

ASIAN DEVELOPMENT BANK

COUNTRY ENVIRONMENTAL ANALYSIS

TAJIKISTAN

(RETA 6095: Integrating Environmental Considerations Into
Development Policies, Plans, and Programs)

July 2004

CURRENCY EQUIVALENTS

(as of July 01 2004)

Currency Unit	–	somoni (S)
\$1.00	=	\$0.3392
\$1.00	=	S2.9478

ABBREVIATIONS

ACTED	–	Agence pour la Cooperation Technique and Developpement (France)
ADB	–	Asian Development Bank
AKDN	–	Aga Khan Development Network
AKFED	–	Aga Khan Fund for Economic Development
APCED	–	Asia-Pacific Conference on Environment and Sustainable Development
CAEC	–	Central Asia Economic Community
CAMIN	–	Central Asian Mountain Information Network
CAMP	–	Central Asia Mountains Partnership
CARs	–	Central Asia republics
CBO	–	community-based organization
CDE	–	Center for Development and Environment
CEA	–	country environmental analysis
CSP	–	country strategy and program
DMC	–	developing member country
DRD	–	Direct Rule Districts (sometimes as “Districts of Republican Subordination”)
EIA	–	environmental impact assessment
ECHO	–	European Community Humanitarian Office
EPIC	–	Environmental Policies and Institutions of Central Asia
ESCAP	–	Economic and Social Commission for Asia and the Pacific
EU	–	European Union
FCO	–	Foreign and Commonwealth Office
FSU	–	former Soviet Union
GBAO	–	Gorno-Badakhshan Autonomous <i>Oblast</i>
GDP	–	gross domestic product
GEF	–	Global Environment Facility
GEMS	–	Global Environment Monitoring System
GM	–	Global Mechanism of the UNCCD
GWP	–	Global Water Partnership
HCG	–	Helsinki Consulting Group
HDI	–	Human Development Index
HYDROMET	–	Agency for Environmental Control and Hydrometeorology
ICAS	–	Interstate Council for the Aral Sea (merged into IFAS)
ICCWRM	–	Interstate Commission for the Coordination of Water Resource Management (see also ICWC)
ICIMOD	–	International Center for Integrated Mountain Development
ICSD	–	Interstate Commission for Sustainable Development
ICWC	–	Interstate Commission for Water Coordination (see also ICCWRM)
IDB	–	Islamic Development Bank
IEE	–	initial environmental evaluation
IFAS	–	International Fund for Saving the Aral Sea
IFI	–	international financial institutions
ISO	–	International Standards Organization

LEAP	–	local environmental action plan
MNP	–	Ministry of Nature Protection
MOA	–	Ministry of Agriculture
MOU	–	memorandum of understanding
MWRLR	–	Ministry of Water Resources and Land Reclamation
NAPCD	–	National Action Program to Combat Desertification
NFP	–	National Focal Point
NEAP	–	National Environmental Action Plan
NGO	–	nongovernment organization
NIS	–	Newly Independent States
NEAP	–	National Environmental Action Plan
OCHA	–	Office for the Coordination of Humanitarian Affairs (of U.N.)
OPEC	–	Organization of Petroleum-Exporting Countries
OSCE	–	Organization for Security and Cooperation in Europe
PIP	–	Public Investment Plan
PPP	–	purchasing-power parity
PRC	–	People's Republic of China
PRPA	–	Poverty Reduction Partnership Agreement
PREGA	–	Promotion of Renewable Energy, Energy Efficiency and Greenhouse Gas Abatement Projects
RAP	–	Regional Action Program under UNCCD
REAP	–	Regional Environmental Action Plan
SCLM	–	State Commission on Land Management
SES	–	Sanitary and Epidemiological Station
SDC	–	Sustainable Development Commission
SECO	–	Swiss Economic Cooperation Office
SFD	–	Saudi Fund for Development
SIC	–	Scientific Information Center
SME	–	small and medium enterprise
SPA	–	Strategic Partnership Agreement
SPECA	–	Special Program for the Economies of Central Asia (of the U.N.)
SRAP	–	Sub-regional Action Program under UNCCD
TA	–	technical assistance
TACIS	–	Technical Assistance for the Commonwealth of Independent States
TADAZ	–	Tajik Aluminum Works
UNCCD	–	United Nations Convention to Combat Desertification and Drought
UNDP	–	United Nations Development Program
UNECE	–	United Nations Economic Commission for Europe
UNEMS	–	Unified National Environmental Monitoring System
UNEP	–	United Nations Environment Program
UNOPS	–	United Nations Office for Program Support
USAID	–	United States Agency for International Development
WARMAP	–	Water Resource Management Assistance Project
WB	–	World Bank
WFP	–	World Food Program
WSSD	–	World Summit on Sustainable Development

GLOSSARY

dekhon, dekhan	farmer, farmer-owner
hukumat	local government, headed by an akim (in oblasts, rayons, and 69 towns and large villages)
jamuat	local council at a sub-rayon level (354 of them in Tajikistan)
kishlak	former kolkhoz and its workforce, village
kolkhoz	agriculture cooperative during the Soviet period
Majlis Oli	National Assembly
oblast	Province (4 of them in Tajikistan including the autonomous oblast of Gorno-Badakshan)
rayon	District (66 of them in Tajikistan)
sovkhoz	state farm during the Soviet period

NOTES

- (i) The fiscal year (FY) of {the Government and its agencies} ends on {day month}.
- (ii) In this report, "\$" refers to US dollars

This report was prepared by Xiaoying Ma, ECAE; _____

CONTENTS

	Page
MAP	#
EXECUTIVE SUMMARY	
I. INTRODUCTION	#
II. BACKGROUND	#
A. Overview: Environmental Strategy in Support of Economic Development	#
B. Principal Environmental Concerns	#
C. Government Policies	#
D. Institutional Developments	#
E. Environmental Management Capacity	#
F. Financing of Environmental Management	#
G. Public Participation	#
H. International Commitments	#
I. Donor and NGO Programs and Activities	#
III. THE WAY FORWARD: PROMOTING SUSTAINABLE DEVELOPMENT	#
A. Improving Policy Formulation	#
B. Strengthening Environmental Management Capacity	#
C. Improved Monitoring	#
D. Recommended Approaches to Promoting Sustainable Development	#
IV. APPROACH AND PROGRAM	#
A. ADB Experience and Comparative Advantages	#
B. ADB's Environment Strategy and Work Programs	#
C. Linkages with Government Programs and External Assistance	#
D. Performance Monitoring	#
E. Conclusions and Recommendations	#
APPENDIXES	#
1 Institutional Structure of Environmental Management in Tajikistan	#
2 Tajikistan: Selected Environmental Data and Trends	#
3 External Assistance to Environmental Management	#
4 ADB Multiyear Assistance Program	#

EXECUTIVE SUMMARY

INTRODUCTION

ADB's revised business practices place emphasis on the preparation of upstream sector road maps and thematic analyses as fundamental elements of a sound country strategy formulation. Country Environmental Analyses (CEAs) provide the background necessary for informed decision making on environmental initiatives based on an assessment of existing constraints, needs and opportunities in the country concerned. CEA is an input into the Country Strategy and Program (CSP). It is initiated ahead of the CSP and continues throughout CSP's preparation. **The new CSP was finalized in September 2003 and at present awaits ADB's and the Tajikistan's Government formal approval.** The current document is a summarized version of the first CEA prepared for Tajikistan by ADB consultants.¹ The reader is referred to that document for all relevant details.

PART I. STATE OF THE ENVIRONMENT

A. Overview: Environmental Strategy In Support of Economic Development

Tajikistan is the poorest of the former Soviet Union (FSU) Central Asian countries. In 2000, 83% of the residents lived below the official poverty line. Apart from foreign assistance, Tajikistan relies heavily on the remittances of more than a million Tajiks (almost 20% of the country's population) working outside the country, mainly in Russia. The breakdown of the USSR and Tajikistan's independence exacted heavy economic price reflecting the country's strategic location (and a costly civil war between 1993 and 1996), and the degree of dependence on the old production patterns that have proved difficult to modify. Added to these and other problems of economic transition common to all Central Asia republics countries are special factors. Physical vulnerability caused by extreme and earthquake-prone mountainous topography is one of them. Low percentage of flat arable land puts a premium on maintenance of agricultural productivity is another. Tajikistan continues to be a grain importer. High population growth rate, a growing percentage of rural population (from 68% in 1990 to 74% of the country's total in 2000), and a high share of agriculture in employment (65% of the total in 2000 up from 45% in 1990) complete the picture. In these circumstances, it is not an exaggeration to say that natural resources and environmental considerations are at the heart of the country's quest for food security and economic development and key to its future.

Despite all of this, the prospects are not necessarily bleak. The official statistics do not capture fully the informal economy and most likely overstate the depth of poverty. The country has a literate, young and multilingual population, a physical potential for agricultural diversification, considerable eco-tourism potential and old traditions of commerce. Functioning markets have emerged fast in some cases. Removal of the administrative barriers to foreign trade alone could transform the country's economic prospects. With the right policies at home, the flow of remittances could quickly become an engine of growth.

¹ Ruzicka, I. 2003. *Tajikistan: Country Environmental Analysis*, Consultant report to ADB under TA 6095, Dushanbe and Manila.

The abundance of water cast Tajikistan (along with Kyrgyzstan) in the role of a supplier of water to the irrigated agriculture of the whole of Central Asia, managed as a single system during the Soviet days, as well as a major producer of hydropower. Political independence radically changed the situation as optimization at the country level came into conflict with the previous pattern that operated without any reference to national boundaries. All of Central Asia is grappling with this issue and the progress has been much slower than initially expected despite major inflow of donor funds.

During the early phases of transition disrupted in Tajikistan by civil war, attention to issues of sustainable development and environmental protection took a back seat. Not surprisingly, a number of serious environmental problems emerged. Restoration of internal peace in the late 1990s was a major achievement that made it possible for the Government to re-focus on economic development. In the process, and with increasing donor support, environmental considerations have re-entered the development debate and efforts.

B. Principal Environmental Issues

A comprehensive ADB-commissioned account of the principal environmental problems of Tajikistan ("Tajikistan Environmental Profile") was prepared in 2000. Other documents are becoming available (e.g., Tajikistan *State of the Environment* reports, *National Sustainable Development Report Rio+10*, action plans under environmental conventions, and several others). They provide an adequate basis for a policy- and program-oriented assessment.

The material mentioned above presents a consistent picture of what the major environmental problems the country faces are. They include:

- Natural disasters including drought and landslides.
- Land degradation, including salinity build-up in irrigated areas and soil erosion.
- Deforestation and desertification
- Deterioration of wildlife and protected areas.
- Inadequate supply of safe water in rural areas
- Deterioration of the water supply- and wastewater infrastructure and inadequate solid waste management in towns

These priorities are briefly reviewed below together with several additional concerns widely voiced.

1. Natural Disasters

Tajikistan's mountainous and young geography in combination with variable climate explain a high incidence of small-scale but high-impact natural calamities such as floods, earthquakes and landslides. There are larger-scale potential risks also: Lake Sarez, high in the mountains of GBAO, created as a result of an earthquake, presents a major risk of collapse and wide-spread flooding. Among other things, these factors affect the design and economics of infrastructure projects; reinforce the case for erosion control, and for flood forecasting and protection activities.

2. Land Degradation

Land degradation in Tajikistan includes a range of conditions and impacts.

- (i) Salinization, exhaustion and degradation of irrigated lands reflecting poor water- and other management practices in agriculture. Cotton yields, a proxy indicator of the productivity of irrigated lands, have been steadily declining. Expansion of irrigation into new areas without adequate drainage has exacerbated the problem of rising water table and secondary salinization necessitating expensive emergency interventions. In a country short of irrigated land, several thousands of hectares of such lands are being lost to farming in a single year because of salinity. The total affected is close to 120,000ha, i.e. almost a fifth of all arable land. Neglect and damage to irrigation and drainage structures during the civil war have further worsened the situation.
- (ii) Wind/water erosion. Trees and brush in many parts of Tajikistan have been cut for fuel because of the cessation of coal and natural gas supplies to the countryside after 1991 and lower availability of winter electricity. The problems of upland degradation in Tajikistan cannot be solved without attention to winter supplies of energy.
- (iii) Pastureland degradation: Some 3 million hectares, i.e. about 85% of total areas of pastures, are said to be degraded as seasonal use of high elevations is being replaced by year-round use of lower lying lands. Complex interactions involving grazing pressure and the productivity of pastures are yet to be properly evaluated with the help of fresh data but there can be little doubt about the generally worsening situation. Most aspects of land degradation are reinforced by the decline of the dedicated research and monitoring. Besides underestimating the area of land actually farmed, official data overestimate the forest cover, and the true extent of areas accorded effective protection.

3. Deforestation and Desertification

All forests of Tajikistan are protection forests i.e. their felling (other than sanitation cutting) is forbidden. Yet illegal cutting of trees increased rapidly during the 1990s. As with pasture degradation and often in association with it, soil erosion follows. Besides the loss of mountain forest, since 1950s, more than 300,000 ha of native *tugai* (*Populus pruinosa*, *Elaeagnus angustifolia*) forest have been converted to farming or destroyed in the lower elevations of Kulyab zone, Vakhsh valley and along the banks of Syr-Darya in in Sughd leaving only islands of such vegetation in places such as Tigrovaya Balka *zapovednik*. Destroyed the hydrological function of these areas, many of them have been affected by salinity.

During and immediately after the 1990s civil war, significant population drift into lower mountain areas of Kulyab, Karategin, Badakhshan zones and Zarafshan river valley took place, reversing the movement of people from the mountains into collectivized agriculture in the early years of the Soviet period. In the Hissar and several other mountain ranges, forests and even tree crops (including pistachio trees) have been cut for construction use and as firewood, a powerful illustration of the impact of the disruption of markets for many agricultural products of the Soviet period (fruits, wine, nuts) and their replacements by life's necessities such as grains. The process has been a lifesaver but something of an ecological disaster with accelerated soil erosion, destruction of a vegetative cover, and uncontrolled expansion of cattle after the declines of the herd during the civil war period.

4. Low Access to Piped Water and Water Contamination

Only about 57% of Tajikistan's population is served by piped water, the percentage in rural areas around 40%. Only 17% of the population is connected to a sewage system. In rural areas, the coverage is as low as 2%. Uncontrolled discharges of waste into rivers in the countryside have affected the quality of irrigation water and groundwater, as well as drinking water. Some of public health functions formerly performed by *kolkhozs* and *sovkhozs* virtually ceased following the near-collapse of collectivized agriculture. The health repercussions of this (as well as other factors) have been serious. Reduced use of fertilizers and agro-chemicals and their concentrations in soils and water has come at the cost of economic hardship and adverse impacts of lowered incomes. Municipal and uncontrolled village discharges generate the greatest volume of water contaminants while ore-processors and several industrial plants account for most toxic discharges.

5. Deterioration of Wildlife and Protected Areas

Tajikistan is home to unique kinds of flora and fauna. Combined with spectacular geography, the country is a nature treasure trove and a promising eco-tourism destination. However, the pressure on renewable resources described earlier has represented an attack also on this treasure and the biodiversity it contains. Wildlife habitats are being reduced in all regions by a mixture of factors. Cutting of trees and brush, over-grazing, poaching and human intrusion into wildlife areas in general (especially widespread during the civil war) have all been factors in this process. There are 4 nature reserves (*zapovedniks*) totaling about 170,000 ha and 13 nature refuges (*zakazniks*), totaling over 300,000 ha, all of them established during the Soviet times. A 2.5 million-ha Pamir National Park was created last year but it exists on paper only for the time being. Most protected areas are poorly known among the Tajik population and Government officials alike, some are in major need of rehabilitation following the damage sustained during the civil war, and many are kept functioning largely because of the dedication of a small number of individuals.

6. Environmental Problems Associated with Mining and Industrial Pollution

Some 100 mines are in operation in Tajikistan producing forty different kinds of minerals (including gold and uranium) and coal. The relatively small number of industrial polluters in Tajikistan together with a steep decline in industrial production in the 1990s have reduced significantly the total amount of industrial discharges. In spite of this, certain types of toxic or hazardous waste continue to be generated and others are unsafely stored awaiting disposal or are disposed of haphazardly. Four largest industrial enterprises, namely the Tajik Aluminum Smelter (TAZAD), Isfara Metallurgical Works, Yavan Electrochemical Enterprise and Vakhsh Fertilizer Plant are also the major polluters. As in other CARS, accumulated waste from the previous era, especially certain mine tailings, are raising concerns about surface and groundwater contamination.

7. Urban Environmental Problems

Provision of safe drinking water has become a major concern in all cities and towns of Tajikistan. Whether based mainly on groundwater (in most towns) or surface sources (Dushanbe), the physical infrastructure is oversized, deprived of maintenance, and crumbling. Water network losses are estimated at between 40% and 70%. Wasteful use of water in general coexists with disruptions of supplies and water contamination in Dushanbe and other towns. Absence of metering and a meaningful cost recovery contribute to a huge gap between

maintenance demands and the funds generated, as well as resulting in rates of gross per capita water use (or water loss, more accurately) several times those of Western Europe. Wastewater treatment plants are in varying stages of reduced operability or have closed down. The term management can hardly be applied to solid waste. Inadequate and often unauthorized dumpsites or waste-burning are common. If the situation is less worrisome on the air quality side, this is largely a reflection of the involuntary de-industrialization (including a substantially reduced volume of road transport) than successful policies.

8. Transboundary Environmental Issues

Tajikistan's rivers feed into the Amu Darya and the Syr Darya rivers, and through them and the activities of its neighbors, Tajikistan is linked to the Aral Sea and its environmental fate. That fate is well known. The post-independence disruption of energy and water supply agreements has changed the pattern of water storage and releases by Tajikistan, forced to conserve more water for its own winter energy needs. The inability so far to achieve a more rational utilization of the regional energy-water allocations has been a major factor contributing to the Aral Sea decline. Dushanbe is the present home of the Executive Committee of the International Fund for the Aral Sea and Tajikistan has a good opportunity to influence one of the thorniest transboundary issues of Asia. Water-related environmental issues on a smaller transboundary scale are found in Fergana Valley. Emissions of pollutants by Tajik Aluminum Works (TADAZ) have led to protests by Uzbekistan but the emission performance of TADAZ has improved somewhat recently.

PART II. ENVIRONMENTAL MANAGEMENT REGIME – CONSTRAINTS, NEEDS, AND OPPORTUNITIES

A. Institutional Structure

The 1993 Law on Nature Protection, amended in 1997 and 2002, is the principal legal instrument governing environmental management in Tajikistan. The Law assigns overarching environmental responsibilities to the Ministry of Nature Protection (MNP), and *oblast*, *rayon* and city environmental committees. Under the Ministry are the State Environmental Inspectorate, HYDROMET (meteorology and hydrometry agency with a total of about 600 staff) and several other bodies. Taken all together, there are now 1,734 staff on the Ministry's payroll, with about a third of the total Dushanbe-based.

There are other government bodies the mandates and activities of which have a bearing on environmental outcomes. The Department of Environment and Emergency Situations (DEES) of the Presidential Office coordinates this Office's responses concerning environmental conditions and emergency situations. The others include the State Committee for Land Management in charge of land allocation, cadastre and land zoning with its Soils Institute ("*Tajikgiprozem*"), Ministry of Water Resources and Land Reclamation (MWRLR) responsible for all problems associated with irrigation and water management, Ministry of Agriculture including its Forestry Agency (until 2002, "*Tajikles*"), Ministry of Health in charge of, among other things, the network of Sanitary and Epidemiological Stations (SESSs), Ministry of Industry that coordinates with the MNP environmental protection investments for industrial enterprises and is home to State Mining Agency, and the Ministry of Interior responsible for monitoring and enforcing air quality related to mobile-source polluters. Municipal water authorities ("*Vodokanals*") are in charge of water supply and wastewater treatment in all *oblast* and *rayon* centers.

Several multi-agency committees and working groups exist, including The National Sustainable Development Commission tasked with the preparation of a country-wide strategic plan based on sustainable development principles, working groups responsible for drafting of plans and promoting policies that facilitate compliance with Tajikistan's obligations under respective international environmental conventions and other *ad hoc* committees dealing with specific issues (e.g. agrarian reform, mining, etc.). The academe also plays a role, especially the Tajik National University, Tajik Agrarian University, Academy of Sciences of Tajikistan, and Tajik Agricultural Academy of Sciences. All in all, whether directly or indirectly, considerable number of institutions and individuals in Tajikistan have something to say about environmental management.

The quality of consultation and collaboration among various organizations related to environmental protection varies, poor delineation of responsibilities and lack of willingness to subordinate own mandates to those of others an obvious weakness. Conflicts are noticeable in activities such as wastewater and solid waste management, soil erosion and land degradation control, and certain kinds of emergency response.

B. Regulatory Framework

The Law on Nature Protection (LNP) is supplemented by other laws and regulations targeting environmental management in Tajikistan. They include the 1992 Regulation about the MNP (adopted prior to the passage of the LNP, but never withdrawn), the 1993 Forestry Code, the 1994 Mineral Resources Law and Law on State Sanitation Control, the 1995 Administrative Code (amended in 1996 and 2000), the 1996 Law on the Protection of Air Quality, the 1998 Land Code, the 2000 Water Code, the 2002 Law on Waste, Waste Generation and Waste Utilization, and EIA Law of 2003. Some fifty environment-related implementing decrees and decisions have been issued since 1992, addressing a variety of environment-related subjects. These and more detailed instructions taken together are the body of reference for policy-makers in MNP. There are inconsistencies and overlaps as well as gaps in coverage in spite of the already large number of legislative documents and decrees. These have been studied recently under recent ADB-funded technical assistance to MNP and a number of suggestions have been made for improvements.

Everyday regulatory activities consist of licensing, inspection, and imposition of fines for infringement of permit conditions or maximum permissible pollution concentrations. In most cases, these activities are conducted by regional and city environmental committees and the state inspection officers. In the case of industrial enterprises, the system relies on self-monitoring by enterprises. The pollution charge system is a positive feature of the regulatory framework but its economic fundamentals as well as the implementation specifics have not been independently evaluated. They should be.

Recent technical assistance to MNP also made it clear that factors such as improved governance through expanded transparency, full disclosure, greater public access to information, and salary increases that eliminate the need for outside income will have to be an integral part of any lasting efforts to improve environmental regulation. As to business-government dialogue on environmental regulation and matters such as environmental compliance, economic incentives and disincentives, enforcement and governance issues, this is yet to start in earnest.

C. Policy Formulation

The policy foundation of environmental management in Tajikistan is the State Environmental Program for the period 1998–2008, approved in 1997. The Program obligates ministries and offices, heads of administrations and mayors of cities to improve environmental conditions and ensure sustainable development of the country during the period of economic transition. It divides the country into ten ecological zones. In a non-quantified way, it targets improvements in all principal areas of environmental concern described in the preceding paragraphs. It also calls for economic and other analyses of environmental problems and economic mechanisms to be used for the purpose of environmental management including (a) limits on the use of resources, (b) payment for use of natural resources, and (c) pollution charges. It mentions better monitoring, improved and more transparent “environmental expertise” (EIA), and greater financing of environmental activities. There are sections dealing with environmental education, information, environmental centers and environmental legislation. State natural sanctuaries are to receive special protection. The policy provides for personal liability for environmental damage and for compensation by those responsible for the damage.

The Program demonstrates clear awareness of principal environmental issues, and its objectives are irrefragable. However, it lacks an economically argued strategy of how to reach the targets. Several environmental action plans and programs have been completed in the last few years including the *National Action Plan on Environmental Hygiene and Health (2000)*, *National Program of Action to Combat Desertification (2002)*, and *National Strategy and Plan of Action for Biodiversity Protection and Its Rational Utilization (2003)*. A number of planning documents thus exist without however any of them serving as a point of reference to which all other plans would be subordinated. *National Environmental Action Plan (NEAP)* has been under consideration and, later, preparation since 1999 but a draft version is not expected until early in 2004. An overarching environmental action plan or strategy is therefore badly needed, written not “by MNP for MNP” or by MNP for the international conventions but by MNP for the economy at large for it is often outside MNP’s mandate that environmental outcomes are also determined.

At least two policy documents attempt to integrate environmental concerns into the economic mainstream, namely the *National Sustainable Development Report Rio +10* prepared as Tajikistan’s contribution to the 2002 World (Johannesburg) Summit on Sustainable Development and the 2002 *Poverty Reduction Strategy Paper*, but much more needs to be done. The environmental content of most key sectoral plans (energy, most agriculture, water) is not well developed and where the activities of some entities (e.g. State Committee on Land Management or the Forest Administration within MOA) have an obvious environmental dimension, they are not clearly linked to the yet-to-finalized environmental master plan either intellectually or financially. The test of the degree of policy integration is the ability of supposedly linked agencies of the government to give consistent answers to the question of “what is the policy and strategy on dealing with X?” and for the time being, the answers have tended to be hazy and dissimilar.

The recent practice of setting up of *ad hoc* Government working groups to deal with key economic issues such as land reform and several others is a positive feature that deserves to be continued and translated into work programs and budgets that are mutually consistent. There are a number of other mechanisms available in principle to further better cross-sectoral integration. These range from the establishment in MNP of a center for policy formulation and coordination of environment management activities, to integrated (cross-agency) environmental monitoring or exposing the staff of mainstream agencies to environmental considerations.

