KYRGYZ REPUBLIC

To prepare the Kyrgyz Republic Country DRM Note, the team built upon a technical assistance project supported by GFDRR. This project, –An Action Plan for Improving Weather and Climate Service Delivery in High-Risk, Low-Income Countries in Central Asia–, involved support from the Kyrgyz Hydrometeorological service, which facilitated the work of technical missions in Bishkek and Naryn oblast. The Country Note benefitted from ongoing collaboration with the entities of the sectoral ministries and agencies of the Kyrgyz Republic; in particular, the Ministry of Emergency Situations, the Ministry of Agriculture, Water Resources and Manufacturing industry, the Ministry of Transport and Communications, and the Ministry of Industry and Energy. In advancing the Kyrgyz Republic's hydromet services, the project team benefited from constructive dialogue with representatives of stakeholders during a consultation workshop in Bishkek (December 16, 2008). The World Bank's Bishkek office provided support for these consultations and representatives of donor organizations such as the Swiss Cooperation Office actively participated and supported the underlying technical assistance work.

1. DISASTER RISK PROFILE

The geography and topography of the Kyrgyz Republic makes it a **highly hazard prone country**. These include hydro-meteorological, geological, geo-physical, and biological hazards. Natural hazards include earthquakes, land and mud-slides, avalanches, squalls, downpours, icing, frosts, droughts, breakthrough of glacial lakes, floods, rise of sub-soil waters, epidemics, pests, crop diseases and river erosion. Heavy snowfall in winter leads to spring floods which often cause serious downstream damage. Some hazards, e.g. floods and landslides, are seasonal and occur annually; others, e.g. earthquakes, are rarer events but potentially highly destructive. The country is classified as the most seismically dangerous territory in Central Asia and 3,000 to 5,000 earthquakes are registered annually. Devastating seismic catastrophes occur every 5-10 years. On average, natural disasters cause approximately $30- 35 million of damage and losses annually.

Meteorological Hazards. Kyrgyzstan is located in the center of the largest Eurasian continent, away from significant water bodies, and close to deserts, which defines the drought-prone continental climate of the country. On average, 3-4 extreme meteorological hazards (drastic changes of weather, frosts, heavy precipitation) occur annually covering the majority of the country, there are about 7-10 high-impact mudflows and avalanches, and seasonal river floods happen every year. Destructive mudflows and floods, and large avalanches occur once in several years. Major weather-related risks to agriculture include droughts (especially associated with low water flow in the rivers), late spring and early fall frosts, winter thaws (risks for winter grain cereals), and hailstorms. Floods and mudflows generated by snow-thaw and rainstorms destroy residential houses, dams, other irrigation facilities, roads, bridges and agricultural crops. Over the last few decades the entire Central Asian region (including the Kyrgyz Republic) has experienced an increase in hydro-meteorological disasters. This trend is likely to continue as the consequences of climate change - particularly increases in temperature - will likely increase the frequency and severity of floods and droughts. Climate change may also cause a higher prevalence of infectious diseases. **Approximately half of Kyrgyzstan's GDP is weather and climate sensitive** and would benefit from more reliable hydrometeorological and climate information to improve day-to-day operations and planning. **Current economic losses are estimated to vary between 1.0 - 1.5% of GDP**. Agriculture is the leading sector of the economy and most vulnerable to extreme weather, especially droughts and frosts. Other sectors at risk include transport and communication, construction, energy production and distribution, including domestic heating, health and mining.

Seismic Events. As per the Global Seismic Hazard Assessment Program (GSHAP), **most of Kyrgyzstan lies in a region with very high seismic hazard** (see map below). When fully operational, the national system of seismic monitoring registered from 2,000 to 5,000 earthquakes each year. Among them, 5 to 10 per year are considered strong (felt, but no major damage), while a destructive earthquake (causing infrastructural damage) takes place every 3 to 5 years, and a catastrophic one (causing infrastructural damage and death) every 35 years, on average. During the 20th century more than 500 earthquakes were registered in Kyrgyzstan with a magnitude greater than 5 on the Richter scale. Seismologists also warn of the possibility that strong earthquakes with magnitudes of eight on the Richter scale could strike the capital Bishkek. The most recent destructive catastrophic earthquake (Magnitude 6.6 on the Richter scale) hit the southeast of the Kyrgyz Republic on 5 October 2008. The village of Nura was the most severely damaged, with 74 people killed, including 43 children; 157 people were injured. An estimated 90% of the village infrastructure was destroyed and more than 850 people left homeless.

