

Environmental Assessment Report

Summary Initial Environmental Examination
Project Number: 39669
November 2007

Uzbekistan: CAREC Regional Road Project

Prepared by the Republican Road Fund for the Asian Development Bank (ADB).

The summary initial environmental examination is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

SUMMARY INITIAL ENVIRONMENTAL EXAMINATION

A. Introduction

1. The Project is classified environment category B in accordance with the Asian Development Bank's (ADB's) *Environmental Assessment Guidelines*. The summary initial environmental examination (SIEE), prepared by the project preparatory technical assistance (PPTA) consultant on behalf of the Republican Road Fund (the Road Fund), is consistent with the requirements of ADB's *Environment Policy (2002)* and *Environmental Assessment Guidelines*. The Project will comprise upgrading of two sections of national highway A-380, and will not involve realignment or construction of bypasses or diversions. As such, it does not fall under the type of projects that require an environmental assessment based on the Law on Ecological Expertise, 2000.¹ Only a confirmation that project activities will be confined within the right-of-way and that no significant realignments or interference with any natural habitat will take place is required.

B. Description of the Project

2. The Project will have three components: (i) road construction; (ii) road equipment acquisition; and (iii) advisory support for the introduction of a comprehensive road sector planning and management system; establishment of a road construction equipment unit; and procurement of civil works, consultants, and equipment. The Project will involve resurfacing and widening of two sections of the A-380 highway totaling 131 kilometers (km): (i) in Kharezm Province (Section 1: 91 km), and (ii) in the Republic of Karakalpakstan (Section 2: 40 km). Upgrading shall be confined within the existing 50-meter (m) right-of-way (25 m on either side of the road centerline). The main working width will be 8–10 m centered over the existing carriageway. Construction and movement of materials will take place along the highway, so access roads will not be necessary. The Project will not involve land acquisition and resettlement. Rehabilitation works will require more than 6.6 million cubic meters (m³) of earthworks for subgrade, shoulder, and carriageway repair. Site works are expected to commence in late 2008, with actual work progressing for 3 years.

C. Description of the Environment

3. **Topography and Geology.** The topography of the land through which the two road sections pass includes mostly desert and slightly undulating terrain, as found at the boundary of the Amudarya River valley. The geology of the area consists of a mixture of sandstone and limestone, overlain with sand. Nearly all towns and villages in the vicinity of the road are located in the irrigated river plain and the delta of the Amudarya, a minimum of 5–10 km away from the road right-of-way, leaving the project roadsides almost totally uninhabited. Neither of the project road sections passes across or close to the river valley proper.

4. **Climate, Air Quality, and Noise.** The project area has a southern temperate continental desert climate, with extremely hot summer temperatures exceeding 45°C and virtually no rain. December through February is the winter period, with temperatures dropping below –15°C, but more often around the freezing point or above 0°C. Temperatures begin to climb in March, accompanied by occasional rain (200 millimeters or less) and sometimes accompanied by flash floods. In dry desert conditions, the daily temperature fluctuations can be as much as 30°C.

¹ Included in the New Laws of the Republic of Uzbekistan Edition 23. Amendments were published in the Narodnoye Slove in July 2000.

Frequent dust storms occur during the summer months of March to May when winds exceeding 100 km/hour generate large disturbances, significantly raising the levels of total suspended particulates in the project area. Fine salt is also dispersed into the air mass during such storms. Given that traffic is light and there is no industry anywhere along the alignment—except the Provincial Transport Department's rock crushing and batch plant facilities, and the soda mine and factory at Km 916—air remains relatively free from gaseous emissions. During the field investigation, no noise sensitive sites were identified along the alignment.

5. **Water Resources.** Aside from occasional rainfall and flash floods, the road does not pass over any surface water. The shallow groundwater aquifer is >25 m below the surface, saline, and polluted. Because of intensive pesticide and fertilizer use, especially in Khorezm Province and the Republic of Karakalpakstan, groundwater at a depth of 100–150 m is also contaminated. Groundwater for human consumption is scarce in the two project regions, with only 22,000 m³/day and 33,000 m³/day available based on 2003 data.