Whatever the mechanism(s) chosen, the role of MNP in the policy domain should be to drive the integration rather than expanding environmental planning to more areas and more detail. NEAP should not be mainly a “shopping list” of projects written for the donors but a strategy of efficiently combining the activities of many in Tajikistan for the sake of common environmental objectives.

Continuing uncertainty in the minds of many of the appropriate role of MNP contributes to the weakness of policy. The mandate of MNP as mainly a monitoring and enforcing agency tends to receive instinctive support, related as it is to the long tradition of relying on science, numbers and end-of-the-pipe solutions. The involvement of MNP in policy-making is new and not surprisingly, MNP has turned to the academe for help in these matters. The academe itself, with a pronounced scientific bias, however, is new to these activities and notably weak in dealing with socio-economic aspects of environmental management.

Economic aspects of environmental policy have been weakly and unsystematically developed in Tajikistan even if their importance is being accepted by many at the government's highest levels. The important work on resource pricing, driven from outside, has not played much of a role inside MNP or its academic consultants despite far reaching impacts on environmental outcomes of the pricing of land, electricity, water and urban environmental services. Underdevelopment of a more economics-informed approach to policy and program formulation by MNP and others also works against effective cross-sectoral integration. Without it, it becomes more difficult to demonstrate the potential attractiveness of mainstream projects and programs that combine income generation with positive environmental impacts. Where such possibilities are few, it makes it harder for the respective sides to judge the budget repercussions of greater mainstreaming and seek necessary trade-offs. Looking for the most cost-effective and economically efficient way of reaching environmental objectives (rather than simply adding up the cost of set programs, the traditional weakness of NEAPs and their clones) can drive the cross-sectoral way of working for it may identify a number of cases where environmental objectives can best be achieved indirectly, through mainstreaming. There is no shortage of relevant examples from improved sanitation as a low-cost way of achieving certain public health objectives to energy efficiency programs as a way of reducing de-forestation, and so on.

The situation contains lessons for donors who finance most of environmental management in Tajikistan at present. The proliferation of donor-funded activities that do not necessarily conform to a clear strategy or follow sufficiently similar policies is cause for concern. The drive for reform in the policy formulation and coordination should come from the donors for now since local institutions find the proliferation of efforts a convenient way to square budgets and accept things as they are. Exchange of ideas rather than superficial information about “who is doing what” among the organizations with the greatest stake in sound policy (IFIs, most notably) has proven relatively difficult. The important policy-related work under international environmental conventions has frequently by-passed one or another important development partner.

An obvious gap in policy making is found in the absence of its decentralization (including that of environmental management) delayed by the prolonged internal conflict. With improved internal security, creation of local capacity to formulate programs, reflecting local perception, insights and know-how is becoming indispensable. Working at the *oblast* and *rayon* level must eventually become a crucial complement of the work at national level.

D. Environmental Management Capacity

The economic difficulties of the past decade have had a predictable impact on the capacity of the State to effectively manage the environment. The problems range from poor self-monitoring by the polluting industry (due to, *inter alia*, ageing equipment) to shortage of physical mobility at all management levels and continuing incompatibility of monitoring formats across different agencies of the Government that complicate the monitoring task to say nothing of problem analysis. However, despite severe downsizing since 1991, a network of Sanitation and Epidemiological Stations and HYDROMET monitoring stations continues to be operational. Many research and analytical laboratories or institutes have closed down after 1991 but some (e.g., the Cartographic and Soils Institutes of the State Committee on Land Management and some university-based laboratories) have survived.

If environmental protection in Tajikistan continues to be limited by budget constraints, high communication costs, shortages of facilities, and insufficient training of staff in legal and technical aspects, in this Tajikistan is not very different from other FSU or developing countries. Unlike in the developing countries, the problem is felt more acutely in Tajikistan because of the still vivid memories of how much more secure, advanced for its day, and widespread these activities were before 1990. In the process, a sense is created that all would be well with environmental management in Tajikistan if only the monitoring network regained its old shape, plus the latest technology. The reality is more complex.

E. Financing of Environmental Management

Environmental management in Tajikistan is largely donor-financed. The 2003 budget of the Ministry of Nature Protection and all its agencies is \$2.06 million (about \$650,000), up from \$1.7 million in 2002 (then about \$620,000). This amount is increased by extra-budget revenues of a similar order. Article 20 of the Law on Natural Protection stipulates the creation of a Nature Protection Fund to function as a tool for channeling funds from environmental charges and penalties towards environmental mitigation activities. The article has been translated into earmarking of 60% of the proceeds of pollution charges and fines to the environment-related activities of the *oblast* hosting the paying polluter, 30% to the respective *rayon* and 10% to support local environmental committees. While relatively easy to establish at the level of single environmental committees, the nation-wide picture of the magnitude and utilization of extra-budget funds remains non-transparent and subject some uncertainty.

Donor funding is several times greater than the MNP budget and extra-budget funds taken together even if much of it may be tied to specific uses of funds (e.g., consultants). It increases further if projects in sectors with strong environmental linkages (e.g., irrigation rehabilitation, water supply and sanitation, etc.) are taken into account. The donor support is unevenly distributed, however, and some environmentally-vital activities such as forest protection, afforestation, or management of non-irrigated lands that rely mainly on budget allocations rather than project-specific donor support are naturally experiencing far greater budget pressure than the more generously funded activities.

PART III. ADB APPROACH AND PROGRAM

A. ADB Experience and Comparative Advantage

ADB helped prepare Tajikistan's Environmental Profile, completed in 2000. This work was soon followed by technical assistance for institutional strengthening of the Ministry of

Nature Protection. Regional environmental initiatives in which Tajikistan played a role such as Regional Cooperation for Sustainable Mountain Development added to the growing experience (See Table 1). Beyond ADB's assistance for activities with direct environmental objectives, a relatively quick mobilization of loan funds took place for investments in power and irrigation rehabilitation, and water supply improvements.

**Table 1: ADB TA Activities with Direct Environmental Objectives
Tajikistan and Central Asia**

TA Number and Type	Title	Year	Amount (\$'000)
3614, AOTA	Environmental Assessment and Monitoring Capacity Building	2000	600
5860, RETA	Institutional Strengthening and Collection of Environmental Statistics	1999	500
5878, RETA	Regional Cooperation for Sustainable Mountain Development in Central Asia	1999	380
5934, RETA	Regional Environmental Action Plan (REAP) in Central Asia	2000	500
5941, RETA	Combating Desertification in Asia	2000	450
5996, RETA	Ten Years After Rio: Promoting Subregional Cooperation for Sustainable Development	2001	200
6001, RETA	Regional Consultations for the Third World Forum	2001	1,000
6095, RETA	Integration of Environmental Concerns into Economic Plans, Programs and Policies	2002	550
6099, RETA	Assessment of Sub-Regional Water Management Issues in Central Asia	2003	150

ADB, in common with other IFIs, has been progressively increasing contacts and cooperation with NGOs and civil society. Nevertheless, ADB assistance relating to the environment and the Bank's assistance in general is rated as poor by local (though not international) NGOs.

B. ADB's Medium-Term Strategy and Program

An environmental strategy for any country must reflect that country's specificity. In Tajikistan's case, the two distinguishing features are the country's geography that makes (1) food security and (2) emergency preparedness a priority (neither is a priority for, say, Kazakhstan). The less obvious is the huge population dislocation following the civil war. This unleashed a chain of repercussions ranging from land abandonment (or invasion of lands previously protected), breakdown of resource management systems, emergence of public health problems in cities that saw a massive replacement of former residents by rural newcomers and in the countryside. The absence of economically viable deposits of hydrocarbons and coal turned out to play a major environmental role in the wake of post-independence disruption of energy deliveries.

Other factors may not be specific to Tajikistan and their place in the strategy will be dictated by their perceived importance. ADB strategy will then move between these two broad sets of considerations. In doing so, ADB assistance must retain those elements of its 1998-2003 structure that are strongly pro-environmental. The chief among them is the important role assigned to power rehabilitation and water management.

The strategy needs to respond to key environmental concerns identified as (1) the environmental impacts of land use changes, especially threats of land degradation, (2) deterioration of irrigation supplies and loss of fertile land through salinity build-up and erosion; (3) problems related to water supply and water quality, including their impacts on health; (4) adverse environmental consequences of the winter energy deficit; and (5) continued absence of an "environmental road map". However, the strategy cannot respond to them equally. Given the

constraints on the overall size of ADB lending in Tajikistan, the response will have to be selective and distinguish between areas where ADB will act through own investments and technical assistance and those where ADB's role will be mainly effectively to liaise with its development partners and maintain own ability to respond in future. The former group will center around rural development and water management projects as a response to concerns (1) and (2) above. It will also partly address –through advisory technical assistance – the concern (5). It will not directly address concern (3) as social sectors have been “allocated” to other development partners, and will not respond directly to concern (4), although it may address them indirectly in ways suggested further below .

ADB's investment assistance will contribute to Government of Tajikistan's environmental objectives mainly through the design of environment-*related* projects rather than mainly through stand-alone activities singling out environmental management. There are many possibilities to shape the design of projects in the direction of greater and deliberate integration of environmental considerations are noted below. Bringing about greater unity of purpose and better donor coordination in environment-related planning and strategy formulation is the chosen way of addressing the concern (5). ADB will favor gradual reduction of MNP's overwhelming dependence on donor resources (and an outlook that goes with such dependence), greater attention to local financing and a more efficient and transparent use of extra-budget resources.

ADB's Country Environmental Analysis is prepared ahead of the National Environmental Action Plan (NEAP), being finalized without ADB's active involvement but with support of ADB's development partner, the World Bank. ADB will work closely with the World Bank and other major donors to ensure that NEAP acquires the necessary status of a reference document.

The design of ADB projects will deliberately seek to facilitate co-financing by like-minded bi-lateral sources and by GEF. In the case of GEF, ADB will support efforts to minimize duplication across different international environmental conventions. In Tajikistan, good opportunities exist for simultaneously addressing, for instance, biodiversity conservation, land degradation and climate change considerations, in single projects. The design of ADB projects will deliberately target these possibilities and ADB will resist unnecessary bureaucratic proliferation surrounding international environmental conventions.

Many environment-related activities envisaged for Tajikistan, especially those related to the utilization of surface water, have trans-boundary impacts. ADB had a relatively modest involvement in the early phases of key regional water-related initiatives such as the Aral Sea. It is important for ADB to have a good understanding of, and links to, that ever-evolving framework. Nonetheless, ADB's approach to environmental management is based on the view that transboundary cooperation on environmental issues in Central Asia is not mainly a technical issue but a political issue. The massive scope for efficiency and environmental gains that better regional co-operation in water and energy sharing (or better still, trading) could unlock will remain among ADB's regional priorities. However, Tajikistan's environmental strategy should not and need not be conditional on solutions to the complex regional cooperation issues. The strategy recommended here for Tajikistan is to concentrate on domestic problems of which there are many with attractive environmental prospects.

With Gorno-Badakhshan's territory better suited to “mountain-development donors” and their NGO collaborators, ADB activities will be directed at Khatlon, Direct Rule Districts and Sukhd that offer the balance of land topography and water utilization with the greatest scope for environmental improvements. Further narrowing of the geographical focus will have to take

place in due course. Assessment of scope for socially efficient interventions rather than existence of a suitable “empty slot” must guide ADB’s choice of assistance locations.

As to the complex regional environmental issues, Tajikistan’s environmental strategy should not, and need not, be conditional on solutions to them. ADB’s support for regional environmental concerns needs to distinguish more carefully between (1) political issues (such as much of the Aral Sea water-sharing discussion or the water-energy deliberations), (2) technical responses to transboundary problems; (3) knowledge- and experience transfer across national boundaries; and (4) the rest. The strongest case for structuring environmental assistance as regional (rather than national) is clearly in the cases 2 and 3. In Central Asia, support in case 1, with its mixture of political and technical considerations, has generated disappointingly modest returns for donors’ support so far despite the size of potential efficiency and environmental gains involved. A separate *Central Asia Regional Environmental Analysis* deals with regional questions in detail.

Below, the environmental strategy described above is supplemented by (a) a brief account of the environmental dimensions of several projects and activities already included in the Country Strategy and Program; and (b) opportunities that go beyond the text of CSP. In the former case, they constitute a form of CSP’s technical endorsement together with suggestions about how to fully explore the environmental potential of proposed CSP activities. In the latter case, they are to be understood as logical extensions of the Country Environmental Analysis. Even if ADB cannot address the priorities identified on its own given various constraints placed on the overall scale of ADB lending, they are a reminder of the sort of environment-related projects that would deserve to be financed by others (or by ADB in due course or in the event of CSP changes). They also point to the areas where ADB in its wider role as an important sustainable-development partner needs to continue to consult with other donors and maintain its technical competence. Like CSP itself, the opportunities described below are divided into (a) lending products and (b) non-lending products and services.

C. Non-Lending Activities to Create an Enabling Framework

1. Improved Management of Non-irrigated Lands

It is on the fringes of irrigated farms and on sloping lands—including pasturelands and areas officially classified as forestland-- where many changes are taking place in Tajikistan. Policies concerning the use of such lands are at present inconsistent, and the mandates uncomfortably divided among MOA, SCLM, and MWRLR. Subjects such as pasture management, a vital component of land- and landscape management, have been left largely unaddressed in Tajikistan against all evidence of their importance. The environmental and economic importance of sustainable management of such areas is clear but formulation of policies and approaches suitable for new (and still evolving) institutional and grass-root circumstances lags far behind the attention given to irrigated areas. Technical assistance proposed in the CSP in support of two investment projects targeting rural development (i.e. *Strengthening Local Government Agencies in Rural Development* and *Rural Enterprise Development*) could be enhanced by inclusion of the above considerations.

2. Improved and Coordinated Environmental Policy-making

Thanks to ADB’s TA 3614 and a number of donor-funded projects linked to international environmental conventions, certain functions of the Ministry of Nature Protection at the central level have been strengthened. Paradoxically, MNP’s policy-making and co-ordination roles look

as weak now as they did a few years ago. There is, first, a clear lack of tradition and ability to support the formulation of policies and programs by economics across all levels of MNP. Tajikistan badly needs exposure to that way of approaching environmental issues. Second, a situation exists in Tajikistan at present where a number of environmental strategic and planning documents are being (or have been) prepared largely in isolation from one another. Third, the work done so far has largely by-passed the country's budget and finance authorities. Advisory assistance that would help bring together these disparate activities and create a unified mid-term direction for the environmental management in Tajikistan supported by donors in a coordinated manner is needed.

3. Improvement of Rural Energy Supply and Use

The *Power Rehabilitation Project* (PRP) included in the CSP has a well-defined and important objective of improving the reliability of the power distribution system. The post-independence conversion of urban households from central heating and compressed gas to direct electricity heating and cooking has made rehabilitation of the aging distribution network a clear priority. Major energy-related environmental impacts, however, are experienced not in towns but in the countryside as the former reliable electricity supplies and subsidized provision of coal and gas to rural households have collapsed and the pressure on substitute fuelwood resources increased. The first-best solution of the problem (conclusion of international energy agreements that would allow Tajikistan to sell more of its summer hydropower and import more power in winter to satisfy all energy needs including the rural ones) may not be attainable for a long time and in the meantime the problem of rural energy should be addressed. It may not be wise to dilute PRP's objective and add rural energy issues to it. However, it is important to place the rural energy provision higher on the policy agenda than it is now. Advisory technical assistance to formulate efficient responses may be well worth considering should further TA or co-financing resources become available. The TA would consider options such as improved transport of LNG or CNG and coal, renewable energy possibilities such as biogas digesters, mini-hydro, wind and solar power, various rural grid rehabilitation options, as well as the range of policy instruments potentially available to influence outcomes.

D. Investment Opportunities (PPTAs and Loans)

The number of CSP investment candidates initially identified by individual ADB divisions was reduced with the late-in-the-day disappearance of the social sectors from the proposed program. The environmental significance of this development will depend on whether concerns highlighted in this report in areas such as urban water supply and sanitation can be expected to be adequately addressed by ADB's development partners, and whether ADB will retain a technical ability to remain engaged in a meaningful dialogue concerning these issues.

No new, environment-only, investment projects are proposed for the assistance program. This is because (1) some candidates (e.g., Second Power Rehabilitation) promise to deliver significant, albeit indirect, environmental benefits, and (2) good opportunities exist for incorporating environmental considerations into the design of the majority of remaining projects to further enhance their intended impacts. This is so in the case of:

1. Water Resources Development and Rehabilitation

The centerpiece of the recently approved (2002) multi-component *Agriculture Rehabilitation Project* (ARP) was irrigation rehabilitation and attention to increased productivity on cotton farms. Cotton remains vital to Tajikistan and the emphasis in the design of ARP on

improved financial viability via greater irrigation efficiency remains sound. So does the concern with further reforms of water management and electricity pricing (for pumps) both considerations vital for sustainability of irrigated farming in Tajikistan. The new project should retain its multi-component nature and target environmental problems such as salinization of irrigated lands. Nevertheless the balance of the proposal's cost could shift towards rural water supply rehabilitation and measures to reduce water-borne diseases. To make this possible, a more aggressive and less conventional search for sources of grant co-financing would be necessary.

2. Rural Development

The CSP contains two investment proposals addressing rural development [*Rural Development Project* (RDP) and *Rural Enterprise Development Project* (REDP)]. Both projects envisage a wide range of yet-unspecified interventions that once again (and rightly) seek to combine the objectives of improved livelihoods with the goal of making rural activities sustainable. Viewed from an environmental perspective, the design needs to acknowledge potential threats to sustainability other than water mismanagement, namely the human pressure on sloping lands adjacent to irrigated areas. Attention to irrigated farming pursued under the Water Resource Development and Rehabilitation Project needs to be complemented by action in such adjacent areas. The design should preferably be watershed-based, and incorporate measures such as sustainable livestock development, planting of fuel wood trees or even micro-hydroelectricity development. Promotion of rural water supply rehabilitation and measures to reduce water-borne diseases (e.g., improved waste management in rural areas) recommended under the Water Resource Development and Rehabilitation Project should have place also in RDP and REDP.

3. Urban Environmental Improvement

With the deletion of social sectors from the country program, dictated by macroeconomic and donor-coordination reasons, no investment project is currently envisaged that would address the serious problems of urban water supply, and wastewater treatment and sanitation. Yet, ADB-commissioned *2003 Tajikistan Urban Environmental Profile* provides compelling evidence of the serious health and other consequences of the urban water- and waste infrastructure deterioration. The scale of the unfinished (or not-yet-started) policy agenda is also known and few doubt the importance of reforming the pricing and management of the crumbling networks. ADB should remain intellectually engaged and informed about developments in the above sub-sectors in the event that changes take place in the “division of donors’ labor” of availability of grant funding in the social sectors.

II. INTRODUCTION

1. ADB's revised business practices place emphasis on the preparation of upstream sector road maps and thematic analyses as fundamental elements of a sound country strategy formulation. Country Environmental Analyses (CEAs) provide the background necessary for informed decision making on environmental constraints, needs and opportunities in the country concerned. CEA is an input into the Country Strategy and Program (CSP). It is initiated ahead of the CSP and continues throughout CSP's preparation and finalization. The current document is the first CEA prepared for Tajikistan and is a component of the 2003 CSP for that country. The principal objective of the environmental strategy is to better integrate environmental considerations into the ADB's core mission of poverty alleviation.

II. BACKGROUND

A. Overview: Environmental Strategy in Support of Economic Development

2. Tajikistan is the poorest of the FSU Central Asian countries.¹ At the turn of the millennium, 83% of the residents lived below the official poverty line. To a large extent, Tajikistan relies on the remittances of more than a million Tajiks currently working outside the country, mainly in Russia, Iran and Turkey.² Foreign aid accounts for the greater part of the public investment program.³ The breakdown of the USSR and Tajikistan's independence exacted more of an economic price here reflecting the country's strategic location (and a costly civil war between 1993 and 1996), and the degree of dependence on the old production patterns that have proved difficult to modify.⁴ Added to these and other problems of economic transition common to all Central Asia republics countries are other, special, factors. Physical vulnerability caused by extreme mountainous topography and a location along the seismic belt is foremost among them. Low percentage of flat arable land (about 5% of the country's total) contributes to another type of vulnerability, namely that related to the maintenance of agricultural productivity and food security.⁵ High population growth rate, a growing percentage of

¹ Based on World Bank 2002 data of gross national income per capita.

² Using ethnicity-based population data routinely compiled throughout FSU, of the official 2000 total of Tajikistan of 6.1 million, the largest groups were Tajiks (80.0%) followed by Uzbeks (15.2%), Russians (1.2%), and Kyrgyz (1.2%). In 1989, the percentages were 62.3, 23.5, 7.6 and 1.2 respectively. The most pronounced declines in Tajikistan's population since independence, apart from that of the Uzbeks and Russians, occurred among the Tatars, Ukrainians, Germans, Koreans and Kazakhs. The Russian outmigration has been mainly an urban phenomenon with loss of qualified manpower as a consequence; the Uzbek outmigration reflects principally nationality "trading" in the ethnically mixed Fergana Valley. Apart from ethnicity-based population movements, there have been important rural-urban shifts as well as movement within rural areas. Many rural residents filled the void left by outmigrants, in some cases exacerbating urban problems through imported rural notions of waste management and animal husbandry. Within rural areas a move into lower hills has taken place with major environmental impacts described in the text. There have been some other impacts, related mainly to insufficient fluency in the increasingly dominant Tajik language among some minorities that make it more difficult for them to voice their cultural and economic concerns (see GOVERNMENT OF TAJIKISTAN .2002b. for a discussion of these and other related issues).

³ Projected foreign aid commitments for the period 2001-2003 are about three fourths of the total planned PIP for the corresponding period of \$550 million equivalent.

⁴ Of all FSU countries, Tajikistan offers the most dramatic example of de-industrialization. With only a few exceptions (hydroelectricity, aluminum), most other industrial output in 2000 was less than half of the 1990 levels and in some cases much lower still. The same goes for most branches of transport. In agriculture, the only increase was registered in grain and potato production (at the expense of all else), a sure sign of major livelihood concerns.

⁵ Despite recent increases in grain production (see footnote 4), Tajikistan still produces only about 80% of current consumption, the deficit of some 100,000 tons p.a. covered by imports and WFP grants.

rural population (from 68% in 1990 to 74% of the country's total in 2000), and an unusually high share of agriculture in employment (65% of the total in 2000 up from 45% in 1990)⁶ complete the picture. In these circumstances, it is not an exaggeration to say that natural resources and environmental considerations are at the heart of the country's economic development and key to its future.

3. Despite all of this, Tajikistan is far from being the proverbial basket case: Official statistics do not capture the informal economy and almost certainly overstate the depth of poverty.⁷ The country has a literate, young and multilingual population, room for agricultural diversification, considerable eco-tourism potential and old traditions of commerce. Functioning markets have emerged fast in some cases (e.g., Dushanbe housing). Removal of administrative barriers to foreign trade alone could radically transform the country's economic prospects. With the right policies at home, the flow of remittances could quickly become an engine of growth.

4. The abundance of water cast Tajikistan (along with Kyrgyzstan) in the role of a supplier of water to the irrigated agriculture of the whole of Central Asia, managed as a single system during the Soviet days, as well as a major producer of hydropower. Political independence radically changed the situation as optimization at the country level came into conflict with the previous pattern that operated without any reference to national boundaries. All of Central Asia is grappling with this issue and the progress has been much slower than expected early in the decade despite major inflow of donor funds.

5. During the early phases of transition, disrupted furthermore by civil war, the issues of sustainable development and environmental safeguards took a back seat. Not surprisingly, a number of serious environmental problems emerged. They included widespread degradation of soil, land, biota and water, decreased control and monitoring of most land-based activities, worsening water supply infrastructure and municipal pollution and weakened industrial pollution control. With privatization and break-down of collectivized agriculture, some of the public health functions formerly performed by *kolkhozs* and *sovkhozs* virtually ceased, adding to the pressure on livelihoods in rural areas.

6. Restoration of internal peace in 1997 was a major achievement that made it possible for the Government to re-focus on economic development. In the process, and with increasing donor support, environmental considerations have re-entered the development debate and efforts. Despite this support, much more remains to be done.

B. Principal Environmental Concerns

7. A comprehensive ADB-commissioned account of the principal environmental problems of Tajikistan ("Tajikistan Environmental Profile") was prepared in 2000. A number of other documents are becoming available (e.g., Tajikistan State of the Environment reports, action plans under environmental conventions, and several others⁸). Even if these accounts are handicapped by gaps in data coverage that emerged with independence, this material taken together provides an adequate basis for a policy- and program-oriented assessment such as this one.

⁶ Virtual collapse of the industry sector (in 2001 still accounting for only 9 % of jobs, down from 21 % in 1990) helps explain these numbers.

⁷ This is so despite a 25 % addition by the State Statistical Office to the formal GDP. See Eilat and Zinnes (2000) for the methodology of estimating the importance of the informal sector.

⁸ The reader is referred to the list of references for details.

8. The Tajikistan Environmental Profile lists the following as major environmental problems the country faces:

- Natural disasters including drought and earthquakes.
- Land degradation.
- Deforestation and desertification.
- Inadequate or contaminated drinking water, and waste treatment.
- Deterioration of wildlife and protected areas.

These priorities have been endorsed in most other government documents. They are briefly reviewed below together with several additional ones, in particular, urban considerations that have raised concern.