Landslides. Extensive areas of the Kyrgyz Republic are characterized by the presence of very large landslide hazards. There are about **5,000 potentially active landslide sites**, about 3,500 of which are in the southern part of the country. Stability of most landslides is satisfactory in dry conditions. Landslides are typically activated due to temporary development of significant ground water pressures along the slip planes, with actual mass displacement sometimes initiated within minutes or hours of activation. Such conditions are likely to occur following significant rainstorms and snowmelt. Furthermore, seismic forces large enough to displace landslides may develop during strong motion earthquakes that are rather common in Kyrgyzstan. None of the major landslide areas that threaten villages are equipped with monitoring and warning instrumentation, leaving their populations vulnerable to landslide hazards. Every year landslides cause damage to buildings, roads, power lines, and water supply, heating supply, and sewerage systems, as well as the death of tens of people. On average, about 700 houses are damaged or destroyed per year. The last major landslide disaster occurred on April 20, 2003 when a landslide near Uzgen in Osh Oblast killed 38 people, while 84 families lost their houses.

Uranium Mine Tailings, Rock Dumps and Landslide Hazards. With independence, the Kyrgyz Republic inherited a legacy of environmental damage caused by many years of output-focused mining development, with little regard to

either economic viability or environmental impact. There are five significant locations in the country with old mine tailings and waste rock dumps. A particularly dangerous location is Mailuu-Suu – an impoverished town of about 23,000 people, including about 6,000 in surrounding villages - near the Uzbekistan border upstream of the densely populated and highly productive Ferghana Valley. There was active uranium mining in Mailuu-Suu from 1946 until 1968, leaving behind 23 radioactive tailings and 13 waste rock dumps. The tailings were constructed conveniently near the mill plants and are mostly within the flood plain of the Mailuu-Suu River, which is a tributary of the Syr-Darya. The total tailings volume is about 1.96 million m^3. The total waste dump volume is 0.8 million m^3.

2. DISASTER RISK MANAGEMENT FRAMEWORK

Institutional Setup for Disaster Hazard Management and Emergency Response. The Ministry of Emergency Situations (MES) is responsible for disaster hazard management and emergency response. MES has established departments responsible for preparedness, mitigation, response, and recovery. There is the understanding within government and MES for the need to focus on hazard mitigation efforts designed to reduce the loss of life and injuries, and the economic and social impacts of future events. A detailed set of risk maps has been developed and potential disasters have been classified. The outline of a declaration process was developed to define when each successive level of government becomes involved if a disaster event occurs. Government is, however, anxious to improve the practical effectiveness of its emergency management and response efforts, and there are a number of critical issues that must be addressed and resolved in order to successfully build on the current foundation. Since Independence in 1991, the technical capacity of MES has been reduced considerably and it currently does not have adequate and modern operational procedures in place, or sufficient levels of resources allocated to carry out its mandates. Emergency intervention criteria have not been developed in detail, and there is no well-defined system of functions and responsibilities between the various departments in MES and regional and local administrations to allow for quick and effective intervention in case of emergencies. Also, staff has not received necessary training to adequately respond to emergencies, and most local communities have not been involved in disaster response training thus far.

Legislation and Strategies. Several pieces of relevant legislation have been approved in the Kyrgyz Republic. Some of the important ones are the Law on Tailings and Waste Rock Dumps, the Law on Radiation Safety of the Population of the Kyrgyz Republic, the Law of the Kyrgyz Republic on Protection of the Population and Territories from Natural and Man-Caused Emergency Situations, and the Law of the Kyrgyz Republic on Civil Defense. The legislation is generally acceptable, as it defines authorities, roles and responsibilities at all levels of government and in the private sector. Current issues relate to a lack of regulations to support the primary legislation and the lack of coordination, technology, and resources to implement necessary measures. The Kyrgyz Government sees the National Strategy for Sustainable Human Development, adopted in May 1997, as the appropriate framework for risk management of disaster hazards with the broad objective to reduce the vulnerability of the population and the economy to hazardous processes. In this respect, five specific goals have been set: (i) to provide timely warning to the public of the threat of natural and manmade disasters; (ii) to reduce and mitigate human and material losses from disasters; (iii) to establish a single monitoring system to ensure safety of the population; (iv) to improve disaster preparedness by training the population; and (v) to improve rescue preparedness against disasters. *The Kyrgyz Government recently developed a draft National Emergency Response and Management Plan (NERMP) that will, when approved, serve as a much better structured and funded Government framework for disaster management.*