6. **Flora and Fauna.** The ecological zones through which the road passes is the Qizylkum desert and Ustiyurt Plateau, an elevated desert region, much of which is significantly modified by past irrigated agriculture and livestock overgrazing. The project road runs along a sparsely vegetated semidesert area. Section 1 has no known environmentally sensitive features within at least 3 km centered over the road. The Amudarya River Basin Forest Reserve is located at Km 677, more than 100 km away from section 1 and 200 km from section 2. There are no known sensitive species habitats for section 2, despite the fact that the area was the migratory range of the saiga antelope (an endangered species) and goitered gazelle (a vulnerable species) prior to 1980. Since that time, overhunting and shrinking of the Aral Sea has decimated the saiga population such that only 10% of the original numbers remain. There is no danger that the project roadwork will in any way interfere with these species. A less severe, but similar condition, affects the goitered gazelle. There are other vulnerable birds and herptiles species in the general area, but they have not been sighted within 5 km of the road sections by environment officials of Gozcompiroda Nukus or Kungrad for over a decade.

7. **Economic and Cultural Resources.** The Republic of Karakalpakstan, where nearly all the road improvements will take place, is sparsely populated (7.5 people/km²) and areas within the road right-of-way area are almost totally devoid of settlements. There is no human settlement within the 50 m wide right-of-way along the entire project corridor. Some nomad camps and a few road-toll houses are located some distance from the road. A number of villages identified in the social assessment report are located 5 km or more from the road sections. The project road section has no farming, other than nomadic sheep and cattle herding which has decreased the sparse grass cover, thereby increasing problems with sand dunes and erosion. The land is used almost totally for light grazing or is unused. Generally, towns near the project road have electricity, but little else. This is particularly true in the Republic of Karakalpakstan, where frequent power outages are experienced and basic household services such as piped potable water or indoor toilet facilities do not exist.

8. Topraq Qala Fort, spread over a 120 m x 100 m area, is an adobe walled fortification located along section 2 (km 887) north of Kungrad and is a second century A.D. structure from the Kushan period. Toprak Qala has no access or connection to the project road. The fort's outer mud wall boundary is located about 150 m from the A-380 highway. Daud Ata Cemetery is also located along section 2 at km 889 on the west side of the A-380 highway. It is actively used by the four small villages located to the east, as well as by the people of Kungrad. The cemetery entrance is located 50 m from the edge-of-pavement. On the Ustyurt Plateau, there are a series of other archaeological sites—Kirqgiz Qalaa and Tesik Qalaa—dating from the same period as

Daud Ata Cemetery. These areas are known only from historical records, i.e., they have not been rediscovered.

D. Screening Environmental Impacts and Mitigation Measures

9. **Pre-Construction Phase.** The decision to restrict the road upgrading to within the existing right-of-way and carriageway will keep construction impacts to a minimum. Existing transmission lines and underground gas pipelines are located outside the right-of-way. A work boundary of 25 m from the centerline of sections 1 and 2 will be defined using fencing to ensure that construction equipment are kept within the work sites. The Road Fund also plans to bring all construction materials to the construction area in bulk by railcar and from nearby intermodal terminals. Large trucks (up to 26 tons) will be used to transport materials to the construction site. Construction vehicles and equipment will make use of the existing highway such that no new access roads need to be established. As part of the detailed design work, areas along sections 1 and 2 that are prone to flash floods shall be identified by local road agency staff and these conditions shall be accommodated in the final design.

10. **Construction Phase.** Road widening will require clearing of about 130 hectares (ha) of land within the right-of-way. Natural vegetation removed during construction shall be replaced. Stabilization using reed mats and the planting of saksaul (*Haloxylon* sp.) seedlings according to advice from the Uzbekistan Forestry Institute in Tashkent will be undertaken. It may be possible to use waste sewage water to help with watering of revegetation sites. To prevent wind and water erosion, revegetation of the disturbed areas will be undertaken as the work proceeds and as soon as work on any given stretch is completed. During the initial environmental examination (IEE), it was determined that a saksaul tree nursery was established with donor assistance (German development cooperation through Deutsche Gesellschaft für Technische Zusammenarbeit or GTZ) in the Republic of Karakalpakstan and that trees are available for replanting purposes.

