deter the incidence of overloading, a network of vehicle weighing systems is required. Under ADB Loan 2114 (TAJ)<sup>20</sup>, it is proposed that the facilities upgrading will include the installation of an appropriate weigh station, that will record all overloaded trucks and require them to adjust the load to the legal limits before proceeding. MOTC has also committed to procure and install vehicle weighing systems on the project road and other roads rehabilitated under earlier ADB financed road projects (Phase II Loan Agreement). Portable Axle weighing equipment has already been purchased under ADB TA 4294-TAJ: Strengthening Implementation of Road Maintenance, and can be used to carry out random policing of loads along the project road.

## 2. MOTC Institutional Development

28. ADB has been instrumental in the institutional development of the transport sector, including the establishment of MOTC. MOTC continues to reform its institutional structure to improve its ability to manage the transport sector. In accordance with the recommendations of an ADB TA 3602 –TAJ: Institutional and Policy Support to the Road Sector, attached to the loan for the Road Rehabilitation Project, MOTC established the Road Planning and Assessment Unit attached under the Economic Policy Division. The unit is responsible for assessing the needs for maintenance, rehabilitation, and construction within the road network, and for planning road work within MOTC resources. Under the restructured (expanded) Ministry however, the Road Planning and Assessment Unit, has been assigned under the Road Construction Central Administration Department, where it can have a more direct role of managing the planning and prioritization of budgets for road maintenance and rehabilitation. The development of the unit however, is still in its infancy, and further institutional development is required. ADB TA 4294 (TAJ):Strengthening of the Implementation of Road Maintenance can deliver valuable training in some of the skills required by staff attached to the Planning unit, and MOTC must ensure that the unit are involved in this TA and subsequently made fully operational. MOTC will address institutional development by reaching an agreement with the Tajikistan Transport Institute on implementing training programs for MOTC staff, and further institutional development in relation to highway information systems (HIS) and economic prioritization of network expenditure should form part of the Project implementation.

## 3. Road Safety

29. The Government has made substantial efforts in recent years to improve road safety and has had some success. However, there is still much room for improvement. MOTC recognizes the growing seriousness of the road safety problem and the importance of taking proactive steps to reduce the number of deaths and injuries. MOTC has agreed to improve coordination among key agencies with road safety responsibilities, and to strengthen its TSSU to monitor and improve road safety. However whilst under the restructured MOTC an expanded Administration for Traffic Safety Supervision Unit (formerly TSSU) covering all elements of transport has been approved, the numbers attached to this unit for road safety

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<sup>20</sup> ADB TA 2114 (TAJ): (Manila , 2004)



has not been strengthened. The TA looked at the existing road safety audit (RSA) capability and the design methodology in relation to road safety, and details are provided in Appendix 2 Road Subsector Analysis. It is important that the ATSS staffing and technical skills are expanded so that effective Road Safety Audits are fully integrated into the planning and design stages of all major road schemes. Safety audits are required to be undertaken for design approval and during construction and operation, but all too often it is the road safety elements of the design and construction that are sacrificed when budget shortfalls exist. This has happened on Dushanbe – Kyrgyz Border Road Phase I and II, but MOTC have committed to an expanded loan modality so that scope for the Dushanbe - Kyrgyz Border Road Phase III, will not be similarly affected. This is critical because the difficult alignment of this sector of the road corridor demands that appropriate road safety measures are taken. The TA also investigated the current process of recording road traffic accident statistics and the ability to analyze such statistics. The process of maintaining accident statistics is shared between the MOTC and the Road Supervision Unit, of the Ministry of Internal Affairs, Traffic Police. Recommendations on training for compiling and analyzing traffic accident data, and the adoption of a suitable accident statistics database format, which can be interrogated to provide useful information which can be used for an accident reduction program, have been submitted and will be part of further technical assistance to be delivery through the Project. MOTC must undertake to expand the number of road safety staff attached to the ATSS, and develop a process that improves the coordination and collaboration among key agencies with road safety responsibilities.

## II. THE PROPOSED PROJECT

### A. Impact and Outcome

30. The project impact will be increased regional trade and increased economic growth in the immediate project area. The project outcome will be improved and sustainable regional and national road networks. The region served by the road network encompassing the project road stretches from Kazakhstan to Afghanistan, with links to the Russian Federation to the north, the PRC to the east, and Pakistan and Iran to the south. The immediate project area encompassing the road sections to be rehabilitated starts in the Rasht Valley and continues into the upper reaches of the Surkhob River valley, northeast of Dushanbe. The site was the center of heavy fighting during the 1990s civil war. Before independence, the project area was a major producer of fruit, which was marketed throughout the FSU.

### B. Outputs

31. The project outputs include (i) improvement of 121 km of the Dushanbe–Kyrgyz Border Road between Nimich and the Tajik Border Security Post, passing through Tajikabad and Jirgatal Rayons; (ii) improved sustainability of the road network through increased financing of road maintenance, and expansion of the pilot program of tendering road maintenance; (iii) strengthened institutional capacity of MOTC by ensuring that its Road Planning and Assessment Unit fully participate in existing ADB TA 4294 Strengthening of the Implementation of Road Maintenance, and (iv) improved road safety through strengthening of the Administration for Traffic Safety Supervision Unit (ATSS). The primary inputs include (i) implementation of civil works; (ii) consulting services for project supervision, and strengthening MOTC’s ATSS. In addition the technical support for strengthening MOTC’s accounting and auditing functions; and the program for mitigation of HIV/AIDS and STI’s provided through the Dushanbe – Kyrgyz Road Rehabilitation Phase II Loan will continue to support the project implementation.

