



Regional Cooperation on Disaster Management and Preparedness

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BACKGROUND PAPER¹

I. RISK PROFILE OF CENTRAL ASIA

1. The Central Asian region is prone to a variety of natural disasters that occur frequently and on a very large scale, with potential to affect or kill large numbers of people. Earthquakes, landslides, and floods characterize much of the region, but drought, sandstorms, hailstorms, and snowstorms also cause periodic damage. While progress is being made, inadequate dam safety still creates risks from flooding, including the risk of hazardous mine tailings entering downstream water bodies. Appendix 1 describes some of the recent disasters in the region.

2. A quantitative risk assessment undertaken in 2003² by the World Bank confirms that natural disasters can have a significant consequence for the economic performance of Central Asian countries. More than 90% of the loss potential is from earthquakes, floods, and landslides. A quarter of the total expected loss is caused by events that are predicted to occur on average once every 20 years. Another 38% originate from events that have a return period of 20–25 years. Catastrophic events with an annual probability of occurrence of 0.5% (events expected to occur once in every 200 years) would have a major impact on already vulnerable economies. Expected economic losses from such events exceed 20% of GDP in Armenia, Azerbaijan, and Tajikistan; 10% of GDP in the Kyrgyz Republic; and 5% of GDP in Kazakhstan.

3. Evidence shows that the social and economic costs of natural disasters are increasing. From the 1970s to the 1990s, the number of people affected globally tripled while the decadal economic cost increased by a factor of \$5 billion to more than \$600 billion. More recently, global climate change has become recognized as an additional risk incubator. Increases in frequency and intensity of climatic hazard impacts could exacerbate trends in many vulnerable locations.

II. DISASTER PREPAREDNESS AND MANAGEMENT

A. National Preparedness

4. The Central Asian countries have ministries for emergency situations, which deal with policy aspects, provide training, manage state disaster reserve resources, and provide coordination among different levels of government in developing and implementing emergency plans. The People's Republic of China (PRC) has, since January 2005, a State Disaster Reduction Commission.

- **Legal Framework.** Each country has each own decrees, acts, and laws that serve as legal basis for disaster management.
- **Hazard/Risk Mapping.** Most countries have risk maps. Those in the Central Asian countries were prepared during the Soviet era, but their scale is not suitable for risk management activities. Most of these maps are outdated.
- **Disaster Preparedness Plans.** Countries in the region have made different levels of progress in developing disaster preparedness plans. The PRC has a

¹ Much of the material in this paper is drawn from the *Central Asia Human Development Report. Bringing Down Barriers: Regional Cooperation for Human Development and Human Security*. 2005. New York: United Nations Development Programme; and *Enhancing Regional Cooperation in Infrastructure Development, Including That Related to Disaster Management*. 2006. New York: United Nations Economic and Social Commission for Asia and the Pacific.

² World Bank. 2004. *Preventable Losses: Saving Lives and Property through Hazard Risk Management. A Comprehensive Risk Management Framework for Europe and Central Asia*. Washington DC.

State Natural Disaster Relief Contingency Plan. Kazakhstan has a National Disaster Preparedness Action Plan. The Kyrgyz Republic, with assistance from the Asian Development Bank (ADB), is preparing a disaster risk management (DRM)³ capacity-building program and is making safe storage sites for waste products from metal processing.

- **Structural Measures.** In the Central Asian countries, many protective structures remain from the Soviet era—such as dams, dikes for flood protection, and sediment control devices. These structures lack maintenance, which not only decreases their protective value but also can amplify a disaster when they collapse.
- **Community Involvement.** General awareness for natural disasters, preparedness, and mitigation is very low. In the PRC, a community-based disaster reduction outreach campaign has been launched.

B. Regional and International Cooperation

5. The emergency policies of the five Central Asian countries currently include a regional mechanism through the relevant ministries. In 1993, an Interstate Council for Emergency Situations Regarding Natural and Man-made Disasters was established to coordinate disaster management policies.

6. Central Asian countries also cooperate with each other through a number of regional and bilateral agreements, including

- 1996 agreement between Kazakhstan, Kyrgyz Republic, and Uzbekistan on joint collaboration for the rehabilitation of tailing sites that have a transboundary impact.
- 1998 agreement between Kazakhstan, Kyrgyz Republic, Tajikistan, and Uzbekistan on the joint use of transboundary rivers, water bodies, and hydraulic infrastructure.
- 1999 joint program of action to rehabilitate tailing sites in the countries of the Central Asian Economic Community.