11. Extraction of sand and gravel in riverbeds shall be prohibited except (i) where there is no technically and economically feasible alternative; and (ii) provided specific mitigation measures are implemented to minimize impacts on river morphology, water quality, and ecosystems (e.g., reduced extraction during the fish spawning period). Materials shall be sourced from licensed quarry/borrow areas operations. Borrow pits shall be dewatered and fences shall be provided, as appropriate, to minimize health and safety risks. Large volumes of quarry rock, aggregate, and sand will be transported and stored near the roadworks. Work and storage areas and haul routes will be constantly exposed to the elements, and will primarily create dust during the frequent windy conditions. Dust control will be very difficult given the scarcity of water. Dust at work and materials storage sites will be controlled by watering, using shallow aquifer saline water. Along the haul roads, provision of canopies on loaded trucks will be the primary mitigation measure. Any spills on the haul roads will be cleaned up by the contractor within a 24-hour period. It is assumed that the new mobile plants purchased as part of this loan will have dust suppression technology installed and as such will help to control the dust plumes that usually come from crushing operations. Emissions should be kept to a minimum given that state-of-the-art machinery will be used. Inspection and regular reporting will ensure that equipment is maintained to specifications and that dust is carefully and continuously managed. Dust control will be particularly stringent for mobile crushing plants, which can produce large plumes of fine dust that can become airborne many kilometers downwind of their location.

12. Sediment-laden drainage water is not an issue since there is no surface water body into which it may drain. Runoff will simply percolate into the surrounding soils during the rare rains.

Fuel will be stored in an adequately protected area to prevent contamination of groundwater in case of spills or leaks. Construction camps shall be provided with septic tanks, and solid waste shall be properly stored and disposed of. The contractor shall undertake proper decommissioning of work areas, work camp sites including waste dumps, and sealing/securing of wells newly dug for use during the construction period. Construction inspection will include specific examination of existing culverts and water channels in areas subject to flash flooding to reconfirm that no drainage restrictions will result because of the construction work. The contractor shall prepare a traffic management plan to ensure that adequate vehicular and pedestrian access is provided at all times.

13. Given the scarcity of water (particularly water suitable for use in concrete making) and a plan for contractors to extract large volumes from the deep aquifer along the road or from existing wells, a water extraction permitting and monitoring program will be prepared by the contractors in close consultation with local water management authorities. The extraction volumes per well will be established based on the geo-hydrological conditions as determined by experts, such that recharge and extraction will be balanced. Each well to be used will have a maximum sustainable extraction volume established, and a meter will be affixed to each well with a seal. Meters will be read daily, with records sent to local authorities. Contractors exceeding allowable limits will have the water supply shut off and an investigation completed and fines paid.

14. The project implementation unit (PIU), with the assistance of the construction supervision engineer, shall undertake regular environmental compliance monitoring. A monitoring checklist will be prepared as part of each monitoring cycle and a monitoring report, which will be attached to the weekly and monthly progress reports. The monitoring report will provide an assessment of the contractor's implementation of mitigation measures, identification of other impacts that need to be addressed, and documentation of complaints by the affected people and how such complaints were addressed. To carry mitigation measures over into the operating period, the contractor will prepare a construction period environmental mitigation completion report to be submitted to Uzavtoyul for its use during the operational period. Some measures, such as revegetation, will need to be continued and strengthened during the operational period.

15. **Operation Phase.** With an expected small increase in traffic volume, associated impacts will likely be minor. Local air and noise conditions will be affected minimally. Uzavtoyul shall continue maintaining revegetation areas and confirmation of the predicted noise and vibration disturbance caused by traffic increase if there is roadside residential development. Depending on the shipping routes, the transport of larger volumes of hazardous and toxic materials may marginally increase the risk of hazardous material spills. Once the traffic volume of trucks doubles and the movement of hazardous and toxic materials increases significantly, a specific spill contingency plan should be prepared and provincial offices should be trained to respond to spills.