32. The section of the Dushanbe–Kyrgyz border road to be improved under Phase III continues from Nimich to the Tajik Border Security Control Station. It links the two sections presented in Phase II Loan, and will represent the completion of the Dushanbe – Kyrgyz Border Highway up to the Border with Kyrgyz Republic. This section covers approximately 120 km of existing two-lane roads, although in many sections this existing alignment is reduced to one lane due to rock falls, mudslides, and erosion. In some locations, the alignment has been totally washed away, and a new formation will have to be established. The road passes along the bank of the Surkhob River, for the first 85 km and then the Kyzilsu River for the remaining section. There are several zones which have some severe geological conditions. Originally paved with Asphaltic Concrete surfacing for its entire length, the total road is in varying stages of disrepair. In some areas, the road is barely a track and represents a major safety hazard for the public using the road, particularly for international and local truck transport. The road rehabilitation works will be undertaken in three contract Packages. The first Contract package should be the road section running from Jirgatal Intersection to The Tajik Border Security Control station. The second contract package should be the construction of the Pushidoshuh Bridge and the other bridges to be rehabilitated on the Tajikabad section of the Project. The third contract package will be the road section running from Pushidoshuh Bridge to Jirgatal intersection. The civil works on the project will consist of improving road alignment where feasible to address road safety issues, major earth and rock excavation and measures to prevent major rock falls and landslides, embankment construction, repair and rehabilitation drainage structures, pavement repairs and in most sections complete pavement construction and surfacing, and the installation of safety facilities such as adequate road signs, safety barriers and permanent line marking. The Project will also include the construction of three new bridges including the Pushidoshuh Bridge (200m) across the Surkhob, the full replacement of five other seriously deteriorated

bridges in the vicinity of Tajikabad which do not conform with current design standards, and major rehabilitation works to four other bridges, between Jirgatal and Karamik. All the civil works have been designed to comply with the SNIP 2.05.02-85 Highway Design Standards. The Project was to also improve approximately 100 km of rural roads selected based on a combination of socioeconomic criteria to provide maximum poverty alleviation benefits, and engineering needs. This program has however been deferred due to the indicated increased cost of upgrading the main highway.

33. The Road maintenance equipment support, and the issue of the financial resources for road maintenance, the procurement and establishment of static vehicle weighing systems, and technical assistance to strengthen financial management of MOTC, which form part of the agreement for Phase II loan facility will also have flow on implications and benefits of the Government of Tajikistan's commitments to this Phase III program.

34. Tajikistan is at an early stage of an HIV/AIDS epidemic. The number of officially registered HIV cases remains low, with 385 cases as of May 2005, but the data may not be accurate. Diagnostic capacity is low, and some estimates consider the real number of HIV infections to be 10–20 times higher. The rapid rise in cross-border seasonal migration (involving ten percent of the population) to the Russian Federation, the high percentage of households headed by females (including war widows), conservative religious beliefs and associated gender practices, limited knowledge of contraception and use of condoms, and increasing drug trafficking and consumption patterns, all result in women's vulnerability to HIV/AIDS infection. The increased connectivity and mobility during construction and after project completion may increase local communities' exposure to HIV/AIDS and other STI. The Phase II Project includes an HIV/AIDS and migration component, to be implemented by the Ministry of Health's National HIV/AIDS Center, to develop an integrated, community-based, gender-responsive approach to HIV/AIDS and STI prevention in the contractor's campsites and in the corridor of influence<sup>21</sup>. The ADF Grant attached under Phase II addressing HIV/AIDS and Migration will also have significant relevance to this Project, and once the program is underway, an interim evaluation should be made and if appropriate an extension of the grant could be considered to ensure that the communities within the area of influence of Dushanbe- Kyrgyz Border Phase III also have the opportunity to gain the benefits to be derived from this program.

## **C. Special Features**

### **1. Improving Road Maintenance**

35. With the assistance of ADB-financed projects and the associated policy dialogue, the Government has made substantial progress in improving road maintenance, particularly financing. As required by the loan covenants, financing has been increasing substantially up until 2006. Under ADB TA 3602 (TAJ) a road maintenance manual for national roads was prepared, recommendations for strengthening MOTC's capacity to plan road maintenance were developed, and training in road subsector planning was provided. This manual and the planning for road maintenance have been further developed under ADB TA 4294 (TAJ): Strengthening Implementation of Road Maintenance, particularly to address secondary roads. Also the procurement of road maintenance equipment under ongoing ADB-financed projects and the recently approved ERBD program is continually assisting with the improvement of road maintenance by replacing old equipment that is beyond its economic operating life. However, given the size of the road network, the difficult mountainous terrain, and continued budget constraints relative to the demand, further work is needed to improve

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<sup>21</sup> ADB RRP: TAJ 38236 Dushanbe – Kryrgyz Border Road Rehabilitation Project (Phase II) Manila Nov 2005

road maintenance, and improvement in the structure and technical capacity of regional Administration of State Road Construction and Maintenance Units.

36. ADB continues to address this issue through loan covenants and components under the Project, which will ensure that the trend of increased financing continues, and that necessary technical assistance focusing directly on road maintenance on a regional level is provided. The technical assistance capacity building will ensure that the funds are used efficiently. Implementation of the TA for Strengthening Implementation of Road Maintenance, attached to the loan for the first phase is underway. This TA is helping to develop for the Government, a new strategy to maintain the road network along with short- and medium-term programs to implement the strategy. The new strategy and programs will focus on optimizing the use of the funds available for maintenance, for example, by re-categorizing the network. The TA will provide training in road maintenance management and practices. ADB has also provided assistance to develop new means of maintaining the rural roads, which will reduce dependency on the national budget. The Tajikistan Community-Based Rural Roads Maintenance Project, financed by the Japan Fund for Poverty Reduction (JFPR)<sup>22</sup> has been ongoing for twelve months and is developing and implementing community-based maintenance practices for local roads to ensure that routine maintenance is done with the necessary frequency, and to enable local communities to carry out the maintenance without relying on the national budget (para. 34).