7. Most Central Asian countries participated in the Subregional Initiative for Disaster Risk Management organized by the United Nations Development Programme (UNDP) in 2003 in Iran, to consider DRM initiatives in Central Asia and neighboring countries, including two related subsequent meetings.

8. The PRC is a signing party to the Shanghai Cooperation Organization Agreement on Intergovernmental Mutual Assistance for Disaster Relief and sponsored the Asian Conference on Disaster Reduction, the first ministerial meeting of its kind in Asia.

9. Central Asian countries are parties to many international declarations and summit agreements that stipulate increased preparedness for natural disasters on a national and regional bases. For example, all Central Asian countries, except Turkmenistan, sent a delegation to the World Conference on Disaster Reduction held in January 2005 in Kobe, Japan, and became parties to the Hyogo Framework for Action 2005–2015 (HFA) to pursue

³ The accepted definition of disaster risk management (DRM) is that described by the United Nations' International Strategy for Disaster Reduction as "the systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies, and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and nonstructural measures, to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards."

"substantial reduction" of disaster losses during that period and which calls for increased international and regional cooperation.

10. Two good examples of regional cooperative arrangements are the Asian Disaster Preparedness Center (ADPC), a nonprofit organization based in Bangkok, set up in part by ADB in 1986; and the International Strategy for Disaster Reduction (ISDR). ADPC's main role is to enhance the national and regional disaster management capacities. It undertakes this through a variety of modes, including training programs, promoting and supporting the mainstreaming of DRM in development processes, identifying national and regional DRM issues, and assisting development of strategic solutions. The ISDR is the successor to the United Nations's international Decade of Natural Disaster Reduction 1990–1999. The decade was dedicated to promoting solutions to reducing risk from natural hazards. ISDR was created to move this momentum forward by fostering greater awareness, public commitment, knowledge, and partnerships to implement risk reduction measures of all kinds, at all levels, in all countries.

11. On the donor side, many agencies give assistance for preventive as well as humanitarian emergency actions. Appendix 2 gives some examples from the international community. The Swiss Agency for Development and Cooperation has a regional proactive strategy in operation, while the European has a general humanitarian plan of action. Other agencies are providing country-specific assistance. All the multilateral development banks have policies for disaster assistance. These are listed and compared in Appendix 3.

12. ADB has also been active in providing disaster assistance (Appendix 4). For ADB, responding to disaster impacts in unprepared developing member countries (DMCs) means diverting badly needed development funds to replace social and economic infrastructure that has been lost or dislocated. Carefully prepared country strategies and plans can be destroyed literally overnight, resulting in a huge loss in effort and time. In 2004, ADB adopted a proactive Disaster and Emergency Assistance Policy (DEAP), which aims to integrate DRM into the development process of DMCs, build DMC disaster and hazard risk management capacity, and take disaster risk into account in preparing ADB country strategies and plans and projects. A key element of DEAP is institutionalizing DRM by identifying risks during ADB's country programming schedules and building risk reduction strategies into the project plan. Regarding postimpact recovery, the policy emphasizes (i) rehabilitating critical physical and social infrastructure; (ii) revitalizing basic services; and (iii) jump-starting economic productivity, all in a DRM framework. The principles underpinning DEAP and the action plans stemming from it are similar to the HFA to which ADB, like most nations in this region, is a signatory. ADB is, therefore, assisting DMCs meet their HFA goals.

13. In spite of these efforts, disaster preparedness remains inadequate in much of the region. At the national level, there are needs to update (and in some cases, initiate) disaster legislation, enhance (and in some cases, establish) the national focal agency, and strengthen interinstitutional and intergovernmental (national-regional-local) coordination. In addition, there are needs to improve risk mapping, preparedness planning, improve protective infrastructure, and increase awareness and preparedness in communities. The need for capacity building underlies effective future actions in these areas. Regional cooperation in many of these areas is also necessary, and while some measures are underway, the present situation indicates that more intense cooperation is desirable.