1. Natural Disasters

9. Tajikistan's mountainous and unstable geography in combination with variable climate explain a high incidence of small-scale but high-impact natural calamities such as floods, earthquakes and landslides. Between 1991 and 2001 over 66,000 people were made homeless by natural disasters. During the first nine months of 2002, 200,000 people were affected by 65 small or mid-scale natural disasters. There are larger-scale potential risks also: Lake Sarez, high in the mountains of GBAO, created as a result of an earthquake, presents a major risk of collapse and wide-spread flooding.⁹ Among other things, these factors affect the design and economics of infrastructure projects, reinforce the case for erosion control, and for flood forecasting and protection activities.

2. Land Degradation

10. Always present, the seriousness of the problem has visibly increased during the last decade. It includes a range of impacts. (1) Salinization, exhaustion and degradation of irrigated lands reflecting poor water- and other management practices in agriculture; cotton yields, a proxy indicator of the productivity of irrigated lands have been steadily declining (see Table 1 below). Expansion of irrigation into new areas (the Asht, Samgarm and Tashrabad massifs and

Table 1: Area of Irrigated Land Affected by Salinity

Degree of salinity	Low	Medium	High	Total
Irrigated land affected (ha)	21,032	73,555	21,497	116,200
Irrigated land affected (%)	3	10	3	16*
Estimated loss in cotton yields	20-30%	40-60%	>80%	

*Total of 725,000 ha of irrigated land. The text makes it clear that the acreage actually irrigated in Tajikistan is much lower, i.e. less than 500,000 ha, mainly due to the deterioration of irrigation infrastructure as well as the salinity build-up. See Table 2 below for relevant totals.

Source: State Commission on Land Management without date, reproduced in UNDP (1993).

⁹ Discussion of the risk of river-blocking landslides is the single largest section of the initial (1999) draft NEAP. ADB's Loan 1902 (Emergency Baipaza Landslide Rehabilitation) is an illustration of the topic's relevance for ADB.

Yavan and Beshkent valleys) without adequate drainage has exacerbated the problem of rising water table and secondary salinization necessitating expensive emergency interventions.¹⁰ In a country short of irrigated land, several thousands of hectares of such lands are being lost to farming in a single year because of salinity. The total affected by salinity is in excess of 115,000 ha, i.e. about a fifth of all irrigated land.¹¹ Neglect and damage to irrigation and drainage structures during the civil war have further worsened the situation; (2) Wind/water erosion. Trees and brush in many parts of Tajikistan have been cut for fuel because of the cessation of coal and natural gas supplies to the countryside after 1991 and lower availability of winter electricity. The problems of upland degradation in Tajikistan cannot be solved without attention to winter supplies of energy.¹² Field protection strips, common elsewhere are not found in Tajikistan. Different estimates have been produced of the pattern of erosion and although inconsistent and hard to compare, they agree that soil erosion is widespread and getting worse.¹³ (3) Pastureland degradation: Some 3 million hectares, i.e. about 85% of total areas of pastures, are said to be degraded as the previously common seasonal use of high elevations is being replaced by year-round use of lower lying lands. Complex interactions involving grazing pressure and the productivity of pastures are yet to be properly evaluated with the help of fresh data but there can be little doubt about the generally worsening situation. Most aspects of land degradation are reinforced by the decline of dedicated research and monitoring support described elsewhere in the report. Absence of an up-to-date picture of land use is one of the major challenges to policy.¹⁴ Besides underestimating the area of land actually farmed, official data overestimate the forest cover, and the true extent of areas accorded effective protection (see Table 2).

¹⁰ Including ADB Loan 1852 (Emergency Restoration of Yavan Water Conveyance System)

¹¹ See Table 1 of Appendix 2 for more details.

¹² The problem was minimal during the Soviet times because: (1) Tajikistan was supplied with coal and petroleum products to meet the winter energy needs in exchange for maximum production of hydroelectricity during the summer; and (2) There were fewer people in the uplands and existing villages were connected to the grid. This is no longer true of many post-1991 upland settlements.

¹³ The reader is referred to the 1992 National Program of Action to Combat Desertification for details. See also a selection in Appendix 2.

¹⁴ The environmental impacts of institutional reforms in agriculture, in particular the still incomplete privatization of farm land and restructuring of pastureland, are yet another important and poorly documented aspect of recent development. Briefly (using 2002 data of the State Statistical Office), the 600 or so *kolkhozes* and *sovkhozes* of the late Soviet era in Tajikistan have become: (1) private (*dekhan*) farms (39% of all agricultural lands in 2001); (2) about 150 *goskhozes* ("government farms") mainly in activities like seed multiplication, and animal breeding (30%); and (3) other types of enterprises (joint stock companies, post-Soviet cooperatives or farm groupings (*mezkhkhozes*)) accounting for the rest. Among notable trends since 1991 has been a decline in the area of cropping land from about 800,000 ha in 1991 to about 500,000 ha in 2000 (see Table 2) and 450,000 ha in 2001, reflecting mainly the deterioration of the irrigation and drainage infrastructure. Extension of farming into lands not officially classified as arable (hilly lands, broadly speaking) is not captured in the official statistics but is obvious to any casual visitor. Many parameters of agriculture policy and its reform (e.g. taxation of different crops, in particular the special regime applied to cotton, the irrigation water tariffs, the de-regulation of agro-processing especially cotton ginneries, access to farm credit, and others) exercise powerful effect upon the use of land with its environmental repercussions. Reforms in the cotton sub-sector, in particular, have been slow, perpetuating inefficient use of water and land (in those instances where gross margins on non-cotton crops are far superior to those on cotton) and indirectly contributing to the movement of many cotton farmers disadvantaged by existing policies back into the hills.

Table 2: Land Classification and Land Use, Tajikistan 1990-2000

Land Classification	Official Totals ('000 ha)		Direction of Actual Use
	1990	2000 ^a	
All Land	14,254	14,254	
1. Potentially usable including "reserve land"	9,573	8,389	
1.1. agricultural land	4,431	4,572	
1.2. forest land	1,800	1,800	
1.2.1. of which actually under forest ^b	392	401	Total area under forest probably lower than stated in view of post-1991 destruction. See para. 12.
2. Land unsuitable for agriculture production ^c	4,681	5,865	Increase reflecting a more realistic approach to classifying suitability. Further increase after 2003 with the creation of the Tajik National Park.
All Agriculture Land	4,431	4,572	Totals actually used are probably higher as some forest lands are used for farming
1. Arable land area actually farmed	815	738	Based on field visits, land is farmed outside areas officially designated as arable land as a result of the reverse flow of population into hills
irrigable			
already irrigated	709	715	
	565	506	Totals do not capture the decline in productivity of irrigated land through salinity build up
2. Perennial crops ^d	91	101	Totals do not capture de facto abandonment of many orchards and vineyards
3. Fallow	19	22	
4. Hay / fodder fields	27	24	
5. Pastures	3,471	3,686	Totals do not capture the degradation of pastures and are serious overestimates of actual use
5.1. irrigated	4	3	

^a Small differences in the totals are found in the three official sources cited. Here the first-listed is used. The differences do not fundamentally change the overall picture.

^b conifers account for almost 40% and pistachio for about 20% of the total. Statistic of actual forest cover must be among the least unreliable in Tajikistan at present. The State of the Environment reports add to the total of 400,000 ha or so of existing forest another 150-250,000 ha of fragmented forest.

^c includes 192,000 ha used by industry, for roads, defense etc, 42,000 ha of settlements and about 30,000 ha of water bodies.

^d Includes fruit trees, vineyards, etc.

Sources: *Environmental Protection in Tajikistan*, State Statistical Office (2002); *Agriculture*, State Statistical Office (2002), and *Statistical Yearbook 2002* (State Statistical Office (2003)).

3. Deforestation and desertification

11. All forests of Tajikistan are protection forests i.e. their felling (other than sanitation cutting yielding some 7,000 m³ of fuel wood p.a.) is forbidden. Yet illegal cutting of trees increased rapidly during the 1990s. As with pasture degradation (and often in association with it), complex but generally adverse impacts on soils, primarily soil erosion, follow.

12. Besides the loss of mountain forest, since 1950s,¹⁵ more than 300,000 ha of native *tugai* (*Populus pruinosa*, *Elaeagnus angustifolia*) forest have been converted to farming or destroyed in the lower elevations of Kulyab zone, Vakhsh valley and along the banks of Syr-Darya in in Sukhd leaving only islands of such vegetation in places such as the Tigrovaya Balka *zapovednik*. Destroyed the hydrological function of these areas, many of them have been affected by salinity.

13. During and immediately after the civil war, significant movement of population took place into lower mountain areas (from 20 to 30 degrees, but sometimes steeper) of Kulyab, Karategin, Badakhshan zones, Zarafshan river valley, reversing the forced movement of people from the mountains into collectivized agriculture in the early years of the Soviet period. In the Hissar range, along the Vakhsh, Karategin, in Zarafshan, Khazratisho and other ranges, maple, juniper and relic nut forests have been cleared to make way for agricultural crops and to provide household fuel. The pistachio (*Pistacia vera*) zone suffers from felling most of all, the trees cut for construction use and as firewood, a powerful illustration if one is needed of the impact of the disruption of markets for many agricultural products of the Soviet period (fruits, wine, nuts) and their replacements by life's necessities such as grains. The process has been a lifesaver but something of an ecological disaster with accelerated soil erosion, destruction of a vegetative cover, and uncontrolled expansion of cattle after the declines of the herd during the civil war period. In lower elevations such as Shaartuz and elsewhere in desertification-prone areas district, sand-fixing trees such as saxaul (*Holoxylon sp.*) are also under attack.

4. Low Access to Piped Water and Water Contamination

Halving the number of people without access to piped water could cost upwards of \$200 million to 2015. Such annual spending levels are equivalent to more than 1% of current GDP....(in) a country where public expenditure in 2002 totaled only 16% of GDP.
(National Human Development Report 2003, UNDP)

14. Only about 57% of Tajikistan's population is served by piped water, the percentage in rural areas around 40%. Only 17% of the population is connected to a sewage system. In rural areas, the coverage is as low as 2%. Uncontrolled discharges of waste into rivers have affected the quality of irrigation water and groundwater, as well as drinking water. The health repercussions of this (as well as other factors) have been serious (see Table 3). On the other hand, there has been a reduction in the use of fertilizers and agro-chemicals (see Appendix 2 for details) and their concentrations in soils and water. Their concentrations are almost certainly lower than the still-much-quoted pre-independence data would indicate but this trend has come at the cost of economic hardship and adverse impacts of lowered incomes. Municipal and

¹⁵ According to the Forest Agency, the forest cover in 1933 was 23% (against the present 3%).

uncontrolled village discharges generate the greatest volume of water contaminants while ore-processors and several industrial plants account for most toxic discharges.¹⁶

Table 3: Incidence of Selected Diseases, Tajikistan (1991-2000)

Type of Disease	1991 (thousands of cases)	2000 (thousands of cases)	Percentage Change
All population:			
Infectious and parasitic diseases	264	672	+154.5
Diseases of the digestive system	31	265	+763.0
Respiratory tract diseases	992	326	-204.3
All children (0-14 years)			
Infectious and parasitic diseases	157	434	+176.4
Diseases of the digestive system	23	141	+513.0
Respiratory tract diseases	593	164	- 262.6
Rural population			
Acute intestinal problems	30	71	+136.7
Typhoid	2	3	+ 50.0
Respiratory tract infections	220	296	+ 34.5
Malaria	0.2	14 ^a	>1000

^a WHO believes this to be an underestimate. UNDP (2003) uses a figure of over 300 per 100,000 people in 2000, or about 18,000-20,000 cases.

Source: *Environmental Protection in Tajikistan*, State Statistical Office (2002).

5. Deterioration of Wildlife and Protected Areas

15. Tajikistan is home to unique kinds of flora and fauna. Combined with spectacular geography, the country is a nature treasure trove and a promising eco-tourism destination. However, the pressure on renewable resources described earlier has represented an attack also on this treasure and the biodiversity it contains. Wildlife habitats are being reduced in all regions by a mixture of factors. Particularly impacted are several "Red Book" species.¹⁷ Cutting of trees and brush, over-grazing, poaching and human intrusion into wildlife areas in general (especially widespread during the civil war) have all been factors in this process. A 2.5 million-ha Pamir National Park was created last year but it exists on paper only for the time being. There are 4 nature reserves (*zapovedniks*) totaling about 170,000 ha and 13 nature refuges (*zakazniks*), totaling over 300,000 ha, all of them established during the Soviet times. They are poorly known among the Tajik population and Government officials alike, some are in major need of rehabilitation following the damage sustained during the civil war, and many are kept functioning largely because of the dedication of a small number of individuals. Two (Romit and Dashtijum) have recently attracted bilateral and GEF funding. Small support has been forthcoming from international NGOs.

¹⁶ Interested reader is referred to pp. 39-41 if ADB (2001) for a more detailed description of the pattern of water contamination. Paradoxically, Tajikistan's drinking water standards are stricter than those of the former USSR or those recommended by WHO or European Union.

¹⁷ "Red Book" is a listing by the World Conservation Union of taxa under the threat of extinction.

6. Environmental Problems Associated with Mining and Industrial Pollution

16. Some 100 mines are in operation in Tajikistan producing forty different kinds of minerals (including gold and uranium) and coal.¹⁸ The dramatic decline in industrial production in the 1990s has reduced significantly the total number of industrial polluters¹⁹ and the total amount of industrial discharges. No recent systematic evaluation of enterprise-level discharge data exist but partial evidence speaks of continually poor and often deteriorating performance of surviving enterprises (see Appendix 2 for details). Waste disposal is a particularly thorny issue. Certain types of toxic or hazardous waste are unsafely stored awaiting disposal (e.g., fluorescent tubes) or disposed unsafely.²⁰ Four industrial enterprises, namely the Tajik Aluminum Works (TADAZ), Isfarine Metallurgical Works, Yavan Electrochemical Enterprise and Vakhsh Fertilizer Plant are the major polluters with the first-mentioned embroiled in a pollution-related transboundary dispute with Uzbekistan. As in other CARs, accumulated waste from the previous era, especially certain mine tailings, are raising concerns about surface and groundwater contamination. Discontinuation of much environmental monitoring during the last decade has made it difficult to gauge the long-term impact on public health of various industry- and mining-related contaminants and the seriousness of this threat.

7. Urban Environmental Problems

“Water losses in Dushanbe are sufficient to provide the entire water demand for a city like Berlin.”
[Kloesch (2003), p. 15]

17. Provision of safe drinking water has become a major concern in all cities and towns of Tajikistan (see para. 14 above).²¹ Whether based mainly on groundwater (in most towns) or surface sources (Dushanbe), the physical infrastructure is oversized, deprived of maintenance, and crumbling. Water network losses are estimated at between 40% and 70%. Wasteful use of water in general coexists with serious shortages. Disruptions of supplies and water contamination have become facts of everyday life in Dushanbe and other towns. Absence of metering and a meaningful cost recovery contribute to a huge gap between maintenance demands and the funds generated, as well as resulting in rates of gross per capita water use (or water loss, more accurately) several times those of Western Europe.²² Wastewater treatment plants are in varying stages of reduced operability or have closed down. The term management can hardly be applied to solid waste, inadequate and often unauthorized dumpsites or waste-burning common. If the situation is less worrisome on the air quality side, this is largely a

¹⁸The production of coal has declined from almost 500,000 tons p.a. in 1990 (mainly in Sukhd *oblast*) to less than 10 % of this amount at present. Similar trend applies to hydrocarbons of which Tajikistan was never a major producer (144,000 tons of crude and about 100 million m³ of gas in 1990).

¹⁹Officially there were 48 industrial enterprises and 3890 registered pollution sources in Tajikistan in 2000.

²⁰ADB (2001) quotes figures of stored waste: 200 million tons of mining waste, 20 million m³ of liquid waste and 25 million m³ of solid waste, as well as providing a somewhat loose estimate of 1.4 as a percentage of such wastes that are toxic, mainly those generated by the non-ferrous mining and primary processing industry. These figures give an approximate idea but are clearly insufficient to formulate any plan of action in this domain.

²¹Dushanbe accounted for about a third of the total urban population of 1.6 million in 2000. Khujand's population was 147,400, Kulyab's 81,300 and Kurgan Tyube's 61,200. There were 13 towns with a population of between 20,000 and 60,000. Eight of these (Tursunzade, Yavan, Isfara, Nurek and four others) are former “company towns” common throughout FSU.

²²Tajikistan's average expenditure on urban water supply (i.e. amount of user fees and budget support combined) of US\$0.012 per m³ delivered contrasts with figures hundred times bigger in most countries of Western Europe. It speaks of huge under-investment in the supply infrastructure.

reflection of the involuntary de-industrialization (including a substantially reduced volume of road transport)²³ than successful policies.

8. Transboundary Environmental Issues

18. Tajikistan's rivers feed into the Amu Darya and the Syr Darya rivers, and through them and the activities of its neighbors, Tajikistan is linked to the Aral Sea and its environmental fate. That fate is well known. The post-independence disruption of energy and water supply agreements has changed the pattern of water storage and releases by Tajikistan, forced to conserve more water for its own winter energy needs. The inability so far to achieve a more rational utilization of the regional energy-water allocations that would mimic the pre-independence pattern of resource flows has been a major factor contributing to the Aral Sea decline.²⁴ Dushanbe is the present home of the Executive Committee of the International Fund for the Aral Sea and Tajikistan has a good opportunity to influence one of the thorniest trans-boundary issues of Asia. Water-related environmental issues on a smaller trans-boundary scale are found in Fergana Valley. Emissions of pollutants by TADAZ (see above) have led to protests by Uzbekistan but the emission performance of TADAZ has improved somewhat recently.

C. Government Policies

1. Policy Formulation State Environmental Program for the Period 1998-2008

19. The current basis of environmental management in Tajikistan is the State Environmental Program for the period 1998-2008, approved in 1997.²⁵ The formulation of the Program drew on the experience of earlier, and smaller-scale, socio-economic plans for the Kulyab district (until 2000), and for GBAO. The Program obligates ministries and offices, heads of administrations and mayors of cities to improve environmental conditions and ensure sustainable development of the country during the period of economic transition. It calls for adoption of modern environmental standards for water, air, soil, solid waste, toxic wastes, and noise control, based on maximum permissible amounts. Standards are to be supplemented by discharge permits. The Program is accompanied by broad ecological zoning, dividing the country into ten zones (Syr-Darya, Northern Turkestan, Zeravshan, Gissar, Vaksh, Dangarin, Khulbak-Kulyak-Tchube, Karategin-Baldzhuan-Shurobad, Garmo-Muksu-Balandkiik, and Badakshan **(see Map 2) ???**)

20. The principal directions of the Program are improvement of (i) the environmental status of agricultural lands, (ii) state of water resources, (iii) vegetation including forest resources, (iv) fauna and flora, (v) recreational possibilities, (vi) air quality, (vii) utilization of mineral resources, (viii) public health, and (ix) environmental performance of industry and construction. The Program calls for economic and other analyses of environmental problems and economic mechanisms that are to be used for the purpose of environmental management including: (a) limits on the use of resources, (b) payment for use of natural resources, and (c) pollution

²³ Appendix 2 summarizes available data on transport volume trends. Despite massive reduction in transport volumes, mobile sources were estimated to account for two thirds of total air emissions in Tajikistan by volume. With the exception of particulate matter, Tajikistan's ambient standards for air are stricter than those of WHO.

²⁴ This is not to argue that the pre-independence system of water-energy management in Central Asia is a perfect example to follow. It was, after all, during the Soviet period that the Aral Sea decline began.

²⁵ Belated attention to environmental matters was noticeable in the years immediately preceding the collapse of the Soviet Union. In 1990, the Council of Ministers of the Tajik SSR adopted a resolution on "Necessary measures to reverse the environmental trends in the Tajik SSR." In the same year, "The concept of environmental protection and natural resource use in the Tajik SSR" was unveiled by the Council of Ministers. Both initiatives were soon rendered obsolete by the rapid political and economic changes on the ground.

charges. Any user of a natural resource – including the assimilative capacity of air, water, and soil – is to pay for that use in an amount as determined by the Government. The program calls also for better monitoring, improved “environmental expertise” (EIA),²⁶ and improved financing of environmental activities. There are sections dealing with environmental education, information, environmental centers and environmental legislation. State natural sanctuaries and natural reserves for perpetuation of rare and threatened species are to receive special attention.

21. “Ecological expertise” is to be carried out by state bodies to consider the environmental impact of any planned economic or other activity²⁷ – state or private – that can affect the environment. Conformity with the expertise results is the responsibility of the State sanitary inspectorates, industrial construction inspectorates and mountain supervision inspectorates. Public and civic environmental organizations have the right to participate in planning and implementation of EIA and to appeal economic development decisions.

22. The State Program endorses the concept of personal liability for environmental damage and for compensation by the persons or entities responsible for environmental damage.

2. Policy Formulation II: Other Plans and Programs

23. A *National Environmental Action Plan* (NEAP) was first considered in 1999 but its preparation did not start in earnest until 2002. The definitive version is yet to be adopted. The Plan is to incorporate an earlier *National Environmental Hygiene and Health Action Plan*. Several strategic documents in support of international environmental conventions have been completed in the last two years. They include the 2002 *National Program to Combat Desertification*, and 2003 *National Report under the Climate Change Convention*, and *National Biodiversity Action Plan*. Environmental considerations have entered several other important policy documents including the 2002 *Poverty Reduction Strategy Paper*. *Government Program for Environmental Education to 2000 and Prospects until 2010* dates back to 1996. The *National Sustainable Development Report Rio+10* was presented to the 2002 World Summit for Sustainable Development in Johannesburg.

24. Economics is beginning to play a role in environmental management. Tajikistan, the most water abundant country in Central Asia, has gradually increased the price of irrigation (but not municipal) water.²⁸ The importance of further raising electricity tariff is accepted by most senior administrators and has become a subject of ongoing dialogue with IMF and ADB. A much improved pricing of land, based on the 2002 Decree on the Pricing of Land Resources recognizing the differences in the underlying value of different land categories, is about to enter implementation. Much work nevertheless remains to be done to dispel the common view that

²⁶ Considerable confusion exists in Tajikistan regarding the (older, Soviet-times) concept of “environmental expertise” (EE) and its relationship to EIA, as understood by IFIs and many others. There are no fundamental reasons for considering the two to be different. Instead of unifying the terminology and understanding, recent steps have been in the direction of superimposing EIA on the EE concept instead of suppressing one of them. ADB’s TA 3614 may have missed an opportunity to help bring about such simplification. The translation of the Russian term “ekologicheskyy” as “ecological” is another common source of misunderstanding. In most cases, the correct translation is “environmental”, in its wider sense.

²⁷ The wording (“activity”) leaves open the question of how far beyond individual projects the scope of EIA is supposed to extend.

²⁸ The current price of irrigation water is to roughly treble this year to \$0.35 per m³ considered sufficient to ensure substantial cost recovery in irrigation and make it possible for MWLR to pay for the electricity used to power the pumps that supply about a third of all irrigation water. The base electricity tariff, on the other hand, continues to be below cost and the collection rate in industry continues to be very low. Urban water in Dushanbe is also seriously underpriced and much of it unmetered. [see Koelsch. 2003]

pricing of natural resources and cost recovery are appropriate for, and possible only in, high-income countries.

D. Institutional Developments

25. Shortly before the start of civil war, in 1993, Tajikistan drafted the first post-Soviet Law on Nature Protection (LNP). The law has been amended twice since, in 1997 and 2002. The Law assigns responsibilities to “specially authorized state bodies of the Republic of Tajikistan”, in practice the Ministry of Nature Protection, and *oblast*, *rayon* and city environmental committees²⁹. Some responsibilities are assigned to local *majlises*. The Ministry has a wide mandate. Its present structure and staffing of the MNP are shown in Appendix 1. In Dushanbe, the Minister is supported by a First Deputy Minister, two Deputy Ministers, and several staff service units, with total staff strength of 54 (see Appendix 1). Approximately 180 people work in the four *oblast* environmental committees, a similar number in the country’s 62 *rayons* and a total of about 60 or so in the environment committees of the principal cities. Under the Ministry are the State Environmental Inspectorate, HYDROMET (meteorology and hydrometry agency with a total of about 600 staff) and several other bodies (see Appendix 1). with their own pattern of staff deployment. Taken all together, there are now 1734 staff on the Ministry’s payroll, with about a third of the total Dushanbe-based.³⁰

26. Other laws and regulations that have implications for environmental management in Tajikistan include the 1992 Regulations about the Ministry of Nature Protection (adopted prior to the passage of the Law of Nature Protection, but never withdrawn), the 1993 Forestry Code, the 1994 Mineral Resources Law and Law on State Sanitation Control, the 1995 Administrative Code (amended in 1996 and 2000), the 1996 Law on the Protection of Air Quality, the 1998 Land Code, the 2000 Water Code, the 2002 Law on Waste, Waste Generation and Waste Utilization, and EIA Law of 2003. Some fifty environment-related implementing decrees and decisions have been issued since 1992, addressing a variety of environment-related subjects such as pollution charge and fines procedures, Tajikistan’s participation in international environmental conventions, regional environmental cooperation, setting up of specialized committees (e.g., National Sustainable development Committee) and others. These and more detailed instructions taken together are the reference framework for policy-makers in MNP.