## **2. Rural Roads**

37. The Project has evaluated 100 km of rural roads in the project area for improvement. These rural roads were selected in a consultative process that has included MOTC, the local government officials within the Project area, and the Project Preparatory Technical Assistance (PPTA) consultants. The process began with lists of potential roads to be improved arising from discussions with MOTC's Planning and Assessment Unit, local jamoat (community) leaders and rayon (district) officials. The consultants have undertaken evaluation of the condition of the rural roads and detailed socioeconomic data were collected to assess the impacts from improving candidate roads. The roads were prioritized based on these factors, with particular weighting being given to roads that serviced the poorest areas, and where no bus service operated. The condition of the rural roads varies, and the works needed to be carried out was determined to include grading and profiling of gravel roads; and repairing of potholes, patching, and, where justified, resurfacing and providing bitumen surface dressing, and repair of bridge/drainage structures. Unfortunately, the rural road program attached to the project will not however be implemented in conjunction with the main corridor upgrading due to budget limitations. As indicated earlier, the Tajikistan Community-Based Rural Roads Maintenance Project is financing maintenance of an additional 330 km of low-traffic local roads in the Phase I and Phase II project areas and will develop a system for sustainable maintenance for low-traffic local roads. The project will focus on lower-category roads that feed into the rural roads and main roads being rehabilitated under phases I and II. The possibility of extending this support into Phase III project area should be explored.

## **3. Stakeholder Consultations**

38. During the feasibility study, Initial Environmental Examination (IEE), social and poverty evaluations, and resettlement planning, consultations were carried out with government agencies, NGOs within the project area, villagers and other stakeholders likely to be affected by the Project, and local groups (Appendix 5). Alignment options, environmental concerns, land acquisition and resettlement issues, and economic

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<sup>22</sup> On 18 October 2005, the President recommended this project for Board approval on 4 November 2005

development potential were discussed. Village investigations and surveys were conducted in the project area to assess the potential benefits and adverse impacts of the Project. Over 1,500 people were interviewed in the public opinion surveys, social assessment, environmental assessment, and resettlement planning. For the short resettlement plan (SRP), consultation meetings were held with the affected townships and householders. The Project is well-known and well supported among the community, but frustration with progress on the earlier sections exist. The policies and regulations for compensation for potential land acquisition and demolition of structures to those who may be adversely affected were discussed with local officials. These concerns were considered as best possible within existing economic and physical constraints in (i) determining the alignment and design standards to reduce adverse social, resettlement, and environmental impacts; (ii) designing pedestrian footpaths and road safety features; and (iii) completing a detailed SRP. The consultation process was expanded to finalize the alignment selection and design, and formulate compensation standards and rehabilitation measures for people affected by the demolition of structures in the right-of-way. The community of Tajikabad were the stakeholders most affected and they together with Hukamat officials participated in the discussions and decisions on potential land acquisition and demolition of structures in the right-of-way, in order that the road cross-sections could be achieved without compromising safety standards.

#### **4. Road Safety**

39. Improvement of road safety and support to MOTC's restructured Traffic Safety unit has been a key area considered under the Project (para. 26). Strengthening MOTC's ATSS will form part of the technical assistance recommended with the goal of improving technical capabilities within the MOTC, and achieving substantial improvements in road safety nationwide. The rehabilitation works will substantially improve project road safety by improving the road surface (where extensive deterioration results in unsafe driving conditions), and improving road alignment, thus improving sight distance and overtaking conditions. The installation and maintenance of proper signage and lane markings to highlight changes in alignment and other safety hazards will be emphasized. Such features have been sacrificed to budget limitations in the past, but it is critical given the difficult nature of the terrain, that this does not occur on Phase III construction. It is also recommended that a detailed road safety audit is carried out on the completed phase I and phase II works, and budget be allocated so that the deficiencies in terms of road safety devices (signs, line marking and barriers) can be installed. The concept of establishing rest areas for road users, most likely in conjunction with designated service centers should be examined during the final design preparation. The PPTA Consulting services included an international road safety expert, who has reviewed the currently utilized design standards and the designs of past sections of the road for compliance with international road safety requirements, and recommended appropriate standards to be adopted to improve road safety.

#### **5. Cost Estimates**

40. The project costs including consulting services and contingencies are estimated at \$71.3 million, with a foreign exchange cost of \$ 42,5 million and a local currency cost of \$28.8 million, as shown in Table 1. Detailed cost estimates are in Appendix 6.