III. STRATEGY AND APPROACH TO MORE EFFECTIVE DISASTER MANAGEMENT

14. An analysis of what transforms a natural event into a human and economic disaster reveals that the fundamental problems of development in Central Asia are the very same problems that contribute to the region's vulnerability to the catastrophic effects of natural

hazards. The principal causes of vulnerability in Central Asia include (i) the persistence of widespread urban and rural poverty, (ii) degradation of the region's environment from mismanagement of natural resources, (iii) inefficient public policies, and (iv) lagging and misguided investments in infrastructure. Development and disaster-related policies have largely focused on emergency response, leaving a serious underinvestment in natural hazard prevention and mitigation. It follows that the most effective way to reduce losses from natural disasters is to integrate disaster risk into overall economic and development processes, i.e., mainstreaming DRM.

15. To mainstream DRM at the national level, the following points comprise a useful general course of action:

- (i) The first overarching issue is to improve governance for DRM. Most countries in this region still deal with disaster risk through response-focused civil defense-type structures. Risk considerations have to be factored in into all aspects and levels of government and society.
- (ii) Disaster risk analysis should be undertaken for all new developments. This not only means ensuring that new development is located and built in such a way as to be more secure but also ensure that new development does not generate new risk.
- (iii) Post-disaster recovery, if not undertaken correctly, too often rebuilds risk and creates the conditions for further and worse disasters in the future. The post-disaster period is, therefore, a unique opportunity to factor risk considerations into development.
- (iv) Treating hazards as dynamic is important: hazard characteristics change, and with it so do the risks. For example, climate change is already altering the frequency, severity, and intensity of hydrometeorological hazards.

16. To give an example of the benefits of mainstreaming a DRM approach, the World Bank recently estimated that, on average, countries can save \$7 in disaster recovery costs for every \$1 spent on risk reduction measures.

17. **Infrastructure Investment.** Infrastructure⁴ is a key issue because infrastructure is basic not only for economic growth but also to bring the benefits of a higher economic performance to people living in rural and isolated areas as well as to enable them participate in mainstream economic activities. Moreover, damage to infrastructure can slow down response and recovery operations. Nevertheless, critical infrastructure—the systems, facilities, and networks that support health, safety, and well-being of citizens (e.g., utilities, transport, and health services)—is destroyed or incapacitated during disasters. Infrastructure damage is estimated to make up two thirds of all flood losses. About 70% of all damage from the December 2004 tsunami disaster⁵ was to infrastructure. Clearly, critical infrastructure needs to be protected from potential natural disasters. At the national level, mainstreaming DRM implies careful land-use planning of such critical facilities as power plants and major roads with consideration to possible occurrence of natural disasters that would help minimize damage. Attention is also needed to building code regulations and enforcement.

⁴ The Asian Development Bank (ADB) uses the definition of infrastructure developed by the Task Team on Infrastructure for Poverty Reduction, which distinguishes “social infrastructure” (such as health, education, and culture) from “economic infrastructure” (such as transport, energy, information and communication technology, and irrigation, drinking water, and sanitation). See Development Co-operation Directive. 2006. *Guiding Principles on Using Infrastructure to Reduce Poverty*. Paris: Organisation for Economic Co-operation and Development.

⁵ The tsunami seriously affected India, Indonesia, Maldives, Sri Lanka, and Thailand. In total, it affected 11 countries.

IV. FUTURE REGIONAL COOPERATION

18. Since many disasters transcend national borders, mitigation would clearly benefit from regional cooperation by sharing resources, experience, and expertise. However, the effectiveness of the existing national and regional mechanisms for natural disaster preparedness in Central Asia is limited due to inadequate funding and capacity, while international development partners, though quick to provide assistance in the event of disaster, have paid little attention to supporting prevention and disaster preparedness.

19. Similar to the Asia and Pacific region as a whole, disaster management in Central Asia has been badly neglected. ADB estimates that 1% (about \$40 billion) of the entire Asia and the Pacific region's gross national income of \$4 trillion is needed to put the needed disaster management infrastructure in place.⁶ An additional \$15 billion is required to restore the infrastructure and economic momentum of countries in the region that are continuously devastated, much due to lack of appropriate disaster risk reduction measures.