27. Everyday regulatory activities consist of licensing, inspection, and imposition of fines for infringement of permit conditions or maximum permissible pollution concentrations. In most cases, these activities are conducted by *oblast* and city environmental committees as well as the staff of the State Inspection Service.³¹ In the case of industrial enterprises, the system relies on self-monitoring by enterprises. The actual regulatory performance is poor (see further below).

28. There are other government bodies the mandates and activities of which impact the environment, and whose tasks in turn are impacted by the environmental status. The Department of Environment and Emergency Situations (DEES) of the President’s Office is responsible for informing the President about environmental conditions and emergency situations. The DEES then coordinates the response from the President’s office. The other

²⁹ Three *oblast* environmental committees exist (Sukhd, Khatlon and GBAO) and one for Kulyab zone (within Khatlon). These four committees and their strengthening are the focus of existing plans of the Government to decentralize environmental management.

³⁰ Many staff of the State Inspection Service may be based in Dushanbe but their activities carried out in other towns.

³¹ Duplication of inspection functions by different units of the same ministry is an often-voiced complaint among the regulated as well as those implementing the policy.

government bodies with environment-related responsibilities include the State Committee for Land Management in charge of land allocation, cadastre and land zoning with its Soils Institute (“*Tajikgiprozem*”), Ministry of Water Resources and Land Reclamation (MWRLR) responsible for all problems associated with irrigation and water management, Ministry of Agriculture including its Forestry Agency (until 2002, “*Tajikles*”), Ministry of Health in charge of, among other things, the network of Sanitary and Epidemiological Stations (SESs), Ministry of Industry that coordinates with the MNP environmental protection investments for industrial enterprises and is home to State Mining Agency, and the Ministry of Interior responsible for monitoring and enforcing air quality related to mobile-source polluters. Municipal water authorities (“*Vodokanals*”) are in charge of water supply and wastewater treatment in all *oblast* and *rayon* centers.

29. Several multi-agency committees and working groups exist. They include the National Sustainable Development Commission headed by the Deputy Prime Minister. Originally a working group drafting Tajikistan’s report to the “Rio+10” (Johannesburg, WSSD) 2002 Summit, its mandate is to develop a strategic plan of sustainable development.³² Several working groups were set up in support of drafting of plans and promoting policies facilitating Tajikistan’s compliance with obligations under respective international environmental conventions. In the case of biodiversity, the relevant working group has recently been upgraded to a center with powers to seek donor funding and undertake own projects. Most other policy-related efforts are also undertaken by *ad hoc* committees or working groups with varying degrees of cross-sectoral style of work. The subjects dealt with in this manner have included the formulation of the national poverty reduction strategy, agrarian reform, land protection and several others. The academe plays a role, especially the Tajik National University, Tajik Agrarian University, Academy of Sciences of Tajikistan, and Tajik Agricultural Academy of Sciences.³³ All in all, whether directly or indirectly, considerable number of institutions and individuals in Tajikistan (including NGOs about which more is said later) have something to say about environmental management.

30. The relationships among various organizations related to nature protection are both vertical and horizontal, these links specified in the Law on Nature Protection. Some ministries, agencies and organizations have had particularly close connection with MNP. Among them are the Academy of Sciences, the Tajik Academy of Sciences, Ministry of Water Resources (now MWRLR), State Committee on Land Management and at the local level, the SESs of the Ministry of Health. In other cases, the co-operation has been weak or non-existent and as such, in conflict with the formal provision of Law on Nature Protection. Conflicting delineation of responsibilities and lack of willingness to subordinate own mandates to those of others are considered the main reason. Conflicts or overlaps are noticeable in activities such as wastewater and solid waste management, soil erosion and land degradation control, certain kinds of emergency response, and enterprise inspections.

31. Proliferation of environmental recommendations by various government institutes has been unproductive so far. Numerous recommendations on dealing with environmental problems are developed, but unclear mandates and financial constraints have inhibited implementation of resource protection recommendations. Current lack of clarity concerning the responsibility for

³² At present, however, the Commission has no formal work plan, holds no regular meetings and for all practical purposes, is not functioning.

³³ The Academy has nine research institutes dealing with various agricultural problems. MNP cooperates with the Tajik Agricultural Academy within the framework of the National Environmental Program 1998-2008. The Academy maintains laboratories that study various aspects of agricultural impacts on the environment.

the protection of land, for instance, contributes to a situation where many traditional farming areas and former pasture or tree-crop land are increasingly used for cropping, and where improper land use is causing erosion and general resource degradation.

E. Environmental Management Capacity

32. The economic difficulties of the past decade have had a predictable impact on the capacity of the State to effectively manage the environment. The problems range from poor self-monitoring by the polluting industry (due to, *inter alia*, ageing equipment) to shortage of physical mobility at all levels and continuing incompatibility of monitoring formats across different agencies of the Government that complicates the monitoring task to say nothing of problem analysis.

33. A near-collapse of the Soviet-era monitoring and research network took place in Tajikistan during the tumultuous 1990s. Many of its former staff left the country. Prior to 1990, Ministry of Agriculture's agro-chemical laboratories conducted extensive analyses of the chemical properties of land, waters and plants.³⁴ The existence of laboratories did not necessarily result in satisfactory environmental conditions during the Soviet times and the obsession with numbers characteristic of the Soviet era sometimes masked fundamental "non-number" problems but there is little doubt that much potentially important information was generated and some of it was both practical and of excellent quality. These laboratories are no longer active and even if re-activated, their appropriate functions in the transition-era agriculture would yet have to be determined. Similarly, monitoring of pollution sources by *oblast* environmental committees is not done routinely and adequately because of lack of funding, obsolete and insufficient equipment, and lack of staff skills and experience. Among the laboratories that have survived to this day (on a more modest scale) are only the Sanitation and Epidemiological Stations, the Cartographic and Soils Institutes of the State Committee on Land Management, the *Hydromet* network of MNP³⁵ and some laboratories within the academe.³⁶

³⁴ Before 1990, research institutes, experimental field sites and stations were organized to study the various influences of anthropogenic factors on the use of natural resources. The most successful results were utilized by *sovkhoses* and *kolkhozes*. Applicability of research results from other parts of the then Soviet Union in the local conditions was an important component of these institutions' work.

³⁵ The *Hydromet* network currently comprises 54 laboratories/centers in different parts of the country, down from more than 80 in 1990.

³⁶ It would be wrong, however, to conclude that no information is available. Among the data sets currently generated are (1) *Report on the State and Protection of Land Resources* by the State Committee on Land Management that records information about leaseholder-, *dekhan*, collective and other agricultural enterprises. It combines land statistics, inventory data, and test measurements. (2) *Report on the Economic Use of Nature by Industrial Enterprises*, commissioned under a resolution of the State Statistical Agency and MNP. It is based on the questionnaire returns by industrial enterprises that are subject to the payment of emission charges (and as such kept on an MNP data base). It contains data on abatement expenditure and its structure. (3) *Report on the Availability of Environmental Laboratories* summarizing data from all enterprises and organizations having laboratories, posts, or stations that monitor emissions or pollution either independently or as an integral part of its operations. The report summarizes the numbers, staff, and available equipment in different stations or units, and describes the supervision channels, status of facility certification and the type of monitoring performed in agreement with MNP. (4) *Report on Re-Cultivation of Land, Removal and Use of the Fertile Layer* compiling information from industrial entities involved in mining, industrial, or other activities that affect the land surface (e.g., quarries, open land mining, peat works, trenches, mining areas, sanitation facilities, drilling wells, transport communications, and areas polluted by oil). (5) *Report on Reserve Areas, Nurseries and National Parks* prepared and submitted by the administration of national parks and forest lands that have reserve areas within areas under their jurisdiction. (6) *Report on Protection and Use of Fauna, Flora and Vulnerable Areas* prepared on the basis of monitoring reports carried out by local environmental committees and other monitoring bodies in the territories concerned. (7) *Report on Forestry Activities*, and (8) *Report on Sanitation Felling* prepared by the Forest Agency (formerly Tajikles).

34. Even the scaled-down network faces difficulties. Environmental committees outside Dushanbe have few computers and if they had more, could not afford for the time being the cost of operating them for certain vital tasks such as information sharing through Internet. Environmental committees often lack full sets of environmental regulations and need to be guided on the procedures for imposition of fines on violators of the environmental law. Monitoring of sanitary conditions that can affect public health is inadequate. Whether dealing with forestry, water management, land use, or nature protection, local environmental committees can carry out only a low-level or no environmental monitoring. In brief, implementation of environmental protection activities in Tajikistan continues to be limited by budget constraints, high communication costs, shortages of facilities, and insufficient training of staff in legal and technical aspects. In this, however, Tajikistan is not very different from many other FSU or developing countries. Unlike in the developing countries, the problem is felt more acutely in Tajikistan because of the still vivid memories of how much more secure, advanced for its day, and widespread these activities were before 1990. In the process, a sense is created that all would be well with environmental management in Tajikistan if only the monitoring network regained its old shape, plus the latest technology. The reality is more complex.

35. This does not mean that improvements in the collection, interpretation and diffusion of environment-related data³⁷ is unimportant for Tajikistan: Initial work undertaken recently with ADB's technical assistance³⁸ on creating a unified system of environmental information, centered on MNP, has documented this importance. And some improvements have been made. Renewed efforts to collect environmental information are being made also by the Academy of Sciences, and several government ministries. Some new measurement tools and equipment have become available. These can be viewed as steps aimed at re-creating a nation-wide monitoring system. Considering the importance of international environmental conventions for Tajikistan's environmental management, local environmental data also need to be included into the global monitoring system (GEMS), and the UNEP's geographic information system (GRID).

36. The EIA process has worked reasonably well in Tajikistan. EIAs ("ecological expertise") are the responsibility of either Dushanbe or *oblast* level MNP State Inspectorates. Local MNP staff review and generally approve simple projects in *rayons* (such as schools and clinics) while larger projects (bridges, roads, etc.) are handled by Dushanbe. Inevitably, there are weaknesses, too. First, the socio-economic aspects of EIAs tend to be poorly developed. Second, MNP is both the executor and reviewer of the EIAs. Third, EIAs are generally prepared for industrial and site-specific facilities, but not for spatially diffuse projects such as irrigation and drainage infrastructure. Fourth, public participation is not regularly solicited and may be denied in cases judged to involve national security considerations. Fifth, the centralization of the more complex EIAs in Dushanbe tends to weaken local participation in the process. Guidelines for improved EIA procedures in Tajikistan were completed last year under ADB technical assistance but have not been formally endorsed yet. The terminological confusion (involving EIA

(9) *Report on the Functioning of Air and Sewage Treatment at Industrial Enterprise* compiled on the basis of self-reporting by industrial polluters. Internal documents of MNP contain (10) *Emergency Situations and Control of their Consequences*, and (11) *Gross Violations of Environmental Legislation*.

³⁷ Among complicating factors is the emerging habit to seek payment for information even between different agencies of the government.

³⁸ TA 3614, Environmental Assessment and Monitoring Capacity Building. Until 1999, MNP published *Annual Report on the Environmental State of the Country*. This was then superseded by *State of the Environment* reports compiled in a UNEP-format by MNP's Nature Protection Science Research Laboratory and recently extended to the City of Dushanbe. With ADB assistance (RETA 5860 Institutional Strengthening and Collection of Environmental), MNP and the State Statistical Office prepared in 2002 a compendium of environmental statistics, *Environmental Protection in Tajikistan: Statistical Summary 1900-2000*.

and “ecological expertise”) hampered the legislative progress for a long time and has not been entirely removed in the new EIA Law.

F. Financing of Environmental Management

37. Environmental management in Tajikistan is largely donor-financed. The 2003 budget of the Ministry of Nature Protection and all its agencies is S2.06 million (about \$650,000), up from S1.7 million 2002 (then about \$620,000). This amount is increased by extra-budget revenues of a similar order. (see para 39 below). Because the budgets of many donor-financed projects span several years, it is not possible to give an accurate *annual* amount of donor funding but a sum several times the MNP budget and extra-budget funds taken together seems a reasonable estimate for the grant component alone (see Appendix 3 for details of environment-related donor assistance). Once donor-financed projects in other sectors with strong environmental linkages (e.g., irrigation rehabilitation, water supply and sanitation, etc.) are included that amount rises further still.³⁹ The donor support is unevenly distributed, however, and some environmentally-vital activities such as forest protection, afforestation, or management of non-irrigated lands that rely mainly on budget allocations rather than project-specific donor support are naturally experiencing far greater budget pressure than the more generously funded activities.⁴⁰

38. Some budget difficulties have specific causes in Tajikistan. The very high cost of communications is among them. Referring to MNP operations, Seatec and HCG (2002) note: “The monthly cost of Internet service for 3 or 4 *oblasts* will exceed the monthly payroll of the 54 staff in MNP Headquarters. The cost of a two-page fax from Dushanbe to ADB in Manila is roughly equivalent to one month’s salary of a staff member in MNP Headquarters. The minimum monthly fee for a mobile phone is 2 to 3 times the monthly salary of a staff member in MNP Headquarters. The cost of 15 minutes of mobile phone conversation is equivalent to an MNP staff member’s monthly salary.”

39. Article 20 of the Law on Natural Protection 1996 and 2002 stipulates the creation of a Nature Protection Fund to function as a tool for channeling funds from environmental charges and penalties towards environmental mitigation activities. The article has been translated into earmarking of 60% of the proceeds of pollution charges and fines to the environment-related activities of the *oblast* hosting the paying polluter, 30% to the respective *rayon* and 10% to support local environmental committees.⁴¹ While relatively easy to establish at the level of single environmental committees, the nationwide picture of extra-budget revenues and expenditures remains non-transparent and subject to some uncertainty.⁴²

³⁹ It is because donor assistance drives environmental management in Tajikistan, attention to its structure and existence (or not) of synergies is important to address. Important to bear in mind, nevertheless, is that donor funds are *tied* to varying degrees (e.g. to the use of donor-selected consultants) and the totals of such funds will overstate the amounts at MNP’s and other recipient agencies’ free disposal.

⁴⁰ By way of example, the 2003 budget of MOA’s Forestry Agency (formerly “*Tajikles*”), responsible for nearly 3 million ha of forest and pasture lands is S430,000 (\$140,000).

⁴¹ Small departures from this practice seem to exist. In the case of Dushanbe City’s Environmental Committee, for instance, 40 % of the proceeds of pollution and fines are retained by the Committee to be used for its own purposes while the remainder is transferred to MNP Special Fund (until 1999, the Nature Protection Fund). The extra-budget funds of the Committee (about \$25,000 p.a. equivalent in 2001) were about three times greater than the official budget allocation reflecting the large number of polluters in Dushanbe.

⁴² Here, Tajik practice is different from that of, for instance, Kazakhstan where earmarking of pollution charges was discontinued in 2001. In Tajikistan, the label Nature Protection Fund was abolished in 1999, but not the practice of earmarking.

G. Public Participation

40. The Government prepares, prints and distributes 1,200 copies of a bi-monthly or monthly paper *Navruzī Vatan* (“New Dawn of the Motherland”) devoted to environmental topics. Targeted particularly towards the *oblasts* and *rayons*, it is the Ministry’s main outreach tool for information environmental awareness and education. Some Environmental Committees publish their own newsletters. (e.g., *Bargi Sabz* or “Green Leaf” in Dushanbe City).

41. There is an active network of local environmental NGOs, centered on Dushanbe but also in other parts of the country such as Khatlon. Most of them are involved in outreach activities besides many other things. Their perception of the current environmental situation in the country, broadly speaking, is that (1) a disproportionate influence on the policy formulation is wielded by former scientists whose independence is questionable, and who are not necessarily best qualified to formulate policies to deal with problems that may not be scientific in nature; (2) publicity and meetings do not always target the right people and waste resources; (3) differences of approaches and existence of favorite assistance models⁴³ by different donors result in overlaps and inefficiency in the field; and (4) the process of engaging local NGOs often favors skilful “proposal writers” at the expense of tested “doers”. Views differ on whether the *de facto* displacement of the Government in many social assistance areas by NGOs is a good thing or not.

H. International Commitments

42. So far, Tajikistan has ratified eight international environmental conventions. They are:

- United Nations Convention on Biological Diversity
- United Nations Convention to Combat Desertification
- United Nations Convention on Climate Change⁴⁴
- Vienna Convention to Protect the Ozone Layer
- Convention on Migratory Species
- Aarhus Convention on Public Participation
- Ramsar Convention on Wetlands Protection
- Stockholm Convention on Persistent Organic Pollutants (POPs)

Donor financing has been instrumental in enabling Tajikistan to fulfill most of its obligations under these conventions and play an active role in their programs.

I. Donor and NGO Programs and Activities

43. Donor assistance has been a major factor in post-civil war rehabilitation of the country, the economic reform process and also, environmental management. (once more, see Appendix 3). This is so despite the fact that projects classified as purely environmental accounted for less than 2% of the overall foreign assistance. Most environmental impacts came through multi-sector projects accounting for about a third of all foreign assistance to Tajikistan in the last three years. The largest grant donors overall (all activities combined) in terms of value have traditionally been the WFP, USAID, EU, the Swiss Government and UNDP/GEF. The loan assistance has been dominated by the World Bank and ADB, with IDB, EBRD, SFD, and OPEC Fund also playing a role. Training broadly defined has been by far the largest category of foreign

⁴³ Rural organizations, labeled differently and pursuing somewhat different paths are the case in point. ADB/JFPR own grant project (JFPR 9008) implemented by two different organizations (AKF and CARE) provides a convenient illustration. Weighing the benefits of organizational diversity with its cost is yet to take place.

⁴⁴ Tajikistan has not yet ratified the Kyoto Protocol

assistance (over 60% of the total) –a source of some dissatisfaction on the Tajik side of late, vehicles and equipment being the most desired categories of assistance.

44. UNDP has played a prominent coordinating and organizational role besides supporting institutional strengthening, work related to international environmental conventions, disaster preparedness, and –through UNOPS– water-related rehabilitation and reconstruction activities in rural areas.

45. EU TACIS has a long history of assistance to the Aral Sea Program mainly through its WARMAP Project. After security-related temporary withdrawal from Tajikistan, EU TACIS has re-entered Tajikistan. Although EU TACIS' emphasis remains on regional projects, several important national activities are included in the current program, including a Livelihoods Improvement Project in Khatlon *oblast*, support to the Ministry of Agriculture in the development of a legal framework for a land and water use. Among regional projects, particularly important for Tajikistan is the planned Development of National Environmental Strategies for Sustainable Development (for TAJ, KAZ and KYR), and support to the Regional Environment Center for Central Asia. EU TACIS' sister organization ECHO has been supporting disaster preparedness activities. EU Directorate General-Development has provided additional EU resources to rural development.

46. World Bank has had a long and substantive involvement in Tajikistan's development, including its environmental aspects. Major rehabilitation projects have been undertaken, as has a rural infrastructure development project with important environmental components. A water and wastewater project in Dushanbe is currently under implementation. World Bank responded to Tajikistan's concern over Lake Sarez and its possible collapse and with Swiss funding, undertook studies and emergency preparedness activities in the lake's vicinity. The Bank has supported the preparation of the National Environmental Action Plan (NEAP).

47. The Swiss Government, through SECO and SDC, has played a major role in supporting mountain communities through its flagship regional program Central Asia Mountain Partnership. It is also addressing other environmental priorities such as hydrological forecasting. Through its Integrated Water Resource Project in Fergana Valley, the Swiss Government has participated in tackling one of the thorniest transboundary environmental issues affecting Tajikistan.

48. USAID has been a major participant in regional water- and power-related transboundary initiatives affecting Tajikistan. The Agency has also supported rural rehabilitation and reconstruction, public health improvement, been a champion of the civil society, supported environmental NGOs, and financed setting up of a legal database applicable also to environmental management.

49. GEF has supported the Aral Sea_Water and Environmental Management Project (WEMP). In Tajikistan, WEMP targeted salinization, efficiency in water use, public awareness, dam safety and monitoring transboundary water. Several projects associated with international environmental conventions have received GEF funding with UNDP technical support.

50. Among other projects, Islamic Development Bank has financed the Dangara Valley Irrigation Project and a power rehabilitation project.

51. Most NGOs are implementers rather than donors. Important from an environmental point of view are activities of several implementor-NGOs working on rural development, public health and other problems with important environmental repercussions. The most important among

them in Tajikistan are AKDN, CARE, ACTED, German Agro Action Tajikistan, Action Against Hunger and CAMP. In most cases, the NGOs are supported by World Food Program⁴⁵ and other donors traditionally active in hunger and disease alleviation such as ECHO, USAID, or UNICEF. Two of them (AKDN and CARE) implement the JFPR-funded poverty alleviation project (see Appendix D) in several *rayons* of DRD. Important to note is that most donor funding is in support of international, “high-cost”, NGOs, and only through them and to a much lesser extent, the cash-starved and low-cost local NGOs.⁴⁶

52. Apart from utilizing NGOs (especially local NGOs) little in implementing its projects for familiar procurement-related reasons, ADB has not always followed the activities of these NGOs closely and systematically to draw useful lessons. This weakness is separate from the communication gap that has proven surprisingly difficult to bridge reflecting the wrong perception that NGOs’ work contains no element of technical assistance or policy development⁴⁷ as well as simple insular habits. The exceptions have been JFPR-financed Rural Poverty Reduction Project implemented in its entirety by an international NGO and the preparation of ADB’s Microfinance System Development Project, which featured substantive inputs of, and roles for, NGOs.

III. THE WAY FORWARD: PROMOTING SUSTAINABLE DEVELOPMENT

A. Improving Policy Formulation

53. The MNP structure does not include a specific unit for strategic planning or policy that could help the MNP systematically to develop approaches to sustainable development. Strategies and plans have been generated *ad hoc* within various MNP units assisted by local advisors, through working groups or committees (also with assistance of local and foreign advisers), especially under international environmental conventions. The basic policy documents such as the State Environmental Program for the period 1998-2008 are statements of objectives rather than also an argued selection of policy measures to be adopted to reach them. The early (1999) draft of the National Environmental Action Plan contained little analysis and its information foundations were doubtful. Its subsequent “full-bodied” UNDP- and World Bank-financed variant is yet to be completed. Its preparation has not been sufficiently inclusive for other development partners to contribute or comment. If NEAPs in other NISs are any indication of what is needed, attention to financial and economic aspects, and linkages of environmental considerations to the economic mainstream will represent the greatest challenge for NEAP formulation. A somewhat unusual situation exists in Tajikistan in that the Government is responding to a Regional Environmental Action Plan (admittedly with *its* flaws not dissimilar to those imputed here to the State Environmental Program) before NEAP has been completed and ratified. One of the consequences of these weaknesses is that no real environmental road map exists to this day and the considerable number of donor-funded activities (see Appendix 3) do not conform to a clear strategy or follow sufficiently similar policies. The links among the Environmental Program 1998-2008, NSDC’s Strategic Plan of Sustainable Development and MNP’s National Environmental Action Plan, funded by the World Bank, are yet to be clarified.

⁴⁵The fact that WFP remains the single largest grant donor in many countries including Tajikistan tends to be forgotten.

⁴⁶Interested reader is referred to Skochilov (2003) for the typology of Tajik NGOs and CBOs and an assessment of their perceived strengths and weaknesses.

⁴⁷Work of CAMP, funded by the Swiss government, is a good example of NGOs providing technical and policy assistance as well as implementation help.

54. The absence so far of a strong unifying framework for environmental management is a fundamental weakness. Besides being very slow in coming, the National Environmental Action Plan is being drafted as an MNP document, not an economy-wide document that it has to be if it is to have any realistic chance of being implemented. Where the cross-sectoral mandate could be strong (e.g., in the case of the National Sustainable Development Commission) it has been allowed to go unutilized: the rather comprehensive “Rio+10” Report (GOT. 2002d) is not being developed further to become a guiding and unifying document. For its own part, MNP has allowed itself to be tempted by different donor sources to pursue several directions without putting in place a mechanism of coordinating such efforts and bending them to an agreed common direction.

55. The point can be taken further: Since so much environmental management in Tajikistan is donor-funded, the question of improved policy formulation must be placed in the first instance at the assistance community’s doorstep. Exchange of ideas rather than superficial information about “who is doing what” among the organizations with the greatest stake in sound policy (IFIs, most notably) has proven relatively difficult.⁴⁸ The important policy-related work under international environmental conventions frequently by-passed one or another important development partner and proceeded in separation from one another and from NEAP. The drive for reformed policy formulation and coordination must have an important donor input since in the current budget circumstances, local institutions find the proliferation of efforts an almost irresistible incentive to accept things as they are.

56. The insufficient development of domestic policy-formulation capacity can be in part attributed to continuing uncertainty in the minds of many of the appropriate role of MNP. The role of MNP as mainly a monitoring and enforcing agency tends to receive instinctive support, related as it is to the long tradition of relying on science, numbers and end-of-the-pipe solutions. The involvement of MNP in policy-making, though mandated by the Law of Nature Protection, is new and not surprisingly, MNP has turned to the academe for help in these matters. The academe itself, with a pronounced scientific bias, however, is new to these activities and notably weak in dealing with socio-economic aspects of environmental management.

57. An obvious gap in policy making is found in the absence of its decentralization, and decentralization of environmental management in general. Given the disruption of the civil war and problems of sheer economic survival during that period this is to be taken as an observation rather than criticism. Nevertheless if Tajikistan is to make its development more sustainable, creation of the local capacity to formulate programs, reflecting local perception, insights and know-how will become indispensable. Working at the *oblast* and *rayon* level must eventually become a crucial complement of the work at national level. This will require increased attention from now on to decentralization of decision making and financing. Here, initial experience with the use of pollution revenues at the local level provides a modest but important beginning.