**Table 1: Project Costs  
(\$ million)**

Cost Item	Foreign Exchange	Local Currency	Total Cost
<b>A. Base Costs</b>			
1. Road Rehabilitation	33.6	22.4	56.0
2. Cross Border Facilities	0.7	0.4	1.1
3. Consulting Services	1.8	1.0	2.8
4. Project Management	0.4	0.3	0.7
<b>Subtotal (A)</b>	<b>36.5</b>	<b>24.1</b>	<b>60.6</b>
<b>B. Contingencies</b>			
1. Physical Contingencies	3.6	2.4	6.0
2. Price Contingencies	1.3	2.3	3.6
<b>Subtotal (B)</b>	<b>4.9</b>	<b>4.7</b>	<b>9.6</b>
<b>C. Interest During Construction</b>	<b>1.1</b>	<b>0.0</b>	<b>1.1</b>
<b>Total</b>	<b>42.5</b>	<b>28.8</b>	<b>71.3</b>

Notes: (i) Base costs are in 2007 prices, and include value-added tax (\$14.0 million). (ii) Physical contingencies are estimated at 10% of base costs. (iii) Price escalation is based on projected international cost escalation factors of 2% in 2007 and in following years, and a domestic cost escalation factor of 7.0%.

Source: Asian Development Bank estimates.

#### D. Financing Plan

41. The total capital cost of the proposed project is US\$71.3 million. This far exceeds the ADB's limit for a single loan. Therefore co-financing will be required. Discussion have taken place with OPEC, JBIC and PR China for co-financing. Some of this cost could be provided as grants for institutional development activities focusing on external audit, and regional road maintenance. (\$0.5 million is required). The proposed loans and grants (both ADB and other co-financiers) will finance 100% of foreign exchange costs, and \$ 11.4 million equivalent (39.6%) of the local currency costs, or (75.5%) of the total project cost. The proposed loan will have a term of 32 years including a grace period of 8 and 1.5% per annum thereafter. The government will provide counterpart financing of \$17.4 million including cost of applicable taxes. Loan proceeds will not be used to finance taxes. The project loan is included in the Governments Public Investment Program. The financing plan for the Project is shown in Table 2, and the detailed financing plan is included in Supplementary Appendix B

**Table 2: Financing Plan  
(\$ million)**

Source	Foreign Exchange	Local Currency	Total	Percentage of project Cost
ADB	29.7	5.3	35.0	49.1%
Government	0.0	17.4	17.4	24.4%
Others	12.8	6.1	18.9	26.5%
<b>Total</b>	<b>42.5</b>	<b>28.8</b>	<b>71.3</b>	<b>100%</b>

ADB = Asian Development Bank.  
Source: ADB estimates.

## **E. Implementation Arrangements**

### **1. Project Management**

42. MOTC is currently an Executing Agency for ongoing ADB-financed projects and will serve as such for the proposed Project. MOTC has implemented several ADB-financed road rehabilitation projects. The Mission believes that MOTC has adequate capacity, and with the support of the project consultants, will be able to effectively implement the Project. The State Customs Committee (SCC) is the Executing Agency for the ongoing Customs Modernization and Infrastructure Improvement Project (Loan 2114). It is proposed that SCC be the EA for the border facility improvement component with the existing SCC PIU carrying out day-to-day implementation of the respective project component. The existing PIUs will (i) monitor the progress of day-to-day project implementation, (ii) prepare withdrawal applications, (iii) prepare project progress reports, and (iv) maintain project accounts and complete loan financial records for auditing the Project. The head of the existing PIU will be responsible for the day-to-day supervision of implementation activities. The PIU head will be supported by additional 4 professional and support staff with expertise and experience in financial accounting, road engineering, construction supervision, and procurement. Additional staff will be added to the PIU prior to the award of the civil works contracts. The existing PIUs will also be responsible for advance procurement action activities, if such arrangement is approved by ADB management. MOTC and SCC will closely coordinate in order to effectively implement the entire project.

### **2. Implementation Period**

43. The Project will be implemented in 36 months, from January 2008 to December 2010. This includes mobilization but not the defects liability period, during which the contractor is responsible for maintenance. The civil works, for the project road are scheduled to begin in March 2008 and to be completed by November 2010. Prequalification, tendering, and evaluation for the Project Package 1 will be undertaken immediately following loan effectiveness. It is proposed that detailed design and construction for the Pushidoshuh Bridge plus the other bridges within the Tajikabad Rayon will be implemented under a design and construct contract, whilst the final design and tender documentation for the associated road section from Pushidoshuh to Sayron will be undertaken either by through MOTC funding, or by the selected supervision consultants. The proposed implementation schedule is in Appendix 6.

### **3. Procurement**

44. All procurement to be financed under the ADB loan will be carried out in accordance with ADB's Guidelines for Procurement. Contracts valued in excess of \$0.5 million for goods and \$1.0 million for civil works will be procured through international competitive bidding (ICB) among pre-qualified bidders. Civil works for road rehabilitation have been packaged into 2 contracts to be financed following international competitive bidding procedures. Civil Works for border infrastructure improvement will be financed following national competitive bidding procedures (estimated to cost less than \$1.0 million or less). The Government has been advised that before the commencement of any procurement activity under NCB, ADB and the Government will review the national public procurement law to ensure consistency with ADB's Procurement Guidelines. Any necessary modifications and clarifications will be reflected in the procurement plan. The procurement plan needs to be prepared and submitted to ADB covering the first 18 months of the project. Procurement of computer system for border control will be procured through shopping (estimated at \$100,000). Tentative procurement plan is shown in Appendix 7.

45. International consulting services for 67 person-months will be provided by a firm, for construction supervision, project impact monitoring and evaluation, implementation of measures to improve road maintenance, road safety, and project management. The international consultants will provide on-the-job training for the counterpart staff and domestic consultants. In association with the international consultants, 567 person-months of domestic consulting services will be provided for construction supervision, contract management, and other technical advisory assistance, as well as for helping the international consultants monitor the social and poverty impact of the Project through household surveys and data analysis. Consulting services for two international person-months will be required to implement the Road Safety technical assistance component. For all consulting services, consultants will be recruited through an international firm in association with domestic firms (where required) through quality- and cost-based selection, in accordance with ADB's *Guidelines on the Use of Consultants by Asian Development Bank and Its Borrowers* and other arrangements satisfactory for the engagement of domestic consultants. Full technical proposals will be required for the project supervision and monitoring services, and simplified technical proposals for the other consulting services.