20. While developing and mainstreaming national DRM systems are essential, regional initiatives are important. In a region subject to sudden-onset disasters that have wide geographical coverage (earthquakes are the classic example), and where much of the region's transport and communications infrastructure crosses several borders, the need for regional-level services is obvious. Conversely, failure to implement DRM in any one country can affect such infrastructure and, thus, the region as a whole.

21. Regional cooperation for DRM, including infrastructure development, is essential not only to cope with the impacts of disasters but also to help ensure that the region sustains economic growth. Regional cooperation in DRM in the 21st century is expected to respond to development needs in a more flexible manner than the past. Future regional cooperation is expected to focus on emerging natural hazards of increasing intensity or to be incorporated into the DRM process of regional and national development programs.

22. From an international development partner perspective, enhanced regional cooperation in DRM offers attractive opportunities to provide resources. Some partners (including ADB) have separate funds for regional versus individual country allocation. Thus, assistance in regional cooperation serves to enhance, not detract from, country assistance. International partners can assist countries in the region to meet their domestic needs and international obligations (e.g., HFA) through technical assistance and loan support for regional cooperation in such areas as the following:⁷

- (i) **Building Capacity, Training, and Public Support for Disaster Management and Mitigation.** To be successful, regional cooperation needs to build on a strong national institutional base. Specific areas for capacity building are suggested in Appendix 5.
- (ii) **Assistance in Development of National Disaster Management Plans.** Harmonization of such plans across the region would greatly enhance mutual understanding and sharing of resources during emergencies. This must be supported by enabling disaster management legislation (see v below).
- (iii) **Development of National Disaster Information Systems.** Monitoring and reporting on all data related to disasters is essential, not only of occurrences but also types of hazards, potential risks, and available resources and institutions.

⁶ ADB. 2005. *Key Indicators of Developing Asian and Pacific Countries*. Manila.

⁷ This section draws from the experience and plans for regional cooperation on disaster management throughout Asia David Hollister. Priority Needs and Areas for Regional Cooperation in Disaster Management in Asia. Manuscript was prepared as a contribution to the first edition of the *Global Blueprints for Change* and for use in conjunction with the International Workshop on Disaster Reduction convened on 19–22 August 2001 in Reston, VA.

These also form the basis of public awareness campaigns and community involvement in disaster preparedness and mitigation.

- (iv) **Improving Legislative and Institutional Arrangements and Enhancing Political Will.** A cooperative approach to disaster management and mitigation among countries of the region would result in harmonized legislation, enabling cross-border or region-wide actions to proceed rapidly in the event of disaster.
- (v) **Integration of Disaster Risk Reduction into National Development Processes.** As noted, only by such integration can disaster risk management considerations influence decisions of the planning bodies and be supported by adequate investment and expertise in a sustainable manner.
- (vi) **Scientific and Technical Inputs for Disaster Management** (including early warning). There is great scope not only for new research in disaster management in the region, but also for collation, interpretation, adaptation, and application of existing knowledge. Clearly, this would be most effective at the regional level and through regional institutions.

23. Additional details and other recommendations for regional cooperation are given in Appendix 5.

24. Establishment of a task force to develop a regional strategy and determine priorities from among the many DRM needs would be a most useful first step. A partnership of national stakeholders and international development partners would provide a firm basis for future assistance. In this way, bilateral donors, international agencies, and multilateral development banks would be able to coordinate and complement each other's activities toward the goal of optimizing DRM in the region.

APPENDIX 1: NATURAL DISASTERS IN THE CENTRAL ASIAN REGION

In the Central Asian countries, during 1991–2001, around 2,500 people were killed and 5.5 million (10% of the total population) were affected by natural disasters in Tajikistan, Kyrgyz Republic, Uzbekistan, Kazakhstan, and Turkmenistan.

Tajikistan is the most affected Central Asian country in terms of disasters, level of damage and loss of life. Tajikistan each year experiences 50,000 landslides, 5,000 tremors and earthquakes, and hundreds of avalanches and debris flows. According to CRED Database, during 1991–2001 over 66,000 people were made homeless due to natural disasters. The 2003 United Nations Consolidated Appeal for Tajikistan identified disaster response as a priority area because during the first 9 months of 2002, 65 small- and medium-scale natural disasters affected 200,000 people. The most common were floods, earthquakes, mudslides, and landslides. The floods in southern Tajikistan in 1992 that killed 1,300 persons and resulted in 90% loss of gross domestic product that year are indicative of the extent of destruction of life, property, and natural resources that individual disasters in that country can cause.