58. As to business-government dialogue on environmental matters such as environmental compliance, economic incentives and disincentives, enforcement and governance issues, the slate is largely clean in Tajikistan. On the industrial side, the business sector is still very weak and far from re-structured. Industry in Tajikistan, much depleted, has never been involved in any aspect of environmental strategy formulation and it is only now that discussions are beginning to take place on environmental issues between, for instance, major polluters (such as ore

⁴⁸ It is important, however, to mention the existence of regular subject-based (e.g. agriculture) donor-government coordination meetings that have been one of the bright spots in policy formulation and development. Extension of this practice into the arena of environmental management would merit serious consideration.

processors) and local environmental committees on the extent of these companies' environmental obligations. So far, none of these have led to inclusion of these enterprises into any policy formulation mechanism of the Government.

59. The economic aspects of environmental policy have been weakly and unsystematically developed in Tajikistan even if, as pointed out earlier, their importance is being accepted by many at the government's highest levels.⁴⁹ The work on resource pricing, driven from outside, by IMF, World Bank and ADB, has not played much of a role inside MNP or its academic consultants but, as so often in reforming economies, is now a constant concern –and irritant-- for the state electricity company (*Barki Tojik*) and MWRLR. The dramatic contraction of the industry in Tajikistan is one of the factors that has delayed the stated intention of the State Environmental Program of making economic instruments an integral component of environmental practice in Tajikistan.

B. Strengthening Environmental Management Capacity

60. A number of detailed recommendations have been made under ADB technical assistance concerning the structure and functioning of MNP and the institutional framework in general. Only the most important are summarized below, dealing with, respectively, the legislative framework, the organization structure, monitoring, environmental information system and human resource development⁵⁰. Common to them is the belief that strengthening of MNP's management capacity (plus better cross-sectoral cooperation) is essential for improved environmental management in Tajikistan as a whole.

61. On the legislative side, the main suggestions have been to:

- (i) Clarify legislative provisions relating to decision-making powers. Current environmental legislation is replete with cases where it is not clear whether a consensus of several agencies (rather than a decision of a single one) is required before certain actions can be taken (for example, the closing of a factory).
- (ii) Fully define the scope of responsibilities in the process of issuing environmental approvals to entities wishing to design and operate projects, especially the powers of State officials to conduct or oversee the environmental assessment process.
- (iii) Increase the authority delegated by Parliament to various environmental agencies to make it easier for them to implement their responsibilities, At present, such authority is diluted because it is shared by many agencies⁵¹. Since MNP has the greatest responsibility in environmental monitoring and pollution abatement matters, it should explicitly receive primary authority in those areas.

⁴⁹ The welcome exception is the National Human Development Report unveiled at the 2003 Dushanbe Water Forum, with its economically literate approach towards the complex issues of water management and livelihood improvements.

⁵⁰ Recommendations made under ADB-financed technical assistance (TA) do not necessarily represent ADB's own position. ADB TA consultants may well be financed by ADB but their opinions remain their own. Compliance with the terms of reference does not mean sharing the technical positions of ADB (assuming that ADB does have a unified position on many complex issues addressed under the technical assistance). It is in this spirit that existing recommendations are presented here (see also para. 0).

⁵¹ For example, MNP can propose environmental standards, but such standards must be agreed to also by the Ministry of Justice, Ministry of Economy and Trade and others before being submitted to the Government for approval. Greatest overlaps of powers are found in mining- and health-related matters.

- (iv) Expand the regulatory coverage to environmental auditing, certification, aspects of privatization, liability (especially in connection with contaminated industrial sites), dangerous substances and several others.
- (v) Remove the conflict between the Law of Natural Protection and subnormative acts and other laws that also seek to regulate the state of environment
- (vi) Systematically and more efficiently distribute environmental legal instruments to *oblast* and *rayon* committees to facilitate enforcement at the local level.
- (vii) Modify national legislation in order to bring it in line with international environmental conventions
- (viii) Promulgate additional legal instruments to bring environmental assessment (including impact mitigation and management) to current international standards
- (ix) In the longer run, conduct systematic article-by-article reconciliation of environment-related regulations by inter-ministerial working groups to eliminate ambiguities and clarify responsibilities of each entity.

62. Among the many recommendations concerning the organizational structure was to reduce the conflict of interest by separating the permitting and inspection functions within MNP. Other recommendations were to:

- (i) Clarify the role of the Presidential Office in the field of nature protection, since Presidential decrees have increased in importance in general as well as in environment-related matters
- (ii) Strengthen environmental monitoring and the environmental information system (EIS) through a number of different initiatives (see below)
- (iii) Formulate and carry out a human development program
- (iv) Develop EIA guidelines for specific types of projects.
- (v) Pursue technical assistance projects with multiple beneficiaries and with objectives of improving coordination and cooperation among ministries and other entities with environmental mandates.
- (vi) Support greater decentralization in environmental decision making and administration, following strengthening of the capacity of regional environmental committees in EIA, monitoring, and information management. Gradually delegate more EIAs and monitoring from Dushanbe to *oblasts* and *rayons* as local capacity increases

63. Relevant as these suggestions may be it is difficult not to feel that they are shaped by the terms of reference of the relevant ADB technical assistance project that made MNP the focus of institution-strengthening efforts. Their effectiveness requires acceptance and active promotion by the Government and the international donor community of an MNP-centered (rather than an alternative) pattern of institutional strengthening. The alternative does not question the need to strengthen MNP but recognizes the importance for the overall environmental outcomes of activities (policies, investments, programs) that may not be “purely environmental” but deliver environmental benefits indirectly. Viewed this way, improved capacity of, say, MOA to introduce more sustainable land use practices in the uplands could be as important as the activities of MNP in monitoring the state of upland resources. It is the latter approach that is supported in this CEA.

64. It is also clear that improved governance through expanded transparency, full disclosure, greater public access to information, and salary increases that eliminate the need for outside income will have to be an integral part of any lasting efforts to improve things. Equally clear is the link that improved environmental management has with general economic development that

could help to reduce the high administrative cost (e.g., that of communications) of policy-related and regulatory activities of the Government.

65. Much more positive has been the role of NGOs, including their participation in public hearings on elements of environmental legislation. The relationship between the Government and NGOs is largely constructive in Tajikistan. Better ways of NGOs inputs into policy making are nevertheless needed.

C. Improved Monitoring

66. Assessments of Tajikistan's principal environment problems (environmental impact of changing land use, public health) are handicapped by gaps in information especially concerning the developments that are new and as such, not covered by existing monitoring formats, or occurring too fast in relation to the weakened monitoring resources. This is the case, for instance, of unrecorded upland developments. However, as argued earlier on, it would be off the mark to portray the situation as critical.

67. The overall picture is one where environment-related information is collected and stored in many ministries, committees, offices, and organizations. Most of this information exists in a hard copy only. The speed of information interchange is very low. It takes several weeks for information generated by local environmental committees to reach MNP, not counting the processing time. Some improvements and partial computerization has been realized recently as a result of ADB technical assistance. The perceived need is for more monitoring equipment, facilities and mobility of monitoring staff without, however, a clear idea of the monitoring priorities or the way in which the information gained is to be used. MNP needs to systematically and incrementally debate information needs and uses with each sector, and negotiate agreements on information gathering and processing, on a case-by-case basis, with each sector over a period of years.

D. Recommended Approaches To Promoting Sustainable Development

1. Mainstreaming

68. Integration of environmental considerations into the policies of sectoral bodies has been partial at best. In some cases this is simply because the links between MNP and those formulating the relevant sectoral policies have been weak. For instance, in matters relating to land degradation, the Ministry of Agriculture and GC on Land Management work largely in separation from MNP. In the case of MOA, its focus is not on the negative consequences of poor agricultural practices but on production. The GC on Land Management has largely taken over from MNP the task of the guardian of land fertility despite its formal mandate that limits it largely to land classification and allocation. The 2002 formal inclusion of the Forest Agency (*Tajikles*) into MOA is too recent to judge the role that environmental aspects of forestry will play in policy formulation by both MOA and MNP.

69. In the case of The Ministry of Water Resources and Land Reclamation, in charge of all hydrological facilities and irrigation-drainage networks, the eyes are on the rehabilitation of the irrigation network. This, as well as MWRLR's indirect role in slowing down the population movement into the more fragile uplands, is environmentally vital but not translated into more forceful cross-sectoral cooperation involving MNP, MOA and GCLM. Ministry of Industry has been largely left out of the environmental policy-making despite the substantial and obvious environmental repercussions of industrial (including mining) activities in Tajikistan. Department

of Environment and Emergency Situations (DEES) of the Presidential Office has been more of an arbiter than a player, i.e. “unintegrated” almost by design.

70. Continuing underdevelopment of a more economics-informed approach to policy and program formulation by MNP and others is another factor working against effective cross-sectoral integration. Without it, it becomes more difficult to demonstrate the potential attractiveness of mainstream projects and programs that combine income generation with positive environmental impacts. Where such possibilities are few, it makes it harder for the respective sides to judge the budget repercussions of greater mainstreaming and seek necessary trade-offs. Looking for the most cost-effective and economically efficient way of reaching environmental objectives (rather than simply adding up the cost of set programs, the traditional weakness of NEAPs and their clones) is another mechanism that can drive the cross-sectoral way of working for it may identify a number of cases where environmental objectives can best be achieved indirectly, through mainstreaming. There is no shortage of relevant examples from improved sanitation as a low-cost way of achieving certain public health objectives to energy efficiency programs as a way of reducing de-forestation, and many others.

71. Other ways of improving coordination and collaboration among Tajik agencies, suggested during the last two years (e.g., in the course of the ADB technical assistance project mentioned earlier) include the following:

- (i) Creation of a center for coordination of environment management activities (including policy formulation).⁵²
- (ii) Joint publication and distribution of data about the state of the environment involving other ministries, departments and organizations, either on a rotating basis (in the manner, for instance, of the changing subject emphasis of World Development Reports of the World Bank) or some other basis.
- (iii) Interdepartmental training courses on environmental protection.
- (iv) Integrated monitoring (of polluters, land use activities etc.).
- (v) Pursuing the work on creation of a unified environmental monitoring database serving the needs of different government agencies
- (vi) Promote activities that demand inter-sectoral cooperation such as ecotourism promotion and projects with multiple beneficiaries.
- (vii) Greater multi-sector participation in activities supporting international conventions.
- (viii) Training in environment-related subjects of individuals from organizations other than MNP.

72. As argued earlier in para. 63, however, appropriate for Tajikistan (and ADB) may be a less MNP-centered notion, namely that it is possible and desirable to formulate environmentally positive projects that do not have MNP at the apex. In many win-win projects the role of MNP may well be only subsidiary the bulk of responsibilities borne by other agencies of the government (or, indeed, by NGOs, in appropriate cases).

⁵² Despite valuable coordination work of UNDP, no single database containing all environment-related activities in Tajikistan exists at present. Appendix 3 of this report may well be the most complete there is. The Aid Coordination Unit set up under ADB funding has a long way to go to obtain the full picture, especially the work funded under environmental conventions. This situation contrasts with the excellent database of humanitarian and emergency relief projects maintained by the UN Office for the Coordination of Humanitarian Affairs.

2. Financing

73. Even with an improving budget situation of the Government, financing of environmental activities in Tajikistan will continue to rely on donor assistance for many years to come. There are many good reasons why donors should continue to target environmental management in Tajikistan, especially through multi-component projects that combine improved livelihood with environmental improvement. This should not, however, detract from attention to the use of budget and extra-budget resources including, first, the amounts set aside for environmental management (counting not only MNP resources but also those of other agencies that perform environment-related functions)⁵³, and second, their internal structure.

74. The difficulty that anyone in the Government has at present in tracking the totality of donor expenditure on environment-related activities suggests that the Aid Coordination Unit should not mainly rely on questionnaire responses, and the process of accounting for incoming funds should be strengthened. The existing situation is also an indication of how little pressure on the Government (and the donors) there has been so far to demonstrate the effectiveness of the environment-related assistance. The sufficiently long period of political stability and environmental assistance should be seized by the donors to address this issue.

3. Economic Basis of Environmental Policy and Practice

75. Promising beginnings have been made in Tajikistan on removing the most glaring of resource pricing distortions or simply introducing resource or service pricing. This is the case with irrigation water and, now, agricultural land. In these cases, the initial decisions need to be followed through and the implementation closely followed. The subject matter must not be considered closed once improved pricing structure is adopted for it is often in its implementation and deepening of initial measures that success is found. There is a large unfinished pricing and cost-recovery agenda in Tajikistan that starts with the much debated electricity pricing⁵⁴ and includes the much less debated financing of municipal waste disposal, municipal and rural water supply,⁵⁵ and pastureland. The use of pollution charges is a positive feature of environmental management in Tajikistan but the rates of pollution charges and the underlying economics of the system have never been adequately assessed. Other economic instruments of policy commonly debated and used elsewhere such as performance bonds (of potential relevance to Tajikistan's mining) and several others are yet to enter the policy debate.

4. Regional Environmental Activities

76. The experience of the newly independent CARs in economically vital domains such as customs clearance has been discouraging suggesting that behind the regional cooperation

⁵³ It is time to abandon the habit to calculate Government environmental expenditure as being synonymous with the budget of the environmental regulator only.

⁵⁴ This report is not the right place to analyze the interdependence of the prices of stored water (upstream of hydroelectric facilities), hydro-energy and irrigation water that together, may have a more profound impact on Tajikistan's environment than many other things. The key to the relationship is the question (unanswered here) of what the opportunity cost of upstream reservoir water is.

⁵⁵ Tajikistan offers a large number of examples where pricing distortions skew social choices. For instance, low electricity prices make it possible for many in towns to boil contaminated piped water (instead of buying expensive bottled water or becoming sick). Underpricing of electricity may then obscure the social profitability of improved water quality and perpetuate underinvestment in the water sub-sector. Similarly, low electricity prices make Tajikistan's largest single industrial polluter, TADAZ, financially viable at the cost of adverse health outcomes of local (and transboundary, in this case) residents.

rhetoric (and a genuine desire to live in peace with one another) there is a preference for the time being and possibly for some time to come for independent development in the economic arena. The experience of the Aral Sea Program and the scant progress achieved so far would seem to support this generalization. If so, attempts to further promote transboundary environmental cooperation on substantive issues (such as the Aral Sea crisis) ahead of breakthroughs on vital economic issues such as removal of obstacles to trade may be the wrong sequence of assistance. Transboundary cooperation on environmental issues in Central Asia is not mainly a technical issue (the usual assumption made by donors) but a political one. Even on the technical side, the IFAS model seems to be deeply flawed, structured as it is around a single resource (water) to deal with a problem that revolves around more resources than one (energy, most obviously, but also environmental, recreational and other demands on water).

77. These problems do not mean that donors should not support regional initiatives but rather that support for regional environmental initiatives may not be particularly effective at this time, almost regardless of their design. This would be especially so in the case of the Aral Sea program. Less ambitious region-wide initiatives (e.g., publicizing the experience of participatory water use) are less vulnerable to the fundamental weakness described above because they are activities with minimal resource flow across the boundaries, i.e. they are not very different from national-level activities.

78. Based on this rather skeptical assessment, the strategy recommended here for Tajikistan is to concentrate on domestic problems of which there are many with attractive environmental prospects.

IV. APPROACH AND PROGRAM

A. ADB Experience and Comparative Advantages

79. ADB was relatively slow to make environmental management a priority on the Central Asia scale and only a little faster on the national scale in Tajikistan. The otherwise excellent work done under the Regional Economic Cooperation in Central Asia and associated *Central Asian Assistance Plan 2000-2002* is notable by the absence of any mention of environment and its role in affecting the economies of CARs. ADB's strengths in Central Asia were seen to reside in transport, education, energy, health reform and rural finance. Yet by the end of the decade, ADB had acquired a reasonable grasp of the environmental situation in all CARs (except Turkmenistan) through a series of Environmental Profiles. This work was soon followed by technical assistance for institutional strengthening of the reforming environmental ministries CARs in three out of the five CARs including Tajikistan. ADB's regional environmental initiatives such as Regional Cooperation for Sustainable Mountain Development added to the growing experience.⁵⁶ Also, and no less important, ADB assistance saw a quick mobilization of resources for environment-related investments in irrigation rehabilitation, and water supply improvements.

80. Following initial support for greater readiness to cope with floods, Environmental Profile was completed in 2000. TA 3614 (Environmental Assessment and Monitoring Capacity Building)

⁵⁶ The results of that RETA turned out to be rather disappointing for Tajikistan. The quality of the national report was poor, a fact given wide publicity in the national press. Also, Tajikistan is not among the countries participating in RETA 5972 (Promotion of Renewable Energy, Energy Efficiency and GHG Abatement Projects). The failure of the Tajik authorities to secure participation in PREGA is now regretted just as the vital place of rural decentralized energy supply in environmental management is more clearly recognized.

soon followed aiming at streamlining the functions of the MNP and improving its efficiency. Among the findings and outcomes of the TA⁵⁷ were (1) formulation of reorganization proposals for MNP, (2) recommended measures for improving the environmental impact assessment (EIA) process and strengthening the capacity for environmental monitoring including amendments of EIA and data-base guidelines; (3) preparation or amendments of other manuals and plans, including a trainer-of-trainers manual; (4) preparation of a human resource development Plan for MNP; (5) a variety of training courses; (6) setting up of an internal environmental information system and intranet system. Table 4 below summarizes the grant-financed ADB environment-related activities of relevance to Tajikistan.⁵⁸

Table 4: ADB Grant-Financed TA Activities with Direct Environmental Objectives in Tajikistan and Central Asia (RETA only)

TA Number and Type	Title	Year	Amount (\$'000)
3319	Flood Disaster Management	1999	205
3495	Strategy for Improved Flood Management	2000	550
3614	Capacity Building for Environmental Assessment and Monitoring	2000	600
5878, RETA	Regional Cooperation for Sustainable Mountain Development in Central Asia	1999	380
5934, RETA	Regional Environmental Action Plan (REAP) in Central Asia	2000	500
5941, RETA	Combating Desertification in Asia	2000	450
5972, RETA	Promotion of Renewable Energy, Energy Efficiency and GHG Abatement Projects (PREGA)**	2001	5,000 ^a
5996, RETA	Ten Years After Rio: Promoting Subregional Cooperation for Sustainable Development	2001	200
6001, RETA	Regional Consultations for the Third World Forum	2001	1000 ^b
6095, RETA	Integration of Environmental Concerns into Economic Plans, Programs and Policies	2002	550
6099, RETA	Assessment of Sub-Regional Water Management Issues in Central Asia	2003	150

^a The share of CARs was smaller than the RETA totals indicated in the table.

^b Tajikistan did not participate.

81. ADB, in common with other IFIs, still has a way to go to convert its policy of engaging NGOs, especially local NGOs, and the civil society mainly from web page dissemination into working relationships. There are now 91 local environment-focused such NGOs in Tajikistan.⁵⁹ Until now, they have not been well informed about what ADB' has done and is planning to do. IFIs' assistance in general in Tajikistan tends to be considered wasteful and based on self-serving assessment of priorities by government-beholden advisors. The criticisms may be

⁵⁷ In addition to those summarized in para.62.

⁵⁸ Table 3 does not include several RETAs approved since Tajikistan's entry into ADB that can –and should–be considered to support environmental management through targeting areas as diverse as resource pricing, natural resource management, urban development, dryland agriculture and others. Participation of the Tajik government in these activities varied. The fact that these RETAs are rarely considered as having a close link to environmental management is indicative of incomplete mainstreaming both in Tajikistan and inside ADB.

⁵⁹ CAREC (2003) lists a total of 185 local environmental NGOs in Kazakhstan, 163 in Kyrgyz Republic, 91 in Tajikistan, 65 in Turkmenistan and 86 in Uzbekistan, i.e. 527 for Central Asia. Several dozens international NGOs are active in Tajikistan, at least a dozen active in environment-related activities (see para. 50).

somewhat unfair in view of genuine security concerns that have made it difficult until recently to communicate more freely and effectively with NGOs and CBOs but they suggest nevertheless that a change of style might be required. Not surprisingly, assessment by international NGOs, more generously supported by donors than the local NGOs, is more positive. ADB's recent grant-financed Rural Poverty Reduction Project financed by JFPR⁶⁰ in particular, has been well regarded. As noted earlier on, much more remains to be done, however.

82. ADB's traditional strengths in transport and power sectors and new strengths in health are of obvious relevance to Tajikistan as is the Bank's vast portfolio of water resource development projects. Tajikistan offers a good opportunity also to draw on ADB's many projects addressing land degradation, soil erosion and watershed management. ADB has had a substantial involvement in a number of cross-cutting issues involving environmental management in its DMCs. In a number of countries, its traditional support for the development of the environmental (EIA) review and monitoring structures and capacity has been followed by attention to incentive-based approaches to environmental management and sector-wide realignment in pursuit of selected environmental goals.

B. ADB's Environment Strategy and Work Programs

83. Tajikistan is very different from, say, Kazakhstan and this must be reflected in the environmental strategy. Some differences are obvious, others less so but equally important. The obvious one is the geography that makes (1) food security and (2) emergency preparedness a priority (neither is a priority for Kazakhstan). The less obvious is the huge population dislocation following the civil war. This unleashed a chain of repercussions ranging from land abandonment (or invasion of lands previously protected), breakdown of resource management systems, emergence of public health problems in cities that saw a massive replacement of former residents by rural newcomers⁶¹ and in the countryside. The absence of economically viable deposits of hydrocarbons and coal turned out to play a major environmental role in the wake of post-independence disruption of energy deliveries.

84. Other factors may not be specific to Tajikistan and their place in the strategy will be a reflection of their scale and importance. ADB strategy will then move between these two broad sets of considerations. In doing so, ADB assistance must retain those elements of its 1998-2003 structure that are strongly pro-environmental. The chief among them is the important role assigned to power rehabilitation and water management.

85. The strategy will respond to key environmental concerns identified as (1) the environmental impacts of land use changes, especially threats of land degradation, (2) deterioration of irrigation supplies and loss of fertile land through salinity build-up and erosion; (3) problems related to water supply and water quality, including their impacts on health; (4) adverse environmental consequences of the winter energy deficit; and (5) continued absence of an "environmental road map". However, the strategy cannot respond to them equally. Given the constraints on the overall size of ADB lending in Tajikistan (see Appendix 4 that reproduces relevant CSP tables), the response will have to be selective and distinguish between areas where ADB will act through own investments and technical assistance and those where ADB's role will be mainly effectively to liaise with its development partners and maintain own ability to

⁶⁰ Project JFPR9008 of 2001.

⁶¹ Kazakhstan has seen an ethnically-based depopulation but an orderly one. Informal estimates place the percentage of newcomers in Dushanbe around 50% of the total, many of them occupying increasingly dilapidated high-rises.

respond in future. The former group will center around rural development and water management projects as a response to concerns (1) and (2) above. It will also partly address – through advisory technical assistance – the concern (5). It will not directly address concern (3) as social sectors have been “allocated” to other development partners, and will not respond directly to concern (4), although it may address them indirectly in ways suggested further below

86. ADB’s investment assistance will contribute to Government of Tajikistan’s environmental objectives mainly through the design of environment-*related* projects rather than mainly through stand-alone activities singling out environmental management. A number of possibilities to shape the design of projects in the direction of greater and deliberate integration of environmental considerations are noted below (paras.0 ff). These changes need also be reflected in the design of associated technical assistance. Bringing about greater unity of purpose and better donor coordination in environment-related planning and strategy formulation is the chosen way of addressing the concern (5). ADB will favor gradual reduction of MNP’s overwhelming dependence on donor resources (and an outlook that goes with such dependence), greater attention to local financing and a more efficient and transparent use of extra-budget resources.

87. ADB’s Country Environmental Analysis is prepared ahead of the National Environmental Action Plan (NEAP), being finalized without ADB’s active involvement but with support of ADB’s development partners, the World Bank and UNDP. ADB will work closely with the World Bank and other major donors to ensure that NEAP acquires the status of a reference document. As to sectors regarded as having major environment-related repercussions (e.g., urban water supply and sanitation) but excluded from CSP, ADB will maintain a technical and policy-based dialogue with key “players” in those sectors through the relevant ADB subject working group.