#### **4. Disbursement Arrangements**

46. All loan disbursements will be carried out in accordance with ADB's *Loan Disbursement Handbook* (2007), as amended from time to time). The disbursement procedures will include (i) imprest account, (ii) direct payment, (iii) commitment, or (iv) reimbursement. The Government has requested that an imprest account be established, after loan effectiveness, at a commercial bank acceptable to ADB to expedite disbursement of the loan proceeds. The initial advance of the imprest account will be up to \$500,000. It will be established in accordance with ADB's *Loan Disbursement Handbook* (2007), as amended from time to time) and other procedures to be agreed on by the Government and ADB. The Government may withdraw funds from the imprest account to finance PIU expenditures; training, seminars, and studies; procurement of locally available materials in an amount not exceeding \$50,000 equivalent per contract; and civil works contracts awarded under local competitive bidding with a value not exceeding the equivalent of \$50,000. ADB's statement of expenditure procedures will be used to reimburse expenditures and liquidate the imprest account for payment not exceeding \$50,000 equivalent per payment.

#### **5. Accounting, Auditing, and Reporting**

47. The EA's, will prepare and submit to ADB quarterly and annual progress reports on project implementation, the form and content of which will be agreed with ADB. The EA's will maintain separate accounts for all project components financed by ADB and the Government. MOTC will have them audited by an independent auditor that has adequate knowledge of and experience with international accounting practices, and is acceptable to ADB. The audit will also cover the imprest account and statement of expenditure, and the final audit report will include separate audit opinion on these. The audited project accounts and the auditor's reports will be provided to ADB within six months after the end of each financial year. The Government has been informed of ADB's requirement for the timely submission of audited project accounts and financial statements, including the suspension of disbursements in case of noncompliance. To facilitate evaluation of the Project, the Government has agreed to provide a project completion report to ADB within three months of physical completion of the Project.

#### **6. Anticorruption Measures**

48. The Government is making a significant effort to reduce corruption. The principal anticorruption measures are outlined in the New Anticorruption Law, which was approved by the Parliament in June 2005. The law defines the legal and organizational basis to prevent



corruption. In April 2005, the President assigned responsibility to the relevant Government agencies to improve accountability and reporting within their ministries. The President's office has also issued a decree requiring all parts of the Government to convert to international accounting standards<sup>23</sup>. MOTC is undertaking measures to implement the Government's anticorruption program. In January 2005, it established the Economic Policy Division with responsibilities for internal auditing. There is a component with Dushanbe – Kyrgyz Border (Phase II) Project providing training to MOTC's Accounting Department for strengthening MOTC's Economic Policy Division, which has responsibility for internal audits. This will also provide flow on benefits for this Phase III program, and continue to assist MOTC's anticorruption efforts. ADB's anticorruption policy<sup>24</sup> is fully understood, and discussed with, the Government and EA. Consistent with its commitment to good governance, accountability, and transparency, ADB reserves the right to investigate, directly or through its agents, any alleged corruption, fraudulent, collusive, or coercive practices relating to the Project. To support these efforts relevant provisions of ADB's anticorruption policy are included in the Loan Regulations and the bidding documents for the Project. In particular, all contracts financed by ADB in connection with the Project will include provisions specifying the right of ADB to audit and examine the records and accounts of the EA and all contractors, suppliers, consultants, and other service providers as they relate to the Project. The Government is committed to creating and sustaining a corruption-free environment, and has agreed to abide by the relevant provisions of ADB's anticorruption policy in preparing all documents and contracts during the bidding process and project implementation.

## **7. Project Performance Monitoring and Evaluation**

49. The ADB and the EA's agreed on a preliminary set of indicators for monitoring and evaluating project performance in relation to its goals and purposes, agreed between ADB and MOTC for Phase II program will also be adopted for this Loan. Once again the emphasis is on poverty reduction. Representative indicators are included in the design and monitoring framework. At the beginning of project implementation, the EA's will confirm baseline values for social, environmental, and poverty reduction impact indicators. Monitoring indicators will be measured, with the necessary frequency, during project implementation. Comments and findings regarding these project indicators will be incorporated in every other quarterly report to ADB. In addition to indicators for implementation monitoring, indicators for project evaluation will be measured at project completion, one year later, and three years after completion. Where relevant, indicators will be disaggregated by gender. Participatory surveys will take place, and results will be compared with the baseline. A final report will evaluate changes in the preceding three years. The EA's has developed its monitoring capability for the ongoing projects, and has the capacity to monitor the Project as well. An international consultant will be recruited to help establish the monitoring and evaluation system and to monitor and evaluate all relevant socioeconomic and environmental impacts of the Project.

## **8. Project Review**

50. ADB and the Government will carry out a midterm review of project implementation in 2009. The review will focus on project impacts, particularly those relating to institutional, administrative, organizational, technical, environmental, and social aspects and poverty reduction. The Project's economic viability, and other aspects that may have an impact on project performance, will be assessed. The review will examine the implementation progress of policy reforms and compliance with assurances specified in the Loan Agreement.

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<sup>23</sup> The decree did not indicate the specific international accounting standards to be adopted.

<sup>24</sup> ADB. 1998. Anticorruption. Manila.