The Kyrgyz Republic is characterized by frequent small- or mid-scale disasters, low levels of awareness and preparedness, and inadequate response capacity. In 2001–2002, the Ministry of Emergencies and Ecology recorded 784 floods, 91 landslides, 37 avalanches, 18 earthquakes, and nearly 10,000 earth tremors. Seepage from more than 20 nuclear waste storage sites in Mailuu-Suu District in Jalalabad is a permanent and large-scale threat. More than 1,200 natural disasters were registered during 1992–1999, killing more than 400 people and damaging more than 50,000 houses, 222 schools, and 127 health care facilities, as well as roads, electricity transmission lines, water facilities, and others.

Turkmenistan and Kazakhstan are the least vulnerable to natural disasters and best able to respond without external assistance.

The Xinjiang Uygur Autonomous Region in the People's Republic of China is subject to frequent natural disasters. In 2003 alone, there were 12 earthquakes measuring five or above on the Richter scale, killing 289 people with over 2 billion yuan (about US\$240 million) in economic loss. In the same year, spring sandstorms led to a drop in farm yields, with almost no harvest in some places. Storms and hail in the summer months affected 1.8 million people with a loss of 36 lives. As well, there were many floods and landslides.

Mongolia had several years of drought and mass deaths of livestock beginning in 1999. Other sources of disaster in recent years include blizzards and heavy snowfalls, dust storms, floods, earthquakes, and forest and steppe fires. The United Nations Development Programme has been assisting the Government strengthen its disaster management system; change the focus from a military civil-defense approach to a civilian-led mitigation and management approach; and create partnerships between government, donors, nongovernment organizations for cooperation, coordination, and allocation of resources for disaster mitigation.

APPENDIX 2: EXAMPLES OF INTERNATIONAL ASSISTANCE IN CENTRAL ASIA

Donor	Project	Project Cost	Duration/ Approval	Brief Description
Swiss Agency for Development and Cooperation (SDC)	Swiss Disaster Reduction Strategy for Central Asia 2004–2008	US\$1.0 million/year	2004–2008	The program aims to i) increase awareness for disaster reduction, ii) capacity to analyze and manage risks and disasters, iii) increase performance of risk assessments and contribution to disaster reduction, and iv) support development projects.
European Commission	European Union Humanitarian Aid Disaster Preparedness Plan Office (ECHO)	EUR 2.5 million EUR 3 million EUR 1 million	2004 2003 1998–2000	The current Action Plan's specific objectives are to strengthen the capacity of local communities to foresee, respond to, and cope with disasters; and to protect vulnerable groups from likely natural disasters through small-scale infrastructure works. Local response capacities will be strengthened through local disaster management plans, early warning systems, disaster preparedness training, radio communication systems, and public awareness campaigns. Vulnerable groups will be protected from avalanches, mud slides, and flooding through the construction of protection barriers, reinforcement of mountainsides, and strengthening of beds and banks of flood-prone rivers.
World Bank	Lake Sarez Risk Mitigation Project, Tajikistan	US\$0.47 million	22 Jun 2000 – 31 Dec 2006	Aims to help alert and prepare vulnerable people in case of a disaster associated with an outburst flood from Lake Sarez and other frequent natural hazards such as mudslides, rockfalls, avalanches, and seasonal floods.
	Emergency Flood Assistance Project-Supplemental Credit, Tajikistan	US\$2 million	14 Dec 1999 (closed)	
	Flood Emergency Project, Kyrgyz Republic	US\$10 million	26 Jan 1999 (closed)	
	Emergency Flood Assistance Project, Tajikistan	US\$5 million	27 Aug 1998 (Closed)	
	Disaster Hazard Mitigation Project, Kyrgyz Republic	US\$11.76 million	15 Jun 2004–31 Mar 2010	Aims to improve the effectiveness of emergency management and response by national and subnational authorities and local communities to disaster situations and reduce the loss of life and property in key landslide areas of the country.
United Nations Development Programme	Crisis Prevention and Recovery– Strengthening the Disaster Mitigation and Management	US\$725,000	2002–2005	The goal of the project is to strengthen the system of disaster management in Mongolia, bringing it up to international standards