88. ADB assistance program and design of its components should deliberately seek to facilitate co-financing by like-minded bi-lateral sources and by GEF. Greater co-financing is currently impeded by mis-applied policy of centralizing all co-financing decisions. This discourages ADB staff from engaging in timely technical discussions with potential co-financing sources, making co-financing a process driven by budget officers rather than a venture of development partners. Shielded for a long time by access to ADF and JSF grant funds, ADB staff have had little incentive to learn to deal with non-traditional sources of co-financing (e.g., Gates Foundation in the case of health projects, Shell Foundation for biodiversity conservation or renewable energy, etc.). ADB will support efforts to minimize duplication across different international environmental conventions in Tajikistan. Good opportunities exist for simultaneously addressing, for instance, biodiversity conservation, land degradation and climate change considerations in single projects. The design of ADB projects will deliberately target these possibilities and ADB will resist unnecessary bureaucratic proliferation surrounding international environmental conventions.⁶²

89. Many environment-related activities envisaged for Tajikistan, especially those related to the utilization of surface water, have trans-boundary impacts. ADB has had a relatively modest involvement in the early phases of key regional water-related initiatives such as the Aral Sea. It is important for ADB to have a good understanding of, and links to, that ever-evolving framework that, combined, receives more than half of all environmental-related donor assistance to the region. Nonetheless, ADB’s approach to environmental management is based

⁶² An attempt to unify the in-country approach towards different international environmental conventions is being made under UNDP/GEF *National Self-Appraisal of Needs for the Implementation of Conventions on Climate Change, Biodiversity and Desertification* Project (see Appendix C).

on the conviction that improved management of environmental resources within Tajikistan can only benefit, rather than worry, Tajikistan's neighbors. The massive scope for efficiency and environmental gains that better regional co-operation in water and energy sharing (or better still, trading) could unlock will remain among ADB's regional priorities. However, Tajikistan's environmental strategy should not and need not be conditional on solutions to the complex regional cooperation issues.⁶³

90. In a country unusually prone to natural disasters, emergency assistance will continue to play an important role. The end of the civil war in Tajikistan has removed a large component of emergency and humanitarian assistance but emergency relief is likely to remain a factor in all assistance to Tajikistan. Be that as it may, its importance relative to development assistance has decreased and ADB's potential role has correspondingly increased.

91. The strategy recommended for Tajikistan bears a relationship to ADB's 2002 Environment Policy⁶⁴ that is spelt out in Table 5 below. The strategy can be regarded as a particular selection of the Policy's components and an emphasis given to each, both decisions reflecting the analysis of Parts I and II. It is accompanied by recommended approaches to implementation.

⁶³ ADB Regional Environmental Analysis now under preparation will deal separately with regional issues.

⁶⁴ To recall, the Strategy has five main elements: (1) Promoting environmental interventions to reduce poverty; (2) Mainstreaming environmental considerations in economic growth; (3) Maintaining global and regional life support systems; (4) Building partnerships; and (5) Integrating environmental considerations into ADB operations. We shall refer to these as *elements* 1 to 5. Each of the five elements is translated into several *areas of concern*. The elements and areas of concerns are related as follows:

- Element 1: Environment interventions for poverty reduction
 - Area 1: Protection, conservation and sustainable use of natural resources
 - Area 2: Environment quality improvement
 - Area 3: Reducing vulnerability to natural hazards and preventing disasters
- Element 2: Mainstreaming environmental considerations in economic growth
 - Area 1: Policy integration
 - Area 2: Integrated economic and environment development planning
 - Area 3: Strengthening regulatory systems and environmental governance
 - Area 4: Market-based instruments and other policy instruments
 - Area 5: Promoting education and public awareness
- Element 3: Maintaining global and regional life support systems
 - Area 1: Responding to multilateral environmental agreements
 - Area 2: Supporting regional and sub-regional cooperation on environment
- Element 4: Building partnerships
- Element 5: Integrating environmental considerations into ADB operations
 - Area 1: Country environmental analysis
 - Area 2: Appropriate classification of loans
 - Area 3: Public consultation and information disclosure.
 - Area 4: Implementation and monitoring and evaluation
 - Area 5: Environmentally responsible procurement
 - Area 6: Performance-based allocation of ADF resources

Table 5: Overall Direction of ADB Environment Strategy for Tajikistan

ADB Environmental Policy Elements and Areas of Concerns to be Given Prominence	Justification of the Selection and Emphasis	Recommended Approach to Implementation
Element 1: Environment Interventions for Poverty Reduction	ADB's approach to environmental management must be based on its implications for poverty. In Tajikistan (as in the rest of Central Asia for the time being), it means that it will have a rural focus for it is there where poverty is most acutely felt.	ADB's environmental objectives are best reached through suitable linkages with income-generating activities. Selection of environmental interventions should start from the identification of win-win opportunities before considering other components. Rural enterprises are pushed to the forefront.
Area 1: Protection, conservation and sustainable use of natural resources	Rapid change in land use especially outside irrigated areas, land degradation, deterioration of irrigation systems, pasture degradation, and depletion of forest resources linked to collapse of rural energy supplies make these particularly important sector elements of the environmental strategy in Tajikistan.	<ul style="list-style-type: none"> - Selection and design of individual investment or technical assistance projects must play the central role. Attention to irrigation agriculture needs to be followed by projects targeting non-irrigated lands. Policy framework for the management of such lands needs to be strengthened. - Utilize fully the potential of linking projects in these areas to GEF funding under the biodiversity, desertification and climate change conventions.
Area 2: Environment quality improvement	Deterioration of public health infrastructure (water supply, sanitation facilities etc.) in the countryside is translated into alarming increases in the incidence of water-related and other diseases.	Build on the experience of relevant projects (e.g., RRDP of UNDP, AKND and ACTED-implemented projects etc.) to achieve a balanced design of rural development projects of which the critical public health measures are an element.
Area 2: Environment quality improvement	Continued deterioration of urban water supply and sanitation infrastructure may score less highly than same concerns in rural areas on a per capita basis but scope for combined effect is considerable	Ceilings on the levels of foreign borrowing by GOT and other factors limit direct ADB investment assistance to social sectors. Nevertheless ADB should remain engaged in policy coordination and consultation in this vital area.
Area 3: Reducing vulnerability to natural hazards and preventing disasters	Tajikistan is unusually prone to natural disasters, a form of environmental risk. It is essential to reduce the man-made element of such risks. Major natural calamities cannot be excluded but only mitigated. The long-term strategy must be to build a more resilient economy through diversification and sustainable growth. ADB assistance	(1) Support activities that contribute to greater physical stability (e.g., prevention of soil erosion); (2) seize opportunities where disaster preparedness measures can have a positive impact on incomes and livelihoods (e.g., drain lands prone to mudslides and use the water for irrigation) and vice versa; (3) pay due attention to zoning of economic activities; and, in general (4) favor prevention to

ADB Environmental Policy Elements and Areas of Concerns to be Given Prominence	Justification of the Selection and Emphasis	Recommended Approach to Implementation
Element 2: Mainstreaming Environmental Considerations in Economic Growth Area 1: Policy integration	needs to shift from emergency response and reconstruction towards development. As well as insufficient mainstreaming of environmental concerns into economic activities, dependence of environmental management on donor financing is a concern. This increases the importance of policy dialogue among the donors and the Government.	cure. Also, maintain dialogue with humanitarian agencies (WFP, ECHO, UNICEF) and NGOs (AKF, CARE etc.) Support creation of mechanism that would facilitate efficient use of donor resources in support of a single agreed-upon environmental management framework Pay attention to the process of environmental financing at the central and local levels, including extra-budget resources of MNP. Pay attention also to the budgets of agencies other than MNP for they play an important indirect role in environmental management.
Area 2: Integrated economic and environment development planning	A framework unifying and reconciling different planning documents is missing. Most planning documents including environmental action plans prepared under international environmental conventions have so far lacked a firm economic and financial basis.	-Contribute towards the formulation of an environmental road map by seeking ADB's involvement in the finalization of the National Environmental Action Plan. Strengthen MNP's analytical and policy formulation capacity Work towards improving the action plans' economic and financial foundations. Continue to attack policy distortions that adversely affect environmental outcomes (underpricing of most natural and environmental resources and electricity, mis-specified property rights).
Element 3: Maintaining Global and Regional Life Support Systems Area 1: Responding to multilateral environmental agreements	Tajikistan unique biological resources, and the upstream strategic location have transboundary and global significance.	Utilize fully the potential for GEF co-financing under international environmental conventions. Recognize situations where different conventions' overlap and support simplification.
Area 2: Supporting regional and sub-regional cooperation on environment	Regional and sub-regional cooperation on environment are a constant in Tajikistan's environmental management despite scant progress on the water- and energy-sharing issues.	- ADB Assistance should be within the priorities of the Aral Sea and REAP. However, regional environmental issues should not dominate environmental assistance to Tajikistan. Cooperation to be driven by perception of internal needs. - Ensure that environmental

ADB Environmental Policy Elements and Areas of Concerns to be Given Prominence	Justification of the Selection and Emphasis	Recommended Approach to Implementation
Element 4: Building Partnerships	Partnerships have proven indispensable to get things done in the environmental domain	considerations are not absent from ADB's new regional economic cooperation initiatives but recognize that political agreements are key to unlocking possibilities of more effective transboundary environmental cooperation.
General		<ul style="list-style-type: none"> - Continue assisting Tajikistan in joining key environmental partnerships such as the UNCDD Global Mechanism - Improve consultation and cooperation with environmentally active NGOs (e.g., CAMP, ACTED, AKDN and others including local NGOs) and their donors - Play a more active role in regular coordination with other donors regarding environment management.
Element 5: Integrating Environmental Considerations Into ADB Operations		Continue to probe the design of several candidate investment- and TA projects and press for an environmentally informed approach to project and program formulation.
General		Better coordinate internally the regional activities involving water and land management now divided among ECAE, ECOC (CARECU), ECSS, ECIF and RSES. Lack of cooperation on water-energy issues criticized in Central Asia must not be replicated inside ADB.
Area 1: Country environmental analysis		<ul style="list-style-type: none"> - CEA should not be the sole analytical effort in "environment". Strategic environmental assessments may be required especially on land use policy and management or rural energy. - Assume "ownership" of the results of RETA 5878 (Regional Cooperation for Sustainable Mountain Development in Central Asia) and consider modifying its outputs in discussion with development partners to enhance its usefulness.

92. The question of the geographic focus of ADB's environment-related initiatives is far from irrelevant in a country where geographical features are among the primary determinants of land use. With Gorno-Badakhshan's territory better suited to "mountain-development donors" and their NGO collaborators, ADB activities will be directed at Khatlon, RRS and Sukhd that offer the balance of land topography and water utilization with the greatest scope for environmental improvements. Further narrowing of the geographical focus will have to take place in due

course, based on (among other things) environmental zoning. Assessment of scope for socially efficient interventions rather than existence of a suitable “empty slot” must guide ADB’s choice of assistance locations.

93. Below, the environmental strategy described in paras. 85 and 86 and in Table 5 is supplemented by a brief account of the environmental dimensions of the projects and activities that constitute the ADB environmental program as well as opportunities that go beyond the text of CSP. In the former case, they constitute a form of CSP’s technical endorsement together with suggestions about how to fully explore the environmental potential of proposed CSP activities. In the latter case, they are to be understood as logical extensions of the environmental assessment of this document. Even if ADB cannot address them on its own given various constraints placed on the overall scale of ADB lending, they are a reminder of the sort of environment-related projects that would deserve to be financed by others (or by ADB in due course or in the event of CSP changes). They also point to the areas where ADB in its wider role as an important sustainable-development partner needs to continue to consult with other donors and maintain its technical competence. Like CSP itself, the opportunities described below are divided into (a) lending products and (b) non-lending products and services.

1. **Advisory and Institutional Support (AOTA) Opportunities**

94. **Improved management of non-irrigated lands.** It is on the fringes of irrigated farms and on sloping lands—including pasture lands and areas officially classified as forest land—where many changes are taking place in Tajikistan. Policies concerning the use of such lands are at present inconsistent, and the mandates uncomfortably divided among MOA, SCLM, and MWRLR. Subjects such as pasture management, a vital component of land- and landscape management, have been left largely unaddressed in Tajikistan against all evidence of their importance. The environmental and economic importance of sustainable management of such areas is clear but formulation of policies and approaches suitable for new (and still evolving) institutional and grass-root circumstances lags far behind the attention given to irrigated areas⁶⁵. Technical assistance proposed in the CSP in support of two investment projects targeting rural development (i.e. *Strengthening Local Government Agencies in Rural Development* and *Rural Enterprise Development*) could be enhanced by inclusion of the above considerations with the Government Commission on Land Management as one of the potential implementation partners.

95. **Improved and coordinated environmental policy-making.** Thanks to ADB’s TA 3614 (Environmental Assessment and Monitoring Capacity Building), and a number of donor-funded projects linked to international environmental conventions, certain functions of the Ministry of Nature Protection at the central level have been strengthened. Paradoxically, MNP’s policy-making and co-ordination roles look as weak now as they did a few years ago. There is, first, a clear lack of tradition and ability to support the formulation of policies and programs by economics across all levels of MNP. Tajikistan badly needs exposure to that way of approaching environmental issues. Second, a situation exists in Tajikistan at present where a number of environmental strategic and planning documents are being (or have been) prepared largely in isolation from one another. Third, the work done so far has largely by-passed the

⁶⁵ Serious analysis concerning the long-term pattern of development in mountainous regions needs to be made part of these efforts. Bringing population down from the hills and turning them into cotton farmers and industry workers in the lowlands during the Soviet era could be argued to have a certain economic and even environmental rationale. The question that needs to be answered is whether assistance to upland returnees could become more of an obstacle (reinforcing settlements in fundamentally uneconomic locations) rather than aid to improved livelihoods.

country's budget and finance authorities. Advisory assistance that would help bring together these disparate activities and create a unified mid-term direction for the environmental management in Tajikistan supported by donors in a coordinated manner is needed.

96. **Improvement of rural energy supply and use.** The Power Rehabilitation Project (PRP) included in the CSP (second ADB project of this kind in Tajikistan) has a well-defined and important objective of improving the reliability of the power distribution system. The post-independence conversion of urban households from central heating and compressed gas to direct electricity heating and cooking has made rehabilitation of the aging distribution network a clear priority. Major energy-related environmental impacts, however, are experienced not in towns but in the countryside as the former reliable electricity supplies and subsidized provision of coal and gas to rural households have collapsed and the pressure on substitute fuelwood resources increased. The first-best solution of the problem (conclusion of international energy agreements that would allow Tajikistan to sell more of its summer hydropower and import more power in winter to satisfy all energy needs including the rural ones) may not be attainable for a long time⁶⁶ and in the meantime the problem of rural energy should be addressed. It may not be wise to dilute PRP's objective and add rural energy issues to it. However, it is important to place the rural energy provision higher on the policy agenda than it is now. Advisory technical assistance to formulate efficient responses may be well worth considering should further TA or co-financing resources become available. The TA would consider options such as improved transport of LNG or CNG and coal, renewable energy possibilities such as biogas digesters, mini-hydro, wind⁶⁷ and solar power, various rural grid rehabilitation options, as well as the range of policy instruments potentially available to influence outcomes.

97. **Regional environmental activities.** The candidate projects will be discussed separately in the Regional Environmental Analysis. At present, they include a proposal on Capacity Building for Regional Water Management Organizations. Another regional project, to be approved before the end of 2003 (and for this reason, not included in the new CSP), is Capacity Building in Environmental Information Management Systems in Central Asia. No assessment of these proposals is made here. Table 6 below nevertheless mentions these RETA proposals' potential links with ongoing or planned donor-financed activities in Tajikistan.

2. Investment Opportunities (PPT As and Loans)

98. The number of CSP investment candidates initially identified by individual ADB divisions was reduced with the late-in-the-day disappearance of the social sectors from the proposed program. The environmental significance of this development will depend on whether concerns highlighted in this report in areas such as urban water supply and sanitation can be expected to be adequately addressed by ADB's development partners, and whether ADB will retain a technical ability to remain engaged in a meaningful dialogue concerning these issues.

99. Even after this, no new, environment-only, investment projects are proposed for the assistance program. This is because (1) some candidates (e.g., Second Power Rehabilitation) promise to deliver significant, albeit indirect, environmental benefits, and (2) good opportunities exist for incorporating environmental considerations into the design of the majority of remaining projects to further enhance their intended impacts. This is so in the case of:

⁶⁶ Furthermore, recent changes in the pattern of rural settlements have created many villages without access to the grid.

⁶⁷ Windmills were used in the Pamirs during the Soviet days to supply isolated settlements.

100. **Water Resources Development and Rehabilitation.** The centerpiece of the recently approved (2002) multi-component *Agriculture Rehabilitation Project* (ARP) was irrigation rehabilitation and attention to increased productivity on cotton farms. Cotton remains vital to Tajikistan and the emphasis in the design of ARP on improved financial viability via greater irrigation efficiency remains sound. So does the concern with further reforms of water management and electricity pricing (for pumps) both considerations vital for sustainability of irrigated farming in Tajikistan. The new project should retain its multi-component nature and target environmental problems such as salinization of irrigated lands. Nevertheless the balance of the proposal's cost could shift towards rural water supply rehabilitation and measures to reduce water-borne diseases. To make this possible, a more aggressive and less conventional search for sources of grant co-financing would be necessary.⁶⁸

101. **Rural Development.** The CSP contains two investment proposals addressing rural development [*Rural Development Project* (RDP) and *Rural Enterprise Development Project* (REDP)]. Both projects envisage a wide range of yet-unspecified interventions that once again (and rightly) seek to combine the objectives of improved livelihoods with the goal of making rural activities sustainable. Viewed from an environmental perspective, the design needs to acknowledge potential threats to sustainability other than water mismanagement, namely the human pressure on sloping lands adjacent to irrigated areas. Attention to irrigated farming pursued under the Water Resource Development and Rehabilitation Project (para. 100) needs to be complemented by action in such adjacent areas. The design should build on the outputs of the associated technical assistance (see para. 94), preferably be watershed-based, and incorporate measures such as sustainable livestock development, planting of fuelwood trees or even micro-hydroelectricity development. Among locations considered particularly suitable for such activities are Karatak and Shirkent watersheds in RRS, the area between Dangara and Khovaling in Khatlon region or the Surkhab watershed in RRS. Promotion of rural water supply rehabilitation and measures to reduce water-borne diseases (e.g., improved waste management in rural areas) recommended under the Water Resource Development and Rehabilitation Project should have place also in RDP and REDP.

102. **Urban environmental improvement.** With the deletion of social sectors from the country program, dictated by macroeconomic and donor-coordination reasons, no investment project is currently envisaged that would address the serious problems of urban water supply, and wastewater treatment and sanitation. Yet, ADB-commissioned *2003 Tajikistan Urban Environmental Profile* provides compelling evidence of the serious health and other consequences of the urban water- and waste infrastructure deterioration. The scale of the unfinished (or not-yet-started) policy agenda is also known and few doubt the importance of reforming the pricing and management of the crumbling networks.⁶⁹ ADB should remain intellectually engaged and informed about developments in the above sub-sectors in the event that changes take place in the "division of donors' labor" or availability of grant funding in the social sectors.

C. Linkages with Government Programs and External Assistance

103. The level and type of ADB engagement in any country needs to be part of an overall framework of development assistance. This requires that proposed ADB TA and loan activities conform to a strategy that is widely shared by others in Tajikistan, and that implementation of

⁶⁸ See para. 87 for suggestions.

⁶⁹ Most difficulties now experienced in the World Bank's Dushanbe Water and Wastewater Project concern not so much the engineering aspect of the project as its policy fundamentals.

programmed capacities is not threatened by absence of complementary measures supported by others. It also requires a common interpretation of the underlying causes of problems and desirable approaches to dealing with them. Finally, any spatial and institutional overlaps must be kept to a minimum. These have not been conspicuously present in ADB's work in Tajikistan so far, a broad informal agreement with other donors about who should finance what rarely rising to a level of genuine consultation.

104. Similar to the situation among Tajikistan's CA neighbors, in addition to national programs, several large transboundary environmental programs with substantial donor funding, in particular the Aral Sea Program, occupy a prominent role and require attention also to coherence between regional and national programs.

105. The activities proposed under the strategy favored in this document can be related to existing Government and donor activities to show the degree of agreement with them. Table 6 below summarizes the main elements. Appendix 3 contains more details on the composition of donor assistance.

D. Performance Monitoring

106. ADB assistance to Tajikistan is only four years old and no post-evaluation reports are yet available. The principal monitoring tools so far have been the routine disbursement and progress reviews of individual projects by ADB staff. These will continue to play an essential role. So will, in due course, project completion and post-evaluation reports. At a strategic level where the contribution of ADB assistance to overall environmental outcomes in Tajikistan is measured, the principal monitoring tool will be an environmental road map. Such map will not cover the entire range of environmental outcomes in Tajikistan but only those areas in which ADB plans to have a substantive involvement, i.e. rural development and rural water management. The map (see Appendix E) expects monitoring of medium-term environmental impact of ADB assistance in Tajikistan in the following areas: (i) extent of salinization of irrigated lands (based on field sample surveys); (ii) average irrigation efficiency in selected river basin segments; (iv) percentage of rural population with access to safe drinking water; (iv) incidence of water-borne diseases in rural areas; and (v) soil and vegetative conditions in selected watersheds. Tajikistan has already developed a number of environmental indicators and used them in recent environmental statistics⁷⁰ and this could facilitate the task.

E. Conclusions and Recommendations

107. Tajikistan provides sufficient reasons to abandon the stereotype view of the country's (and other CIS countries') environmental problems as simply a legacy of the Soviet system. In Tajikistan (but not, say, in the Baltic republics), many aspects of environmental management (public health, water supply, sanitation, protected areas, collection of data, energy supply) were significantly better during the Soviet times than they are now. Some (pesticide use, industrial pollution, one-sidedness of agricultural development, energy efficiency) were worse. It is not necessary to distort the environmental history to condemn the totalitarian nature of the Soviet system or some of its other defects. Command and control are known to be effective in many areas of environmental management and it would be surprising if the Soviet way of doing things did not have some environmental successes to point to. Equally important is to acknowledge a measure of nostalgia for the old subsidized era that often extends to clear preference for technology-based responses to problems, including the environmental ones, as well as

⁷⁰ See, in particular, State Statistical Agency (2002).

resistance to the idea of recovering from consumers the true cost of providing environmental services, long considered an entitlement. ADB's strategy needs to recognize the historical context in order to suitably calibrate its interventions.

Table 6: Linkages of Proposed CSP Activities with Other Existing or Planned Activities in Tajikistan

ADB Potential Project	Other Projects Pursuing Complementary Objectives	Notes
Water Resources Development and Rehabilitation	Reconstruction and Rehabilitation Development Project, Phase II (E3.0million)(UNDP/UNOPS/USAID/ECHO/several others); Enhancing Individual Incomes and Improving Living Standards in Khatlon Region (EU TACIS, E4.0 million.); Support to the strengthening of local governance (EU TACIS \$1.0 million); Farm Privatization Support Project (World Bank, \$20 million, 1999-); Second Poverty Alleviation Project, (World Bank, \$15.0 million, 2000-); Rural Infrastructure Rehabilitation Project, \$20.0 million, 2000-2005; Agriculture Income Generating Project (USAID); WHO water and sanitation activities in Khatlon, Sukhd and Dushanbe	A number of the projects in column 2 are being implemented by, or with the participation of, NGOs. The design of ADB projects should take into account the experience of NGO involvement. Pay attention to the balance of international vs. local NGO involvement Existing projects tend to have a number of different components. Some of them (e.g., improved rural water supply) may feature in more than a single ADB-financed project. It is important to distinguish between extension of activities into new areas and duplication.
Rural Development Project, Rural Enterprise Development Project	Village Development and Pasture Management under Changing Socio-Economic Conditions: Case Studies for Kyrgyzstan and Tajikistan, Swiss Dev. Corporation; NGO activities in non-irrigated lands (e.g., German Agro Action); Activities of FOCUS on slope stabilization activities on GBAO; Drinking Water Supply and Hygiene Education, ECHO, \$352,000, 2002-2003	See the last note above
Improved management of non-irrigated lands (technical assistance)	Support to MOA in the development of a legal framework for land and water use (EU TACIS, \$1.0 million); Land tenure project (under consideration by USAID);	
Improved and coordinated environmental policy-making	National Environmental Action Plan, 2002-(UNDP/World Bank) Development of National Environmental Strategies for Sustainable Development (TAJ,KAZ,KYR) (EU TACIS, E1.8 million, under preparation)	- Action plans completed in 2002 and 2003 under international environmental conventions on biodiversity, desertification, and climate change. Important to be familiar with their contents. -National Sustainable Development Report Rio+10 remains an important document that could be expanded and made better use of.
Improvement of rural energy supply and use	Planned program of mini-hydro rehabilitation and construction by the Islamic Development Bank	IFC/AKFED/EBRD Private Power Development Project in GBAO an important initiative to study
Capacity Building for Regional Water Management Organizations.	UN SPECA; Integrated Water Management and Irrigation in the Fergana Valley (ICWC/SECO); Strengthening the Capacity of Basin Water Organizations (BVOs) for Improved Resource Planning (EU TACIS, E2.4 million); WEMP (WB/GEF);	Recognize that solutions to water management and related environmental problems in the region are interlinked with energy (and other priorities) and act upon that insight

108. ADB's environmental strategy will respond to key environmental concerns identified in this document as (1) the environmental impacts of land use changes, especially threats of land degradation, (2) deterioration of irrigation supplies and loss of fertile land through salinity build-up and erosion; (3) problems related to water supply and water quality, including their impacts on health; (4) adverse environmental consequences of the winter energy deficit; and (5) continued absence of an "environmental road map."

109. ADB need not strive for an environment-centered program of assistance in Tajikistan to contribute significantly to environmental improvements there. Instead, ADB will seek environmental improvement in Tajikistan mainly through integration of environmental considerations into mainstream economic activities without feeling any need to apologize for the seeming abandon of "pure environment". Translated into its investment policy, the approach will rest on the choice of "right" sectors and a design of investment projects that enhances their positive environmental impacts. The approach changes from a defensive one (relying on EIA to ensure that no harm is done) to a pro-active one (seeking best ways of reaping environmental gains in addition to income improvements or other policy objectives).