### III. PROJECT BENEFITS IMPACTS ASSUMPTIONS AND RISKS

#### A. Traffic Forecast

51. Traffic forecasts by vehicle type were prepared for the Project Road sections for 2006 -2029 (Appendix 8). Existing traffic is very low, the count ranging from 386 vehicles per day on the south-western-most link (Nimich-Sayron) to 141 on the north-eastern-most link (Dumbrachi - karamik). The distance-weighted average traffic volume was 247 vehicles per day. The counts were conducted over the period 28 November to 3 December 2006. The MOTC conducts traffic counts throughout the year. The data from 2004 for the links Garm-Sayron, Sayron-Jirgital and Jirgital-Karamik were used to derive an appropriate seasonal adjustment factor: 0.965.

52. According to driver interviews only two percent of trips are made across the border. This may have been depressed by the time of year when the count and interviews were undertaken, when snow was already impeding traffic, but it is not seriously out-of-line with border traffic data from official sources. 12% of trips are to/from Dushanbe. The great majority of the remainder are intra-regional, with Jirgital and Tajikabad the primary origins/destinations. This traffic has been projected forward at vehicle class-specific growth rates based on (a) projected GDP growth of ten percent to 2007 (in line with the ADB forecast) and seven percent per annum thereafter, assumed to apply to all regions of the country; and (b) assumed income elasticities of demand for private passenger transport, public passenger transport and freight transport. The overall average growth rate over the 23-year appraisal period is 8.3%pa. reaching a distance-weighted average of 2,000 vehicles per day in the year 2025. This is a high growth rate, but not excessive in view of the fact that Tajikistan is in the early stages of recovery from the shock of the Soviet Union's demise, or in comparison with other developing countries such as India and Pakistan. Generated traffic has been estimated at 25% of normal traffic, based on Phase II estimates that road user costs will be reduced by 30-40% and the price elasticity of demand for transport is 0.7. It is assumed to grow at the same rate as normal traffic. No diversion of traffic is likely as a result of the proposed Project. The prediction of total traffic, with and without the project through to 2025 is given in Table 3.

**Table 3: Traffic Projections (2006 – 2029)**

Road section	Year	Vehicles per day by vehicle class (motorized)										Total motorized traffic
		Motor-cycle	Car/taxi	Jeep/pickup	Buses		Trucks			Agric tractor		
					Mini-bus	Bus	Mini-truck	2-axle rigid	3-axle rigid		Articulated	
Nimich - Sayron Bridge	2006	5	152	68	29	5	13	21	84	1	8	386
	2010	9	283	125	52	9	25	41	163	43	15	765
	2020	22	629	271	105	18	56	91	365	347	34	1,938
	2029	45	1,231	527	193	33	110	178	711	646	65	3,741
Sayron Bridge - Jirgital turnoff	2006	7	118	64	22	2	12	14	70	0	7	316
	2010	13	222	117	39	4	23	27	136	41	13	635
	2020	31	495	255	80	7	52	61	304	343	29	1,657
	2029	63	968	496	147	13	102	119	593	638	57	3,196
Jirgital turnoff - Dumbrachi	2006	6	48	50	16	0	10	11	58	0	7	206
	2010	11	93	92	29	0	19	21	112	41	13	432
	2020	26	216	199	58	0	43	48	252	343	29	1,214
	2029	54	419	388	107	0	85	93	491	638	57	2,332
Dumbrachi - Karamik	2006	5	32	26	12	1	3	8	47	2	5	141
	2010	9	64	48	21	2	6	16	91	66	9	332
	2020	22	152	103	43	4	13	35	204	373	21	970
	2029	45	294	202	80	7	25	68	398	676	41	1,835

53. There is a small anthracite mine in Khait Jamoat, with road access to the Project Road. Negotiations are under way with Russian and Chinese investors for a big expansion of mining operations. 80% of the projected tonnage would be exported by road through Kyrgyzstan, and the remainder would be transported in the opposite direction for domestic consumption. This traffic has been incorporated into the domestic traffic projection. Work is already under way on a new dam and hydro-electric power station at Ragun. This lies to the west of the Project Road but there is some construction related traffic on the road already and the authority overseeing the project expects this to increase as power lines are built along the road to the Kyrgyz border and increasing quantities of construction materials are imported. Moreover the town of Ragun will grow several-fold when the dam and power station come into operation. Traffic related to this project has also been projected, in consultation with the relevant authorities. Altogether, domestic traffic is projected to grow to 929 by 2015 and 2000 by 2025. International traffic is minimal at present but is expected to grow rapidly as a result of the proposed Project. Four freight traffic projections have been made:

- Trade between Tajikistan and Kyrgyzstan.
- Trade between Tajikistan and the PRC, dominated by trucked imports from the PRC.
- Vehicles imported into Tajikistan from the PRC, brought under their own power.
- Trade between Afghanistan and the PRC transiting through Tajikistan.

54. It is possible that other transit traffic may be diverted from rail, road, sea/rail or sea/road routes; or generated by the proposed project. But the potential benefits are much smaller. The projection has been made on the basis of expected economic growth of Tajikistan and Afghanistan; imports as a percentage of GDP; the PRC's share of imports; average values per tonne of freight; and average truckloads. For the foreseeable future imports from the PRC will heavily outweigh trade in the opposite direction. The number of vehicles moving will be determined by the dominant flow and return loads will be relatively small until Tajik and Afghan business people find export opportunities that take advantage of cheap backload freight rates.