Donor	Project	Project Cost	Duration/ Approval	Brief Description
	System in Mongolia			
	Capacity Building of the Government Department of Disaster and Preparedness, Afghanistan	US\$1.0 million	2005	
	Disaster Risk Management, Tajikistan	US\$95,000		
CIDA	Strengthening Disaster Management Capacity and Good Governance, Tajikistan	US\$50,000		

**APPENDIX 3: DISASTER REHABILITATION AND EMERGENCY ASSISTANCE
POLICIES OF MULTILATERAL DEVELOPMENT BANKS**

Category	Asian Development Bank	World Bank	International Monetary Fund	Inter-American Development Bank	African Development Bank
Coverage	Natural and non-natural emergencies	Natural and non-natural (conflict and technological) emergencies	Natural and non-natural emergencies	Natural and non-natural (technological) emergencies	Natural and non-natural emergencies
Purpose	<ul style="list-style-type: none"> • Reestablish serviceability of capacities in existence before the disaster • Assist in disaster mitigation 	<ul style="list-style-type: none"> • Restore assets and production levels in the disrupted economy • Prevent and mitigate disasters • Facilitate transition to sustainable peace and promote social cohesion, institutional capacity building, and good governance to minimize potential causes for conflict 	<ul style="list-style-type: none"> • Help countries address economic problems caused by sudden and unforeseeable natural disasters • Assist post-conflict countries 	<ul style="list-style-type: none"> • Prevent and prepare for disasters • Repair and rebuild damage to service infrastructure so that countries can resume socioeconomic development 	<ul style="list-style-type: none"> • Assist in emergencies to save and protect lives, salvage property, and minimize the destruction of basic infrastructure • Help with emergency rehabilitation operations • Assist in conflict prevention and resolution
Analytical Assessment for Disasters and Emergencies	<ul style="list-style-type: none"> • Environmental and social assessment 	<ul style="list-style-type: none"> • Watching brief for all or part of a country when continued assistance is not possible to position the World Bank to support an appropriate investment portfolio when conditions permit • Risk and vulnerability assessment • Joint damage and needs assessment 	<ul style="list-style-type: none"> • Policy advise 	<ul style="list-style-type: none"> • Integrated disaster risk management • Risk assessment • Damage and emergency needs assessment • Reconstruction needs assessment 	<ul style="list-style-type: none"> • Policy dialogue and donor coordination initiatives to minimize the recurrence of disasters

Category	Asian Development Bank	World Bank	International Monetary Fund	Inter-American Development Bank	African Development Bank
		<ul style="list-style-type: none"> • Transitional support strategy 			
Assistance Instrument for Disasters and Emergencies	<ul style="list-style-type: none"> • Regular loans • Technical assistance 	<ul style="list-style-type: none"> • Emergency reconstruction loans • Post-conflict assistance • Regular loans 	<ul style="list-style-type: none"> • Emergency assistance loans • Emergency post-conflict assistance • Adjustment program 	<ul style="list-style-type: none"> • Disaster prevention loans • Emergency reconstruction loans • Regular loans • Emergency technical cooperation 	<ul style="list-style-type: none"> • Emergency relief assistance • Regular loans • Technical assistance
Special Facility or Fund for Disasters and Emergencies		<ul style="list-style-type: none"> • Disaster Management Facility • Post-conflict Fund • Country and regional trust funds 	<ul style="list-style-type: none"> • Compensatory Financing Facility • Emergency Post-conflict Assistance Facility • Emergency technical assistance 	<ul style="list-style-type: none"> • Sector Facility for Disaster Prevention • Emergency Reconstruction Facility • Emergency technical cooperation 	<ul style="list-style-type: none"> • Special Relief Fund
Institutional Arrangement		<ul style="list-style-type: none"> • Natural Disaster Unit • Post-conflict Unit 	<ul style="list-style-type: none"> • Focal point 	<ul style="list-style-type: none"> • Emergency focal point and network 	<ul style="list-style-type: none"> • Focal point

APPENDIX 4: ADB ASSISTANCE IN DISASTER MITIGATION AND RECOVERY

The Asian Development Bank (ADB) adopted a policy on disaster rehabilitation assistance in 1987 for small developing member countries (DMCs) and broadened and extended this to all DMCs in 1989. The rationale for assistance was to provide timely interventions that would enable an affected DMC maintain its development momentum. The policy was reviewed in 2002. Analyses showed that three main factors are crucial for project effectiveness:

- good project design;
- effective operation and maintenance of mitigation structures; and
- strong institutional development to support structural and preventive measures, e.g., increased disaster awareness, community preparedness, early warning systems, effective land-use planning, and sound and enforceable building codes. Such measures should be part of the core design of natural disaster mitigation projects and should be integrated into country strategies and programs.