110. The program retains power rehabilitation and improved water management interventions the environmental importance of which is no doubt. It increases the profile of its rural development activities making them a vehicle of (also) environmental improvement. In rural activities, the need is for a design that embraces pressing environmental problems of rural areas other than the loss of irrigated lands and salinity build-up (health impacts of inadequate waste management, rural energy insufficiency or inefficiency, inefficient pasture management and many others). As to the social sectors, the CSP currently excludes assistance to them on the assumption that (1) other donors (e.g., World Bank) address the most pressing "social sector" issues such as the deterioration of urban water supply and wastewater treatment; and (2) grant funding promised for such activities will materialize. ADB should nevertheless remain ready to re-enter this vital area should these assumptions prove unjustified.

111. The approach recommended here of grafting environmental-oriented objectives onto the design of financially solid investments projects makes it necessary more actively to develop grant co-financing in those cases where environmental improvements are not of a "win-win" kind. Amongst others, ADB should actively seek GEF co-financing for its rural development projects that can (and should) be structured to address some of GEF concerns such as biodiversity conservation or desertification.

112. For some time yet and much more than, say, in Kazakhstan, environmental management in Tajikistan will remain dependent on outside assistance. ADB need not continue to finance this process but must remain intellectually committed to it and try to steer it in the desirable direction. CEA has identified current absence of a widely-agreed "environmental road map" as a critical weakness. A technical assistance project has now been formulated to address it for approval by ADB Management before the end of 2003. The project aims at making the Government better able to generate synergies in donor environmental assistance and improve own ability to formulate policies and strategies in support of a shared environmental vision.

113. ADB's support for regional environmental concerns needs to distinguish more carefully between (1) political issues (such as much of the Aral Sea water-sharing discussion or the water-energy deliberations), (2) technical responses to transboundary problems; (3) knowledge- and experience transfer across national boundaries; and (4) the rest. The strongest case for structuring environmental assistance as regional (rather than national) is clearly in the cases 2 and 3. In Central Asia, support in case 1, with its mixture of political and technical

considerations, has generated disappointingly modest returns for donors' support so far despite the size of potential efficiency and environmental gains involved. As an institution, ADB may well have certain advantages in tackling precisely the complex transboundary governance issues. If it does, however, it must be prepared to commit resources over a long period and be prepared for periodic disappointments along the way.

List of References

Government legislative and policy documents:

Executive Administration of the President. 2003. *Foreign Aid Report on 31 December 2002*, Aid Coordination Unit, Dushanbe

----- . 2003. *Development Partner Profiles*, Aid Coordination Unit, Dushanbe

Majlisi Oli. 2002. *Resolution about the Approval of the Poverty Reduction Strategy Paper*, Dushanbe

Republic of Tajikistan. 1996. *Program of Environmental Education until the Year 2000 and Prospects until 2010*, Dushanbe

----- . 1997. *Government Environmental Program 1998-2008*, Ministry of Nature Protection, Dushanbe

----- . 1996. *The Law on Nature Protection*.

----- . 1997. *Healthcare Sector Reform Program until 2001*, Dushanbe

----- . 2002a. *Proposed Amendments to the Law Nature Protection*, Dushanbe

----- . 2002b. *Poverty Reduction Strategy Report*, Dushanbe

----- . 2002d. *National Sustainable Development Report Rio +10*, Dushanbe

----- . 2003a. *Public Investment Program and Technical Assistance Program 2001-2003*, Dushanbe

----- . 2003b. *National Strategy and Plan of Action for Biodiversity Conservation and Its Rational Utilization*, Dushanbe

State Committee on Land Management and Ministry of Nature Protection. 2002. *National Program of Action to Combat Desertification in Tajikistan*, Dushanbe

Environment-related data and trends

Ministry of Nature Protection. 2001. website www.mop.tajikiston.com

Republic of Tajikistan. 2002. *State of Environment in Dushanbe 2001*, principal authors N. Safarov and T. Novikova, available on the Internet under CEROI (Cities Environmental Reports on Internet) program sponsored by UNEP/GRID

----- . 2002. *Tajikistan 2002: Vital maps and graphics on climate change*, principal author V. Novikov, electronic version, Tajik Met Service, Dushanbe

-----, 2002. *Environment Protection in Tajikistan: Statistical Summary 1990-2000* (in Russian), Dushanbe

-----, 2003. *Tajikistan 2002: State of the Environment*, principal authors N. Safarov and V. Novikov, available also on UNEP/GRID Arendal website <www.grida.no>

Safarov, N. and V. Novikov (2000), *State of Biodiversity in Tajikistan*, Research Laboratory for Nature Protection, Dushanbe

State Statistical Agency. 2001. *Tajikistan in Figures 2000*, Dushanbe

ADB documents:

ADB. 2000. *Tajikistan: Agriculture Sector Assessment*, Manila

ADB. 2002. *Environmental Profile of Tajikistan*, Manila

ADB. 2002. *Report and Recommendation of the President on a Proposed Loan for the Agriculture Rehabilitation Project*, Document RTRP:TAJ 32494, Manila

ADB. 2003. *Special Evaluation Study of the Asian Development Fund VI-VII Operations*, Office of Evaluation Operations, Manila

JFPR /Aga Khan Foundation/CARE International. 2003. *Annual Report 2002*, Project 9008-TAJ

ADB commissioned consulting reports

Electrowatt Engineering Ltd./SMEC Int. Pty Ltd . 2000. *Power Sector Development Project*, Vol. IV, Environmental and Socio-Economic Review, report under TA No. 3207-TAJ

Koelsch, F. 2003. *Tajikistan Urban Environmental Profile*. Consultant report for the Social Sectors Division, East and central Asia Department, Manila

Mott Macdonald Env. Consultants/ DHOI Water & Environment/Tajik NIIGiM. 2001. *Strategy for Improved Flood Management*, report under TA No. 3495-TAJ

Seatec International and Helsinki Consulting Group . 2002. *Capacity Building for Environmental Assessment and Monitoring*, report under TA No. 3614-TAJ

ULG Northumbrian Ltd. 2001. *Agriculture Sector Assessment Project (ASAP)*, report under TA No. 3295-TAJ

Agriculture, irrigation

Bucknall, J., Klytchnikova I., Lampietti J., Lundell M., Scatasta, M. and M. Thurman. 2003. *Irrigation in Central Asia*, Europe and Central Asia region, Environmentally and Socially Sustainable Development, World Bank, Washington, D.C.

UNDP. 2003. *National Human Development Report: Improving Water Management in Tajikistan*. Dushanbe
Regional

ADB. 1998. *Regional Economic Cooperation in Central Asia*, Manila

ADB .2002. *Supporting Environmental Cooperation in Central Asia*, Manila

Biddison, M. 2002. *The Study on Water and Energy Nexus in Central Asia*, consultant report to ADB

Dukhovny, V.A. and V.I. Sokolov. 2000. *Integrated Water Resources Management in the Aral Sea Basin*, a discussion paper for the World Bank, available on
 <www.grida.no/aral/main_e.htm>

Klotzli, S. 1994. "The Water and Soil Crisis in Central Asia – a Source for Future Conflicts?", *ENCOP Occasional Paper No. 11*, Center for Security Policy and Conflict Research, Zurich
www.fsk.ethz.ch/ecop/11

Kobori, I. and M.H. Glantz (eds) .1998. *Central Asian Water Crisis: Caspian, Aral and Dead Seas*, The United Nations University, Tokyo

Le Moigne, G. 2002. *First Outline of a Water Sector Strategy for the Central Asia Republics*, consultant report to Asian Development Bank, Manila

UN ECE /ESCAP. 2002. *The Concept Strategy of the Rational and Effective Use of Water and Power Resources in Central Asia*, Special UN Program for the Economic Development of Central Asia, Working Group on Power and Water Resources, Geneva and Bangkok

UNEP/OSCE/UNDP. 2003. *Addressing Environmental Risks in Central Asia: Risks, Policies, Capacities*, Environmental Governance Series, UNDP Regional Bureau for Europe and CIS, Bratislava

Weinthal, E. 2001. *State-Making and Environmental Cooperation*, MIT Press

Other documents:

ACTED . 2003. *Poverty Alleviation Programme*, a presentation to the Asian development Bank, Dushanbe, 8 May 2003

Aslov, S.M., Boturov, K., and T. Nazarov, 2000. *Environmental Information System in the Republic of Tajikistan*, UNEP/GRID

Eilat, Y. and C. Zinnes (2000), *The Shadow Economy in Transition Countries: Consequences for Economic Growth and Donor Assistance*, Discussion Paper No. 83, Consulting Assistance on Economic Reform II, Harvard Institute for International Development for USAID,

Ekbom, A. and J. Bojo.1997. *Mainstreaming Environment in Country Assistance Strategies*, Discussion Paper No. 1, Environment Group, Africa Region, The World Bank, Washington, D.C.

European Observatory on Health Care Systems. 2000. *Health Care in Transition*, Copenhagen

Mukhmadaliev, Novikov et al. 2003. *The First National Communication of the Republic of Tajikistan to the UN Framework Convention on Climate Change*, in Proceedings of the National Seminar on Climate Change, Dushanbe 4 April 2003, Dushanbe

Regional Environment Center for Central Asia. 2003. *Environmental NGOs of Central Asia: Reference Book*, CAREC, Almaty

Shyamsundar, P., Hamilton, K., Segnestam, L., Fankhauser, S. and M. Sarraf . 2001. *Country Assistance Strategies and the Environment: A Brief*, Environment Department, The World Bank, Washington, D.C.

Skochilov, Y. 2003. "Principal trends in the growth of Tajikistan's NGOs, the role of international organizations in the development of the civil society and assessment of their potential", (in Russian), *Tabiat (Nature)*, No. 75, August 2003, Dushanbe

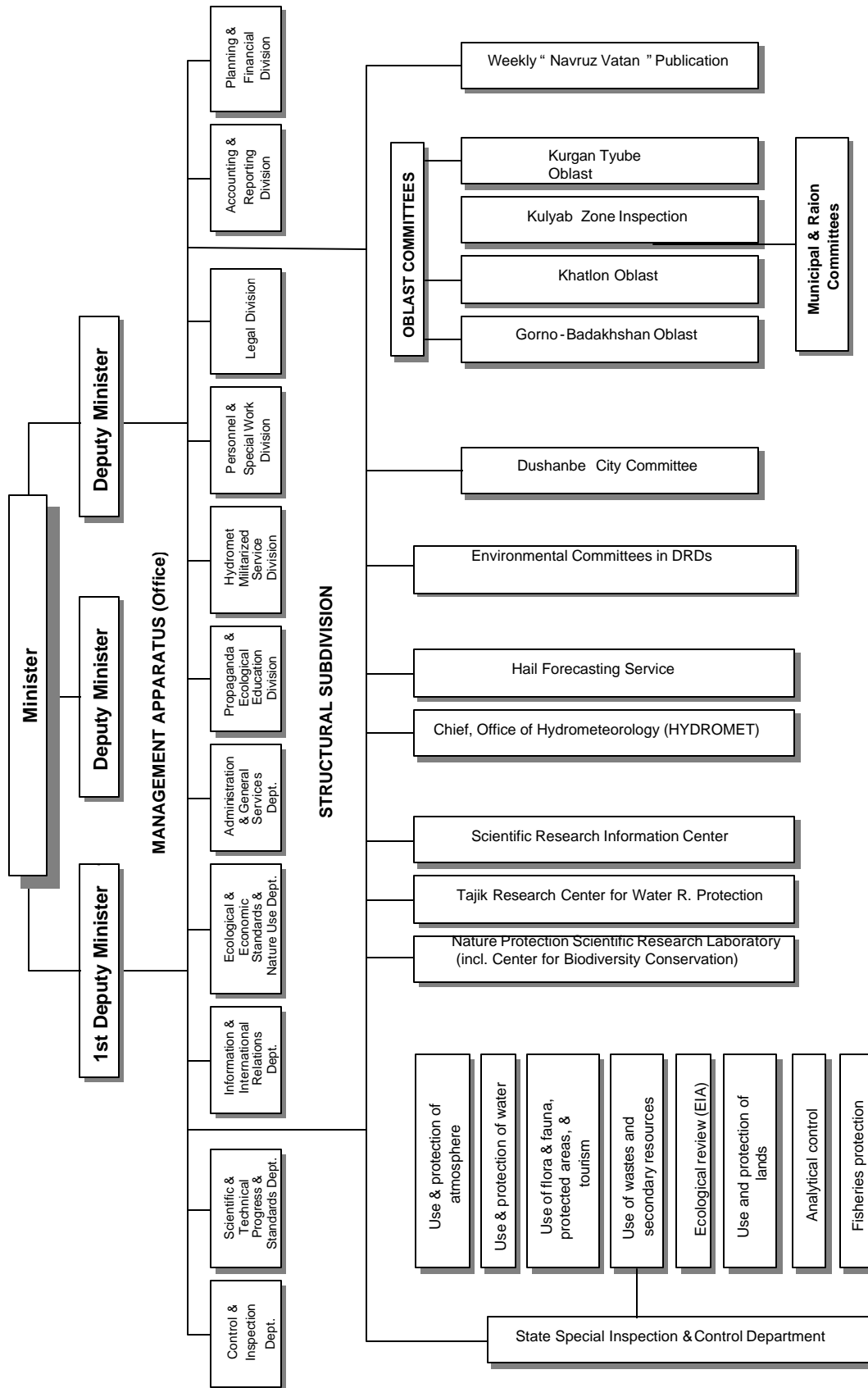
UNDP. 1997. 1998. 1999. 2000. *Tajikistan Human Development Report*, Dushanbe

US Department of Energy. 2002. *An Energy Overview of the Republic of Tajikistan*. Washington, D.C. Available at <www3.fossil.energy.gov/international/taj>

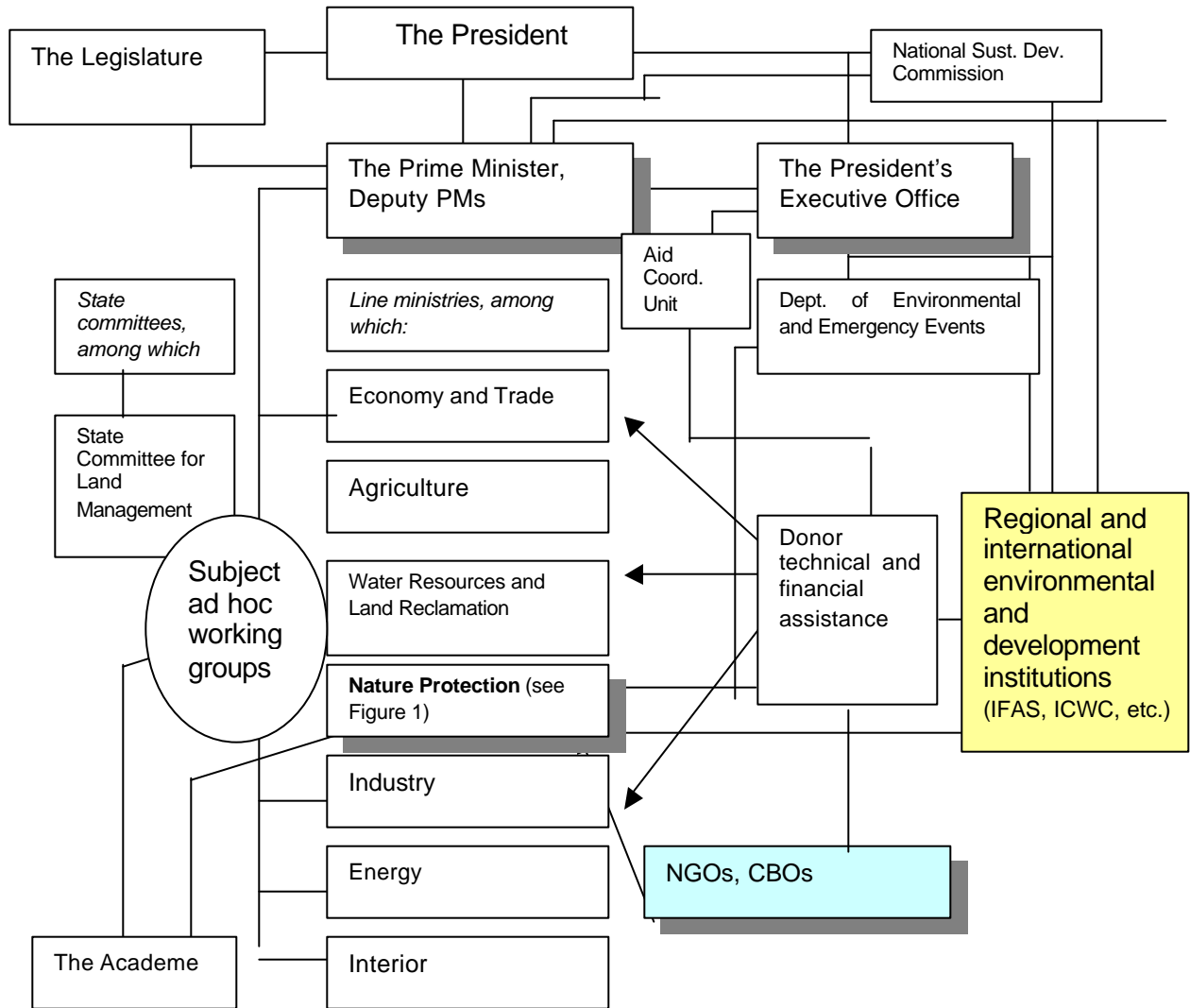
WHO. 2000. *Review of Health and Healthcare in Tajikistan* (in Russian), WHO Regional Office for Europe, Copenhagen, available on <www.grida.no>

World Bank . 2000. *Republic of Tajikistan Poverty Assessment*, Report No. 20285-TJ, Washington, D.C.

Institutional Structure of the Ministry of Nature Protection



Principal Institutional Linkages Relating to Environmental Management at the Central Level



TAJIKISTAN: SELECTED ENVIRONMENTAL DATA AND TRENDS

A. Loss of Irrigated Land and the Salinity Problem

Table A2.1: Evolution of Agricultural Land Use (1991-2001)

	Category of Agricultural Land ^a							
	Cropland ^b	of which <i>dekhan</i> farms	Perennial Crops	of which <i>dekhan</i> farms	Fodder	of which <i>dekhan</i> farms	Pastures	of which <i>dekhan</i> farms
1991 (‘000 ha)	806	0	100	0	22	0	3,286	0
2001 (‘000 ha)	438	293	98	35	19	8	3,186	1,240

^a Only land officially classified as agricultural considered.

^b Largely coincides with irrigable land (see note under Table A2.2).

Source: State Statistical Office: Agriculture in Tajikistan 2002.

Reference in the text: para. 10.

Table A2.2: Area of Irrigated Land Affected by Salinity

Degree of Salinity	Low	Medium	High	Total
Irrigated land affected (ha)	21,032	73,555	21,497	116,200
Irrigated land affected (%)	3	10	3	16
Estimated loss in cotton yields	20-30%	40-60%	>80%	

Note: The figures in Table A2.2 suggest that the total area irrigated is 725,000 ha whereas those in Table A2.1 place that total at less than 450,000 ha. The difference between the two is largely explained by the breakdown of irrigation facilities on more than 200,000 ha since 1991, still counted as irrigated (rather than irrigable) land in the statistics of the State Commission on Land Management.

Reference in the text: para. 10

Source: State Commission on Land Management without date, reproduced in UNDP (1993)

**Table A2.3: Extent of Water-logging of Irrigated Lands, 1996
(ha)**

Selected Locations	Depth of Water Table				
	< 1 m	1.0-1.5 m	1.5-2.0 m	2.0-3.0m	3.0-5.0m
Group of Sukhd <i>rayons</i>	1,572	9,051	11,325	28,750	33,680
DRD	444	1,376	2,692	8,595	13,693
Group of Kulyab <i>rayons</i>	870	5,460	12,180	21,210	13,754
Group of Kurgan Tyube <i>r.</i>	5,974	12,604	23,123	58,925	92,724
Total	8,860	28,491	54,330	117,480	153,859*

Note: *Out of a total of about 500,000 ha of irrigated land. The method of selecting groups of *rayons* for study not explained.

Source: SCLM/MNP (2002), *National Program of Action to Combat Desertification*, p.41

Table A2.4: Use of Fertilizers and Agro-chemicals

Year	Insecticides	Herbicides	Defoliants	Fungicides	Other agro-chemicals	Inorganic fertilizers	Organic fertilizers
			<i>tons</i>			<i>('000tons)</i>	
1992	202	44	500	688	168	n.a.	n.a.
1996	52.5	24	76	1,304*	15	40.4	420
2001						31.9	286

*1994 figure

Note: Sukhd and Khatlon *oblasts* have traditionally accounted for more than 90 per cent of all agrochemicals used in Tajikistan.

References in the text: para. 14 Source: Tajikistan Statistical Yearbook 2002.

B. Air Quality and Discharges Into the Air

Table A2.5: Discharges Into the Air; 1991-2001

Pollutant	1991	2001 (000 tons p.a.)						
	Total (%)	Total (%)	Dushanbe	Sugd oblast***	DRD	Of which Tursunzade*	Khatlon oblast**	GBO
Suspended particulates	28.7	6.5	0.7	n.a.	n.a.	2.4	n.a.	
CO2	17.0	20.9	0.4			18.4		
SO2	42.9	2.6	0.1			0.7		
NOx	7.1	0.5	0.2			0.2		
Other	3.8	1.3				0.2		
Total emitted	100.5	32.2	1.4	4.0	22.1	21.9	4.7	0.0
Total treated	21.0	6.0****						

* Location of Tajik Aluminum Works (TADAZ)

** Location of, among others, Vakhsh Fertilizer Plant and Yavan Chemical Plant

*** Location of, among others, Isfara chemical and metallurgical plant and Anzob met. plant

**** Figure from 1996. In the case of the largest single polluter, TADAZ, the percentage of treatment went up from 12% in 1991 to 6.0% in 2001

Reference in the text: para. 17

Source: State Statistical Office: Statistical Yearbook 2002.

Table A2.6: Volume of Transport: Imperfect Proxies for Mobile Source Pollution

Indicator	1991	2001
Transport of goods (mil. tons)	303.1	34.5
Of which: non-public road transport	223.2	15.8
Public road transport	79.8	15.4
Of which railroads	6.4	12.9
Transport of goods (million ton-km)	13,539	3,141
Of which: non-public road transport	2,034	1,691
Public road transport	11,505	1,295
Of which railroads	9,881	1,247
Passenger transport (million trips)	510	167
Of which: non-public road transport	46	12
Public transport	464	120
Of which buses	376	93
Passenger transport (million passenger-km)	11,322	1,925
Of which: non-public road transport	1,431	318
Public transport	9,892	1,464
Of which buses	3,554	697
air transport	4,900	603

Note: Most transport volume indicators bottomed in 2000.

References in the text: para. 17

Source: Tajikistan Statistical Yearbook 2002, State Statistical Office.

Table A2.7: Vehicle Registrations by Region

Region	Total Number			Of which passenger cars		
	1991	2001	%	1991	2001	%
Sughd		91,395				
Of which Khujand						
Khatlon		46,606				
GBAO		6,803				
RRS		57,449				
Of which Dushanbe		(29,416)				

Source: Ministry of Environment.

C. Water Quality and Discharges Into Surface Waters

Table A2.8: Percentage of Population Receiving Piped Water

	1990	1997	2002
Urban	97.0	95.8	92.0
Rural	51.2	48.3	41.0
Total	65.0	63.4	58.0

Sources: State Statistical Office, UNICEF
References in the text: Para 14 and 17

Table A2.9: Urban Water Supply in Selected Cities, 1998

City	Total water intake (mil m ³ p.a.)	Of this: Per cent from groundwater	Total volume of piped water supplied (mil m ³ p.a.)	Per capita gross volume of piped water equivalent (liters/day/capita)*
Dushanbe:				
Estimate 1 (a)	776	20.3	629	3,345
Estimate 2 (b)	266	70.0	189	1,005
Khujand	69	100.0	55	960
Kurgan Tyube	6	50.0	7	334
Kulyab	22	100.0	21	684
Tajikistan	11,120	13.4	951	443

Note: * Comparable figure for Western Europe is 150-200 l/day/capita

References in the text: para. 14 and 17

Source: State Statistical Office.2002. *Tajikistan: Environment Protection 1990-2000*

Source: *Vodokanal*, quoted in Kloesch (2003), p. 13

Table A2.10: Wastewater Released to Surface Water Bodies

	1991		1995		2001
	Total Waste Water (000 m ³ p.a.)	% of Total Waste Water Treated	Total Waste Water (000 m ³ p.a.)	% of Total Waste Water Treated	
DRD	590	53.3	122	31.2	
of which Dushanbe	173	32.5	4	47.8	
Sukhd <i>Oblast</i>	1,306	48.4	1,392	31.4	
of which Khujand	53	54.7	36	36.9	
Khatlon <i>Oblast</i>	2,606	20.0	3,008	31.5	
of which K. Tyube	15	7.7	27	18.0	
Kulyab	9	44.4	10	54.9	
GBAO	57		0	0	
Tajikistan	4,732	37.8	4,526	31.7	

Notes: (1) In Tajikistan, the amount of wastewater delivered for treatment is a fraction of the water supplied to households and enterprises, less than 20 per cent at present (see Table A2.11 below). (2) Because of very high rate of system losses through leakage and waste, water delivered for treatment is relatively unpolluted. The low percentage of wastewater that is delivered for treatment and treated (or not) is therefore somewhat less worrisome than the high share of water that is not delivered for treatment at all, and, most of all, the huge losses of piped water. (3) The table says little about the efficiency of water treatment

Source: State Statistical Office (Note: blank cells indicate no data available).