55. The projection is for total international traffic on the Project Road to reach 160 trucks (both directions) and 15 imported vehicles (one-way) by 2015; and 552 trucks and 43 imported vehicles by 2029. There will undoubtedly be generation and diversion of passenger traffic too, but this has been disregarded for appraisal purposes. In the Phase II feasibility study a factor of 1.85 was applied to projected truck traffic to allow for passenger traffic. There is no better source of data available now. If this factor is applied again, projected international traffic in the year 2029 will reach 1,100 vehicles per day.

56. This is almost 50% less than the volume projected in the Phase II feasibility study. The main reasons for the reduction are (a) the substantial growth in trade with the PRC that has already taken place without any significant increase in traffic on the Project Road; (b) the PRC Trade Counselor's caution in projecting his country's penetration of Tajik and Afghan markets; and (c) the fact that the rail operators can be expected to make efforts to improve their competitiveness in terms of both cost, speed and service to small consignors (with the help of inter-modal services and containerizations).

## B. Economic Benefits

57. The lion's share of projected benefits would accrue to international traffic, to be enjoyed by producers, carriers and consumers in the PRC, Kyrgyzstan and Afghanistan as well as in Tajikistan. See Table 4 below.

**Table 4: Computed Benefits by Category**

	Present value US\$M	
Enhanced net agricultural income	16.9	12.9%
Road user cost savings to normal traffic	21.2	16.2%
Road user cost savings to mine & hydro project traffic	1.1	0.8%
Benefits to domestic generated traffic	2.6	2.0%
Benefits to international traffic	88.8	68.0%
	130.6	

58. This does not mean that the lion's share of benefits would necessarily go to non-Tajik interests. Through transit fees and fuel taxes the Government of Tajikistan is expected to capture about 37% of the benefits to international traffic. In addition Tajik consumers, and to a lesser extent producers and carriers, would enjoy benefits too. This is dealt with in the distribution analysis.

## C. Environmental Impact

59. The environmental classification of the project is Category B. An initial environmental examination (IEE) of the Project was carried out under the PPTA in accordance with ADB's

*Environment Policy* (2002) and ADB's *Environmental Assessment Guidelines* (2003). Based on the results of the IEE, the Project will not generate significant environmental impacts provided the mitigation measures outlined in the IEE are implemented appropriately. The summary IEE is in Appendix 10. The IEE has been approved by the State Supervision Service on Nature Protection (SSSNP)

#### **D. Poverty Reduction Impact**

60. As a result of collapse of the Soviet Union and the civil war that follows, poverty levels in Tajikistan became very high. Although the country is now rapidly recovering, the socioeconomic survey undertaken for the project revealed that 47.6% of the population in the project area has a per capita income less than 600 Somoni per year, identified as a suitable poverty benchmark (equivalent to PPP 2.15\$). The social and poverty assessment revealed that, in comparison with the non-poor, the poor have larger household size with more dependents, less land resource with lower level of production, and lack of surplus labour as migrants for remittance income.

61. According to the poverty assessment, the project will have a significant effect on reducing poverty, directly benefiting about 228,000 people from three Rayons along the project road, among them, 100,800 or 47.6% are poor people. Directly, the project will reduce poverty by providing employment opportunities to the poor and by lowering the transport costs for farm produce and for people traveling to agricultural and labour markets, health and education centers, and other social and public services. The project would directly employ the poor for about 10,000 person-months of unskilled labours for construction if 80% of the employment opportunities go to them. In addition, the poor could also be involved in material and services provision for the project and for external construction workers. Unlike in many other countries, a high portion of the poor own vehicles<sup>25</sup> in - albeit olds ones in use since FSU. There are no large commercial transport operators, but there is a highly competitive market of owner-drivers, as the supply of commercial transport services exceeds the demand. Vehicle operational cost savings are therefore likely to be passed on the poor in the form of reduced costs, fares and charges.

62. Indirectly, the project will promote the intensification and higher profitability of agricultural production and then lead to the reduction of poverty substantially. According to social and poverty assessments, there is a potential for a constant annual growth of 5-6% of yields for ten years for the main commercial crops of potatoes, apple and pear, if agricultural extension services are simultaneously improved and provided. The poor could benefit more from agricultural improvements because their growth potential is higher or their current level of production is lower. Poverty reduction in the long run will have to be dependent on improvements in agriculture. The expected annual growth of 5-6%, outnumbered the annual population growth (about two percent), would enable the project area to basically get rid of poverty by 2020 if profits are maintained at current levels.

#### **E. Social and Gender Impact**

63. Considerable social and economic development was achieved for men and women during the FSU. However, many of these developments undermined since independence, and its HDI (Human Development Index) had fallen to 0.540 in 2002 from that of 0.649 when Tajikistan was just at its independence in 1991. The situation in the project area was perhaps amongst the worst because it has the extreme religious renaissance force; yet it was the center and last bastion of the extremists during civil war which led to the area with catastrophic destructions.

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<sup>25</sup> About 10%, overall 15%.



64. The project will have positive and multi-dimensional social impacts through: (i) mainstreaming the once extremists controlled project area by better linking the area with Dushanbe and other parts of Tajikistan, (ii) intensifying agricultural production with value-adding for rural households, (iii) promoting the exploitation of coalmine and hydro-power resources, (iv) creating employment opportunities for local people directly and indirectly, (v) promoting international transit trade, (vi) raising the efficiencies of the numerous development aid agencies working in the area, (vii) small business development along the project road for domestic and international vehicles and passengers, (viii) better access to social and public services facilities; etc.