A new policy—the Disaster and Emergency Assistance Policy—was adopted in 2004, which takes a more proactive stance as described in the text.

ADB assistance for emergency rehabilitation and disaster mitigation, including conflict and epidemic situations as well as natural disasters, totaled some \$3.9 billion during 1987–2005. This amount comprised 22 project preparatory assistance for a total of \$15 million; 55 advisory and operational technical assistance, including 14 regional technical assistance (RETAs), for a total of \$48 million; 26 grants for a total of \$954 million; and 52 loans, mostly in the category of “multisector,” totaling \$2,903 million.

APPENDIX 5: APPROACHES FOR REGIONAL COOPERATION IN DISASTER PREPAREDNESS AND MANAGEMENT

A. Initiatives Fostering Regional Cooperation

- *Periodic information dissemination* in the region, whereby a regional information documentation and dissemination center would disseminate information to improve information exchange.
- *Ministerial meetings on disaster management*, which would involve organizing a high-level Central Asian Ministerial Meeting on Disaster Management to secure political support for disaster management.
- *Multistakeholder conferences*, which would be large meetings at the Central Asian level with cross-sectoral participation from government, United Nations agencies, nongovernment organizations, scientific and technical organizations, donors, and regional institutions.
- *Preparation of Central Asian and national disaster management reports*.
- *Vulnerability Atlas for Central Asia*, which would map hazards, vulnerabilities, and risks in countries of the region, similar to the vulnerability atlas of India and the hazard atlas of the People's Republic of China.
- *Scientific and technical cooperation* in disaster management, which would bring existing information on scientific and technical issues into the public domain through dialogue with those national and regional institutions that have hazard, risk, and disaster management information.

B. Capacity Building of National Systems

To be successful, regional cooperation needs to build on a strong national institutional base. Disaster management training and capacity building may be needed to strengthen

- (i) *national disaster management agencies/committees*, which should be established and/or strengthened in every country by developing human resources and enacting necessary enabling national disaster management legislation;
- (ii) *development of disaster management plans*, which are the cornerstone of a national disaster management system and must be backed up by national legislation and prepared at different levels: national, state, and district levels;
- (iii) *national disaster management information systems* to routinely monitor and report on all data related to hazards and vulnerabilities, resources, and organizations;
- (iv) *public awareness and media campaigns*, which are needed to create a greater constituency for disaster preparedness and mitigation; and
- (v) *integration of disaster mitigation in national planning*. The integration of disaster management planning and mitigation into national development processes is necessary to influence decisions of the planning bodies at the national and subnational levels (e.g., settlement planning and housing are important subsectors for enforcing disaster prevention and mitigation measures).

Some Recommendations⁸

Examples from elsewhere in the world show that risks can be substantially reduced through proper preparedness and early warning systems; through insurance mechanisms that not only help respond financially after a disaster strikes, but also provide effective

⁸ Adapted from the Central Asia Human Development Report. Bringing Down Barriers: Regional Cooperation for Human Development and Human Security. 2005. New York: UNDP.

incentives for better construction standards and location decisions; and through coordinated regional responses. Community and civil society involvement is critical.

For regional organizations:

- Make disaster preparedness and response programs high priorities, and clarify the mandates of regional organizations.
- Develop regional risk assessment and planning capacities, early warning systems (especially for natural disaster "hot spots"), and systematic links among relevant national and regional agencies.
- Strengthen information collection and sharing systems at the regional level for disaster management. Regional organizations can provide an opportunity to foster debate on alternatives and bring in experiences from the rest of the world on disaster prevention and preparedness.

For the international community:

- Focus more donor attention on regional natural disaster preparedness and prevention.
- Better regional coordination among donors would enhance their effectiveness.
- Donor funding for research, training, and information management involving regional experts and institutions is critical.