Table A2.11: Pattern of Wastewater Treatment

Selected City	Water Supply***		Design Capacity (m ³ /day)	Wastewater Treatment		
	m ³ /day	liters/day/person		Operated (m ³ /day)	Treated (%)	Treated (liters/day/person)
Dushanbe	517,800	900	294,000	275,000	53	478
Khujand	193,200	1,310	65,000	132,000	68	895
Kulyab	64,900	820	25,000	24,500	38	308
Kurgan Tyube	49,900	810	32,000	29,600	59	484
Yavan	16,700	700	n.a.	24,000	143*	1,012
Tursunzade	9,000	240	33,100	7,200	255	188
				23,000**		602

Notes: * Figures indicate that the plants are treated industrial wastewater of enterprises that have own sources of primary water.

** Treatment by sedimentation only

*** The discrepancies between the figure of this table and those of Table 9 may be explained by different times of data compilation.

References in the text: para. 17

Source: *Vodokanal*, date not given but presumed to be 2002; quoted in Kloesch (2003), p.24

DONOR ENVIRONMENTAL ASSISTANCE TO TAJIKISTAN

Technical or Thematic Area of Assistance	Project Titles ^a and Activities (ADB assistance not included, activities shaded target more than a single CAR)	Source of Financial or Technical Support	US\$ mil Unless otherwise stated
Institutional support for mainstreaming sustainable development	National Environmental Action Plan (NEAP) (includes Guidelines for National Environmental Action Planning) 2001-	UNDP/World Bank	0.015+
	National Environmental Strategies for Sustainable Development (under preparation) ; to support a widening of the scope of NEAPs to include sustainable development and poverty reduction issues	EU/TACIS	E1.8
	Capacity 21 – support to the Government to undertake national assessments and prepare National SD Report for the WSSD	UNDP	0.04
	Regional Capacity 21 to improve regional coordination on SD in Central Asia through enhanced capacity of regional stakeholders	UNDP/EU TACIS	0.4
	Legal Database Project. Includes selected environmental documentation	USAID	n.a.
	Land tenure project (under consideration)	USAID	n.a.
	Development of a legal framework for land and water use impl. By MOA	EU TACIS	1.0
Post-conflict reconstruction	Post-conflict Emergency Reconstruction Project, 1998-2000	World Bank	10.0
	Emergency Flood Assistance Project, 1998-2001	World Bank	5.0
	Reconstruction and Rehabilitation Development Project, Phase I (1996-2002), Phase II (2003-), implemented by UNOPS. Among other things, uses revolving funds managed by <i>jamoat</i> development committees	UNDP/USAI D/CARE and others	15.0 (Ph. I), 3.0 (Ph. II)
	Food and Economic Security Project. Implemented by CARE in Varzon and Gissar districts, womens groups, WUAs, micro-credit	USAID	n.a.
	Stability and Food Security, 2001-2003, implemented by ACTED	France	0.2
Broad-based economic development with important environmental repercussions	Enhancing Individual Incomes and Improving Living Standards in Khatlon Region, 2003-	EU TACIS	E4.0
	Farm Privatization Credit, Includes components dealing with land registration, rehabilitation of irrigation and drainage, 1999-2004	World Bank	20.0
	Second Poverty Alleviation Project, implemented by NGOs, 2000-	World Bank	15.0

Technical or Thematic Area of Assistance	Project Titles ^a and Activities (ADB assistance not included, activities shaded target more than a single CAR)	Source of Financial or Technical Support	US\$ mil Unless otherwise stated
	Rural Infrastructure Rehabilitation Project, Includes irrigation and water supply improvement components with monitoring of surface water /groundwater (salinity, TDS, conductivity) and domestic water supply in the project areas. 2000-2005	World Bank	20.0
	Support to Poverty Alleviation, Private Agricultural Productivity and Food Security in Khatlon and Sughd Regions Implemented by UNDP/UNOPS; Local development committees, rehabilitation, revolving credit.	USAID	n.a.
	Irrigation Rehabilitation Project. 2002- Khatlon province, 18,000 ha to be rehabilitated	USAID	3.5
	Agriculture Income Generating Project Implemented by Save the Children Fund; productivity improvements and agricultural diversification in Khatlon. Village Action Committees	USAID	n.a.
	Mountain Societies Development Support Program, since 1993, implemented by AKDN. Emphasis on sustainable development of rural communities, livelihood projects, community and village organization, humanitarian assistance, emergency preparedness.	Multi-source financing	n.a.
	Geogr. focus on GB and Rasht Valley	n.a.	n.a.
	Development of Infrastructure in Khatlon and Rasht Valley, impl. by AKF, Mercy Corps and UNDP		
Information, monitoring	Environmental Information Systems includes <i>Support to National State of the Environment (SoE) Report</i> . A feasibility study to strengthen an environmental information network, 2000	NEP/GRID ENRIN	0.1
	Support to TAJHYDROMET	USAID	n.a.
Disaster preparedness	Fostering Disaster Resistant Communities in Isolated Mountain Areas	ECHO	n.a.
	Lake Sarez Mitigation Project, in part implemented by FOCUS and local NGOs	Swiss/World Bank	4.0
	Disaster Risk Management and Capacity Building Programme, 2003-, Strengthening national capacities for disaster risk reduction, community-based approaches to reduce disaster risk, two pilot projects envisaged	UNDP	0.15
Support for implementing international environmental conventions	National Capacity Self-Assessment to implement Three Conventions - Climate Change, Biodiversity and Desertification, 2003-2004 sometimes as <i>Evaluation and Strengthening of Three International Environmental Conventions</i> or as <i>Tajikistan National Capacity Self-Assessment for Global Environmental Management</i>	UNDP/GEF	0.2
	<i>National Strategy on Persistent Organic Pollutants (POPs)</i>	UNDP/GEF	0.5

Technical or Thematic Area of Assistance	Project Titles ^a and Activities (ADB assistance not included, activities shaded target more than a single CAR)	Source of Financial or Technical Support	US\$ mil Unless otherwise stated
Fostering regional cooperation in environmental matters	Support of the Central Asia Regional Environmental Center Activities	EU TACIS	n.a.
	Initiative on Environment and Security inaugurated at the UN ECE Kiev Conference in June 2003 Environment and Security Initiative –to develop methodology to map env. risks to security and conduct integrated regional assessments of vulnerability to env.stress; identify areas to foster regional cooperation to contribute to peace and SD; integrate env.considerations into security thinking; etc. Phase I – 2003, Phase II – Oct.2003-Sept.2006	OSCE/UNDP/UNEP	n.a
	Support to the Dushanbe Gresh Water Forum , 2003: to ensure wide discussions of the WSSD and the Kyoto Forum outcomes and perspectives of reaching the MDGs related to water in the CAR and Tajikistan.	UNDESA UNDP UNE-AKDN SDC	0.085 0.072 0.03 0.12 0.139
	Support for the REAP implementation	UNEP (ADB funded) / UNDP	n.a.
Addressing the Aral Sea environmental problems	Aral Sea Program Phase I , 1994-	WB/UNDP/UNDP/GEF	41.0
	Water and Environmental Management in the Aral Sea Basin (WEMP) to develop short- and long-term development scenarios of the Aral Sea Basin, to change the approaches to regional water management, transboundary monitoring, water conservation by consumers and other activities (2000-)	GEF/ Neth./ Sweden/ EU WB-implem.	n.a.
	Aral Sea Basin Capacity Development Project : to strengthen EC IFAS in planning activities, to support regional sustainable development, 1998-2001	UNDP/Neth.	1.7
	Aral Sea Region Development and Humanitarian Assistance (1998-2002); emphasis in water management, small business promotion	n.a.	n.a.
	Capacity Building of Water Users for Sustainable Development in the Aral Sea Basin	n.a.	n.a.
	Environmental Policy and Technology Project (EPT) : mproved water supply for affected regions of the Aral Sea Disaster Area in Kazakhstan, Uzbekistan and Turkmenistan. Assessment of water management’s impact on the Syr Daryas tributaries, other studies of the environmental repercussions of the changing Aral sea level, tariff setting, assessment of water supply in Aralsk and Novokazalinsk, river water allocation modeling, transboundary issues, 1993-96; only marginally involving Tajikistan	USAID	22.3

Technical or Thematic Area of Assistance	Project Titles ^a and Activities (ADB assistance not included, activities shaded target more than a single CAR)	Source of Financial or Technical Support	US\$ mil Unless otherwise stated
	<p>Environmental Policies and Institutions for Central Asia (EPIC) Information networking in Central Asia, national improvements in water management, transboundary dialogue and interstate agreements negotiation, climate change, energy and other issues Second phase of USAID Central Asia environmental initiative</p>	USAID/ OSCE	4.7
	<p>Natural Resources Management Program (NRMP) Pilot projects to demonstrate improved water and energy management; support to Regional Water Resources Training Center, improved hydrological information gathering and networking in Central Asia, transboundary dialogue and interstate agreements negotiations (a WEMP sub-project)</p>	UNESCO	n.a.
	<p>Scientific Advisory Support for the Development of the Aral Sea Technical vision for its rehabilitation and improvement; monitoring equipment. Included <i>CA Vision for World Water Forum (2000)</i></p>	EU TACIS	E2.4
	<p>WARMAP Program in the Aral Sea Region development of draft agreements on the shared use of the resources; WARMIS and water use farm management surveys subcomponents; Phases I and II completed. (Phase II mostly in Uzbekistan). Marginal involvement of Tajikistan</p>	Swiss	n.a.
	<p>Hydro Meteorological Services for the Aral Sea Basin Program 1994- includes <i>Hydrological Forecasting</i></p>	US Dept. of State	0.35
	<p>Water Resources Regional Training Centre to increase the capacity of local professionals to equip them for dealing with the problems of the Aral sea</p>		
	<p>Snow-melting forecasts NOAA-assisted development of methodology, testing</p>		
Management of water resources	<p>Strengthening the Capacity of Basin Water Organizations (BVOs) for Improved Resource Planning, 2003-</p>	EU TACIS	E2.4 mil
	<p>Environmental Policy and Technology Project (see above)</p>	USAID	
	<p>Environmental Policies and Institutions for Central Asia (see above)</p>	USAID	
	<p>Natural Resource Management Program (see above) Objective to build consensus on regional approaches to water-energy issues. Also includes support to TAJHYDROMET to improve weather and water data collection, and introduction of automatic heat flow regulators</p>	USAID	
	<p>Dushanbe Water and Wastewater Project, 2002-2006, GOJ (and potential additional IDB and DFID) co-financing;</p>	World Bank/Japan	15.0

Technical or Thematic Area of Assistance	Project Titles ^a and Activities (ADB assistance not included, activities shaded target more than a single CAR)	Source of Financial or Technical Support	US\$ mil Unless otherwise stated
	Service contract signed in Dec. 2002 with a German company.		
	SPECA: Rational and Efficient Use of Energy and Water in Central Asia	UNECE/UN ESCAP	n.a.
	Integrated Water Resource Management in the Fergana Valley 2003-	Swiss/ICWC	n.a.
	Regional Centre for Hydrology . Hydrological Forecasting in Tajikistan, 2001-2003	Swiss	0.68
Climate change	Montreal Protocol: Institutional Strengthening and Assessment of the Potential, Activities related to the Montreal Protocol. Replacement of ozone-depleting items, repair of cooling systems and refrigerators, training. Establishment of the Ozone Center.	UNEP	0.26
	Training of Cooling Industry Technicians	UNEP	0.14
	Recovery and Recycling of Refrigerants	UNEP/ UNOPS	0.3
	Phasing out of CFC-12 in the Production of Domestic Refrigerators "Pamir"	UNDP/ UNOPS	0.17
	South Europe and Central Asia Climate Change Support Fund ; to support initiatives to combat climate change, core capacity building, financing project promoting carbon sequestration, etc. 1995-	DFID, CIDA	2.0
	Enabling the Republic of Tajikistan to Prepare its First National Communication in Response to its Commitments to the UNFCCC; Phase I (2000-2002), Phase II (2002-2003). Phase I: Inventory of greenhouse gas (GHG) emissions; assessment of potential impacts of climate change; analysis of potential measures to abate the increase in GHG emissions and to adapt to climate change; preparation of a national action plan to address climate change and its adverse impacts; and preparation of the First National Communication of Tajikistan to the CoP. Phase II: assessment of technology needs and promotion of technology transfer aimed at climate change, training, vulnerability assessment, public awareness, strengthening of partnerships between stakeholders.	UNDP/GEF	Phase1I 0.4 Phase2: 0.1
Energy efficiency, renewable energy	ESMAP Tajikistan case study	World Bank	n.a.
	SPECA: Rational and Efficient Use of Energy and Water in Central Asia (see above)	UN ECE/ESCAP	1.7

Technical or Thematic Area of Assistance	Project Titles ^a and Activities (ADB assistance not included, activities shaded target more than a single CAR)	Source of Financial or Technical Support	US\$ mil Unless otherwise stated
Public health, hygiene	Drinking Water Supply and Hygiene Education, 2002-2003; handpump installation, education, training. Implemented by FOCUS	ECHO	0.35
	Malaria Prevention Program Based on Community Participation, 2002-2003 National Framework Document on Bio-safety Prevention and Control of Infectious Diseases, 2000-2007 Emphasis on malaria, typhoid and dysentery	ECHO UNDP/GEF USAID	0.21 0.17 8.2
Land degradation, desertification	Preparation of the National Action Plan for Desertification Control, 2000-2001	UNDP/ UNESCO/ Swiss/ UNCCD	0.1
Ecosystem protection	Mountain ecosystems	UNDP/GEF	1.2
	Central Asia Mountain Development sometimes as <i>Pamir High Mountains Integrated Project</i> , Phase II), \$707,000, 2002-2004	Swiss	n.a.
	Land Use Changes in the Tian Shan and Pamir	Swiss	n.a.
	Village Development and Pasture Management under Changing Socio-Economic Conditions: Case Studies for Kyrgyzstan and Tajikistan	Swiss	n.a.
	Development and Conservation of the Mountain Ecosystem of the Tian Shan Mountain Ranges also as <i>Biodiversity in the West Tian Shan Mountain Region</i>	GEF	n.a.
	Central Asian Mountain Partnership Program (CAMP)	Swiss	n.a.
	Improvement of the Dashty-Jum National Park	UNDP/GEF	0.5
	National Biodiversity Action Plan (2001-2002)	UNDP/GEF	0.19
	Biodiversity Conservation and Sustainable Development in the Gissar Mountains of Tajikistan, to start in 2004	UNDP/GEF	0.07
	Biodiversity Conservation in Rainfed Areas/Soils	UNDP/GEF	4.7
	Tajikistan Biodiversity Strategic Action Plan with Clearing House Mechanism; To identify themes and issues of national importance, draft action plans over the short, medium and long-term period and discuss them with key stakeholders. Submit to Government for approval; public awareness and collaboration components	UNDP/GEF	0.2
	Integrated Conservation of Priority Globally Significant Migratory Bird Habitat ; PDF B study development for GEF funding	UNDP/GEF	n.a.

Technical or Thematic Area of Assistance	Project Titles ^a and Activities (ADB assistance not included, activities shaded target more than a single CAR)	Source of Financial or Technical Support	US\$ mil Unless otherwise stated
Biodiversity conservation	Central Asia Biodiversity Conservation (sometimes as <i>Central Asia Transboundary Biodiversity Project</i>): management plans and investment program for four protected areas in West Tian Shan, incl. one in Kazakhstan	WB/GEF/ EU TACIS	14.0
Multi-component	GEF Small Grants Program : (biodiversity conservation, climate change, protection of int. waters through community-based approaches, usually to re-inforce other projects, 1997	UNDP/GEF.	0.9
	National Capacity Self-Assessment for Global Environmental Management	UNDP/GEF	0.9
	Environmental Policies and Institutions for Central Asia (EPIC) (see above)	USAID	n.a.
	Natural Resource Management in Central Asia (NRMP) (see above) , policy development and training in integrated natural resource management, best practice in contamination cleanups, energy-saving technologies, irrigation best practices, and more	USAID	n.a.
	Central Asia Mountain Program (CAMP) various activities to improve livelihoods and protect mountain environments	Swiss	n.a.
	SPECA: Rational and Efficient Use of Energy and Water in Central Asia (see above)	UN ECE/ESCAP	1.7
Environmental education	Environmental Education	Open Society Institute	n.a
Public participation	Regional workshop on implementation of the Aarhus Convention (Dushanbe, June 2002)	OSCE/UNEP/UNDP/UNECE	n.a.
	Support to Aarhus Convention Implementation including the establishment of the Aarhus Center in September 2003	OSCE	n.a.
	Institutional Development of NGOs in Central Asia , 2001	DFID	Stg2.0

^a Often, conflicting titles of projects are used. Bold script is used where the formal title (or its close substitute) was available. Italics are used where exact title was unavailable.

^b The table does not include all regional projects, only those in which Tajikistan has played a sufficiently meaningful role.

^c The table does not in all cases include all co-financing partners. Many different governments and agencies contribute to larger projects and play an important catalytic role. Neither does the table capture NGO activities, some financed by the NGO themselves (e.g. *Medicins sans Frontieres*).

ADB MULTIYEAR ASSISTANCE PROGRAM

Table A4.1: Loans up to 2003

Loan No.	Approval Date	Title	Amount (\$ million)
1651	1998	Post-Conflict Infrastructure Rehabilitation Program	20.0
1705	1999	Social Sector Rehabilitation	18.3
1714	1999	Emergency Flood Rehabilitation	4.7
1817	2000	Power Rehabilitation Project	33.4
1819	2000	Road Rehabilitation Project	19.6
1852	2001	Emergency Restoration of Yavan Water Conveyance System	3.5
1902	2002	Emergency Baipaza Landslide Rehabilitation	5.3
1980	2002	Agriculture Rehabilitation Project	26.5

Table A4.2: Selected Technical Assistance up to 2003

TA No. and Type	Approval Date	Title	Amount (\$)
AO 3114	1998	Institutional Strengthening of the Transport and Energy Sectors	1,500.0
PP 3168	1999	Road Rehabilitation	840.0
PP 3192	1999	Social Sector Rehabilitation	150.0
PP 3207	1999	Power Sector Development Project	850.0
AO 3295	1999	Agriculture Sector Assessment	515.0
AO 3319	1999	Flood Disaster Management and Training	205.0
AO 3495	2000	Strategy for Improved Flood Management	550.0
PP 3514	2000	Agriculture Rehabilitation Project	750.0
PP 3555	2000	Rural Financial Systems Development	150.0
AO 3564	2000	Development of National Poverty Reduction Strategy	150.0
AO 3602	2000	Institutional and Policy Support in the Road Sector	500.0
AO 3614	2000	Environmental Assessment and Monitoring Capacity Building	600.0
AO 3714	2001	Building a Poverty Monitoring Mechanism	300.0
AO 3754	2001	Support for Facilitating Sustainable Benefits	135.0
JFPR9008	2002	Rural Poverty Reduction Project	2,900,000.0
		Under consideration for approval before the end of 2003:	
AO	2003	Developing the Road Maintenance Financing System	
AO	2003	International Development for Environmental Management Policy, Planning and Coordination	
AO	2003	Policy Dialogue and Monitoring for the Social Sector Reform	

Table A4.3: Relevant Regional Technical Assistance up to 2003

TA No.	Approval Date	Title	Amount (\$'000)
5860	1999	Institutional Strengthening and Collection of Environmental Statistics	500
5878	1999	Regional Cooperation for Sustainable Mountain Development in Central Asia	380
5934	2000	Regional Environmental Action Plan (REAP) in Central Asia	500
5941	2000	Combating Desertification in Asia	450
5972	2001	Promotion of Renewable Energy, Energy Efficiency and GHG Abatement Projects (PREGA)	5,000
5996	2001	Ten Years After Rio: Promoting Sub-regional Cooperation for Sustainable Development	200
6001	2001	Regional Consultations for the Third World Forum	1,000
		Under consideration for approval before the end of 2003	
	2003	Capacity Building in Environmental Information Mgmt. Systems in Central Asia	

Table A4.4: CSP Assistance Pipeline for Lending Products, 2004–2006

Project/Program Name	Poverty classification ^a	Them. priority	Division	Year of Prep. Assist.	ADB		
					ADF***	Total**	
2004 Firm Loans							
Agriculture and Natural Resource Water Resources Development and Rehabilitation Project	CPI	ECO	ECAE	2003	25.00	25.00	
Total					25.00	25.00	
2005 Firm Loans							
Transport and Communications Dushanbe-Kyrgyz Border Road Rehabilitation Project, Phase II	CPI	ECO/REG GG	ECTC	2004	20.00	20.00	
Subtotal					20.00	20.00	
Agriculture and Natural Resource Rural Development Project	PI	ECO	ECAE	2004	15.00	15.00	
Subtotal					15.00	15.00	
Total					35.00	35.00	
2006 Firm Loans							
Agriculture and Natural Resource Rural Enterprise Development Project	PI	ECO/PSD	ECAE	2005	15.00	15.00	
Subtotal					15.00	15.00	
Energy Power Rehabilitation, Phase II*	PI	ECO	ECEN	2005	20.00	20.00	
Subtotal					20.00	20.00	
Total					35.00	35.00	
Regional Loans							
2004							
Finance Customs Modernization	OTH	ECO/REG/ GG	ECGF	2002	10.00	10.00	
Total					10.00	10.00	
2005							
Trade Facilitation Regional Tourism Development Project (KGZ/PRC/TAJ/UZB)					5.00	5.00	

ADB = Asian Development Bank, ADF = Asian Development Fund, CPI = core poverty intervention, ECAE = Agriculture, Environment and Natural Resources Division, ECEN = Energy Division, ECGF = Governance, Finance & Trade Division, ECSS = Social Sectors Division, ECO = economic growth, Govt = Government, ECTC = Transport and Communications Division, HD = human development, OCR = ordinary capital resources, TBD = to be determined.

^a Since Tajikistan's national poverty line of 83% is identified, most projects for the country are classified as CPI.

* This loan could become part of the Regional Power Transmission Modernization in CARs, Phase II.

** The amounts of government financing and co-financing currently unspecified.

*** No OCR lending is envisaged

Table A4.5: CSP Assistance Pipeline for Nonlending Products and Services, 2004–2006

Sector	Responsible Division	Assistance Type ^a	Source ^b	ADB-financed Amount* (\$'000)
2004				
Finance				
1. Capacity Building for Customs Modernization (attached to Customs Modernization Project)	ECGF	ID	TA	600.0
Subtotal				600.0
Agriculture and Natural Resources				
1. Water Sector Institutional and Cost Recovery Assessment (attached to Water Resources Development and Rehabilitation Loan)	ECAE	ID	TA	400.0
2. Rural Development	ECAE	PP	TA	300.0
Subtotal				700.0
Transport and Communication				
1. Dushanbe-Kyrgyz Border Road Rehabilitation Phase II	ECTC	PP	TA	500.0
Subtotal				500.0
Total				1,800.0
2005				
Agriculture and Natural Resources				
1. Rural Enterprise Development	ECAE	PP	TA	700.0
2. Strengthening Local Government Agencies in Rural Development (piggy-backed to Rural Devt. Loan)	ECAE	ID	TA	500.0
3. Policy Research on the Role of Remittances in Rural Development	ECAE/ECOC	ETSW	Staff/IAE	
Subtotal				1,200.0
Energy				
1. Power Rehabilitation	ECEN	PP	TA	600.0
Subtotal				600.0
Total				1,800.0
2006				
Transport and Communication				
1. Dushanbe-Kyrgyz Border Road Rehabilitation Phase III	ECTC	PP	TA	400.0
Subtotal				400.0
Social Infrastructure				
1. Social Sector Reform	ECSS	PP	TA	400.0
Subtotal				400.0
Agriculture and Natural Resources				
1. Rural Enterprise Development (attached to Rural Enterprise Development loan)	ECAE	ID	TA	400.0
Subtotal				400.0
Total				1,200.0

Sector	Responsible Division	Assistance Type ^a	Source ^b	ADB-financed Amount* (\$'000)
Regional				
2004				
Trade Facilitation Sector				
1. Regional Tourism Development (KAZ/KGZ/PRC/TAJ/TKM/UZB)	ECGF	RETA	TA	
Subtotal				
Water Sector				
1. Capacity Building for Regional Water Management Organizations in Central Asia (KAZ/KGZ/MON/TAJ/UZB)	ECAE	PPTA	TA	900.0
Subtotal				900.0
Others				
1. Support for Greater Silk Road Initiative 2004–2005 (AZE/KAZ/KGZ/MON/PRC/TAJ/UZB)	ECOC	RETA	TA	2,000.0
Subtotal				2,000.0
Total				3,800.0
2005				
Transport Sector				
1. Harmonization of Cross Border Initiatives for Transport Sector in Central Asia (AZE/KAZ/KGZ/PRC/TAJ/TKM/UZB)	ECTC	RETA		
Total				

ADB = Asian Development Bank, ECAE = Agriculture, Environment and Natural Resources Division, ECEN = Energy Division, ECGF = Governance, Finance and Trade Division, ECTC = Transport and Communications Division, ECOC = Operations Coordination Division, ECSS = Social Sectors Division, ID = institutional development, PP = project preparatory technical assistance.

* Amounts of committed co-financing not given for the time being.