65. The social relations influencing gender equality have been undermined since independence in Tajikistan. The ADB Tajikistan Country Gender Assessment report indicated that “gender relations have adjusted in ways that increasingly exclude women from household and community decision making. Gender stereotypes reinforce discriminatory practices in the workplace, leaving women without employment in higher-paid and skilled sectors and consequently withdrawing from the formal workforce. Women are not considered suitable as farm managers, despite their extensive contribution to agricultural production, even further limiting their access to privatized agricultural land. Investment in higher education for girls (from all income brackets) is no longer deemed worthwhile, since they will not find employment and should rather aspire to more traditional women’s roles as wives and mothers who remain in the household and have limited interaction in the public sphere”.

66. The project area has no exception in gender disparity. The household survey indicated that while men have a wide range of employment opportunities, women are predominately engaged in cropping and tending animals. Women from the project area, as a result of ever-worsening gender equality and social services, concern about: (i) increasing level of education for girls, (ii) income generating opportunities for both men and women; (iii) capacity building/new skills for women, (iv) better health care services, (v) job opportunities for educated women, (vi) active participation in public activities, and (vii) refresh training of teachers and medical workers.

67. The project will have both indirect and direct benefits for women to partly, if not fully, satisfy the above-mentioned needs/concerns. Indirect benefits are mostly related to enhanced connectivity and include increased access to educational and health facilities, increased travel to towns; increased marketability of women’s products of fruits and small animals; increased access to employment opportunities created or stimulated by the project; increased interaction with development organization that are operating gender development projects in the project area, and increased access to information. In terms of direct benefits, the project will be given some direct employment opportunities to women through the implementation of the Social Development Action Plan (details are given in Volume 2: Social and Poverty Assessment). Specially, the project will enhance the impacts of nine international and local NGOs that are targeting women for gender and development activities. Their gender and development activities include: (i) education/capacity building, (ii) health care, (iii) micro-credit, and (iv) self-employment (small agro-processing bee-keeping etc.).

68. The Summary Poverty Reduction and Social Strategy is attached as Appendix 11.

## **F. Resettlement Effects**

69. All of the civil works will take place on the existing right-of-way. Acquisition of any type of land is not expected. The project will directly and slightly affect 27 households by clearing out existing structure and trees within the ROW in six villages in Tajikabad Rayon. In total, the project will demolish: (i) 839 square meters of residential houses of seven households, (ii) 1004 square meters of simple structured sheds of 24 households, (iii) 62

poplar and willow trees of six households. Four out of the seven households, who will lose residential houses, will be seriously affected. These four seriously affected households include a female headed and vulnerable family. One household has elected to move from the existing family residential plot and take up a new plot within the same village but away from the main road. The per capita income of these households was 764 Somoni in 2006, slightly more than the project area average of 739 Somoni. A Short Resettlement Plan has been formulated in accordance with the laws and regulations of Tajikistan, and ADB's Involuntary Resettlement Policy. The resettlement strategy, compensation standards, entitlements, and rehabilitation measures were based on impact surveys and consultations with local authorities and affected households. Considering that the degree of the impact on communities is minimal, the SRP will be implemented smoothly. Demolishment of structures and properties on the right of way will be completed within 2008 and compensation will be paid prior to commencement of the civil works. Special support will be given to the one vulnerable and seriously affected household to prevent further marginalization or impoverishment. The SRP has been approved by MOTC, and the local authorities have finalized the compensation entitlements with the AP's. A summary of the SRP in Appendix 12.

## **G. Risks**

70. The Project has been designed to reduce potential risks, which include delays in implementation because of inadequate implementation capacity of MOTC, failure to provide counterpart financing on time, the traffic forecast not being realized, inadequate road maintenance, and lack of security in the project area. The Project includes a number of measures to mitigate the risk of delays. The existing PIU will implement the Project but additional staff members will need to be added. It is recommended that an additional Deputy Director, immediately responsible for this project be appointed. Advance action has been approved, and as the PIU is familiar with ADB procedures and will be able to make full use of the advance action provisions. The Government has been made aware of ADB's emphasis on the timely provision of counterpart funds, and has assured the project processing missions that it can provide the necessary funds for all ongoing ADB-financed road projects on time. Project disbursements will be within the Public Investment Program restrictions agreed to by the Government and the International Monetary Fund.

71. There is some risk that the traffic forecast will not materialize, especially the generated traffic arising from increased international trade. This risk has been mitigated by using conservative assumptions to estimate benefits from international generated traffic, as only the benefits from increased trade of three pairs of regional trading partners and additional traffic arising from improved access to ports has been included. There is also a risk that the project roads will not be properly maintained and thus the full benefits of the Project will not be realized. The Government is aware of the importance of road maintenance, particularly in the project area, which is mountainous and prone to landslides and rock falls. The project design includes elements to address the risks of inadequate financing and the implementation of road maintenance for the project roads. The Government has agreed to loan assurances requiring the allocation of specific levels of financing for maintaining the project roads, in addition to the assurances regarding levels of financing for road maintenance nationwide. The additional maintenance costs amount to less than two percent of MOTC's budget for road maintenance and rehabilitation, and will be sustainable. The Project Loan Agreement for Phase II included procurement of road maintenance equipment, to be used solely on the project roads. This will also cover Phase III operations. In addition EBRD has approved a grant to provide additional specialized road maintenance to MOTC. MOTC should ensure that some of this equipment is assigned to the maintenance of the Project Road. A sensitivity analysis indicates that the Project remains economically feasible, with an EIRR of 14 %, even with only 50.0% of the required maintenance provided. The project area is part of an area placed under a United Nations

security restriction following the civil war. However, the security status was upgraded in late 2002, and again in September 2005. At present the Project area is not considered to represent a security risk.