E. Institutional Requirements and Environmental Monitoring Plan

16. The environmental management plan (EMP) proposed in the IEE shall be made legally binding through inclusion as environmental clauses in the Loan Agreement between the Government and ADB as well as in the specifications in the contract bid documents. The contractor shall be responsible in implementing the identified mitigation measures during the construction stage and shall be required to prepare a site-specific construction period environmental action plan defining steps they will take to ensure timely and proper

implementation of mitigation measures using, as basis, the environmental controls recommended in the IEE. The Project will have a PIU assisted by a construction supervision engineer, likely an international consultant, with responsibility for environmental mitigation and monitoring oversight. It will be the construction supervision engineer's responsibility to establish specific pay items for the environmental mitigation and monitoring activities, with payments made only after verification that each work component has been completed as prescribed. Since neither Uzavtoyul nor the Road Fund have skills in environmental compliance inspection/monitoring and reporting, particularly at the *oblast* or provincial level, the PIU will organize and coordinate workshops for managers and *oblast*-level inspectors. Topics will include environmental assessment, mitigation inspection, enforcement of environmental management plans, and reporting. Terms of reference for a short training program have been prepared and are attached in the IEE.

17. During the project design period, monitoring will focus on confirming Uzavtoyul's commitment to arranging and participating in training programs on environmental assessment, mitigation and monitoring methods, and reporting. Secondly, the contract documentation will be examined to assure that appropriate environmental safeguards have been added, such as the requirement to implement and adhere to the environmental mitigation and monitoring plan.

18. Construction period monitoring will deal mostly with compliance monitoring of the following construction-related actions: (i) consultation with local community people prior to initiation of work that affects their livelihoods, e.g., access restriction and traffic congestion, noise; (ii) execution and management of the revegetation program; (iii) handling and delivery of construction materials; (iv) dust management at construction sites; and (v) general good housekeeping activities by the contractor at all construction sites.

F. Public Consultation and Information Disclosure

19. Two public consultation sessions, attended by local officials and small businesspersons, were undertaken for the Project. During these consultations, all project details known at the time, except costs, were disclosed, including the preparation of an EMP and the strong commitments of Uzavtoyul to follow the environmental guidelines defined in the IEE. During both sets of meetings, participants were pleased to note the emphasis on environmental controls but felt that there was little to be concerned about for this Project. The first consultation was in June 2007, held in Bukhara and Urgenh. The TA consultants presented the Project and sought comments and inputs. The participants did not raise concerns regarding potential environmental impacts and expressed full support for the Project. The second round of consultations was held in Nukus and Kungrad, Karakalpakstan in July 2007, and addressed specific environmental concerns such as the existence and sensitivity of the endangered species near the project area, and existing concerns with noise and air pollution. Local officials and municipal managers had no concerns with construction period impacts, but were interested to learn about the traffic management program during the construction, as the work would be done on the existing A-380 highway. Uzavtoyul is consulting with its regional offices in this matter and will require that the contractors prepare a traffic management program.

G. Findings and Recommendations

20. The project road, along with other proposed improvements along various sections of the A-380 highway, will contribute to reduced travel time, more reliable transport service, greater passenger comfort, and generation of jobs stemming from greater traffic-induced commerce. These changes will, over the long term, gradually lead to an improved standard of living for local

families who take advantage of new income-generating opportunities. It will provide better access to services such as health, schooling, and markets that will be felt immediately once a section or road is improved.

21. While the IEE identified a number endangered species, these are found at great distance from section 2 on the Ustyurt Plateau. Local experts indicated that few, if any, of these species are found anywhere near the road right-of-way.

22. Provided that the mitigation and monitoring actions defined in the IEE are implemented during the construction and operation periods, the Project will not have significant adverse environmental effects and should be carried out as planned.

H. Conclusion

23. The IEE is considered sufficient to identify anticipated impacts associated with the Project, and provides measures for their mitigation and management. Therefore, no further environmental assessment is required.