Status of Hydrometeorological Services. An extensive technical review (financed by GFDRR in 2008-2009) of observational networks and other hydrometeorological infrastructure of the Kyrgyzhydromet has shown that the current condition of the hydrometeorological service fails to meet the needs of the government and the weather and climate-sensitive social and economic sectors for hydrometeorological services, and fails to fulfill the country's international and

regional obligations for weather and climate information including those under the World Meteorological Organization's Global Observation Network. In particular, (i) there is a persistent downward trend in the quantity and quality of measurements at most stations of the ground-based meteorological network, (ii) the condition of the hydrological observational network is unsatisfactory resulting in insufficient quality of the runoff forecast; (iii) the snow survey network is almost destroyed; (iv) no aerological observations are performed which, given the lack of temperature and wind sounding data from Tajikistan and Turkmenistan, significantly affects the quality of weather forecasts, as well as the results of global and regional meteorological model calculations for the Central Asian Region; (v) there is a lack of appropriate communication between stations and monitoring sites of the observational (meteorological and hydrological) network, data collection center, and regional and district-level users; and (vi) the means of forecasting and production of information products, possibly except automated technologies of runoff forecasting in the Syr-Darya River basin, developed with Swiss assistance, fail to meet modern requirements for hydrometeorological services provided to public authorities, the economy and communities. *There is an urgent need for hydromet modernization to reduce the risks to human life and potential damage to Kyrgyzstan's economy as a result of weather and climate events.*

Reducing the financial vulnerability of homeowners and SMEs to natural hazards. Despite major loss potentials from natural disasters, the level of catastrophe insurance penetration in Kyrgyzstan is much too low to mitigate the adverse financial consequences of future natural disasters on the economy, central government and households budgets. In addition, the lack of adequate risk management and risk underwriting skills in the local insurance industry severely impairs the ability of insurers to pay claims in case of catastrophic events. In this context, the Government needs to develop mechanisms for risk transfer and sharing through public-private partnerships, engagement of the insurance industry and consider setting up a catastrophe insurance pool. Unfortunately, the analysis of the insurance markets in the Kyrgyz Republic suggests that the creation of a stand-alone individual country catastrophe insurance pool is unlikely to be economically and technically feasible. The Kyrgyz Republic would thus benefit from the creation of a regional catastrophe insurance pool that would act as a regional aggregator of catastrophe risk and help governments access the global reinsurance market on better pricing terms. The risk pooling arrangement for the Central Asian countries can be modeled after the regional catastrophe insurance facility for Southeastern and Central Europe which is currently being developed by the World Bank, the UN ISDR and the Regional Cooperation Council for SEE countries. The relatively large size of the Kazakhstan economy and the more advanced state of development of its insurance market may also provide for the development of a regional catastrophe insurance scheme on the basis of a national Kazakh catastrophe insurance program. *Such a program could be then extended to the Kyrgyz Republic and other countries of the region.*

Systemic Issues. Under the overall disaster risk management (DRM) approach, risk identification, risk reduction and mitigation, capacity building, risk transfer and emergency preparedness need to be examined for a more effective overall response. In this regard *multi-hazard risk assessments need to be carried out on a priority basis and effective early warning systems need to be developed and strengthened.* The institutional arrangements from the national level down to the community level need to be operationalized and corresponding capacity needs to be built. This needs to be complemented by introducing disaster risk reduction curricula in various national institutions along with general public awareness-raising. A *National Emergency Response and Management Plan* was recently prepared under the WB-funded Disaster Hazard Mitigation Project. The Plan changes the way emergency response should be implemented. What is needed now is for government to consider the Plan and decree to put it in action. *If this is not done, emergency response and management will remain ad hoc.* In most disasters sub-standard construction techniques cause substantial fatalities, therefore the Government should review existing building codes and strengthen enforcement. Learning from the recent Nura earthquake, it is recommended to integrate DRR into sector policy, planning and implementation during the reconstruction phase. The Government should also develop a methodology and system for common post-disaster damage, loss and needs assessment so that a better coordinated and rapid needs assessment could be carried out in case of any future disaster.

3. ACTIVITIES UNDER THE HYOGO FRAMEWORK OF ACTION

HFA Priority # 1: Policy, institutional capacity and consensus building for disaster risk management.

A range of activities have been carried out in the frame of the Disaster Hazard Mitigation Project (DHMP) such as a review of the current functions of MES and its regional administrative agencies involved in disaster management and response, development of a draft of the NERMP, development of a manual with guidelines for emergency management, and development of training programs for civil servants (including simulating an earthquake and a dam breach) and the population. The Emergency Response Centers, both in Bishkek and Osh, were fully equipped with computer and video equipment, which serves as an important place to manage the emergencies not just during disaster events but also for regular transfer of monitoring data from rayons to the GIS center that will be the part of the ERC. *The next step for the Government would be approving the NERMP at earliest convenience, together with an action plan for its implementation, for which support for institutional development would be needed.*

HFA Priority # 2: Disaster risk assessment and monitoring.

Under the DHMP some activities have been completed including supply of the laboratory equipment to assess basic parameters in water as pH, electric conductivity, oxidation reduction potential and temperature and automated monitoring and sampling unit with data transmission radio telemetry transceiver units. A regional seismic network utilizing digital data acquisition and telemetry will be developed to provide a means of detecting and locating earthquakes in real time enabling the immediate notification of MES about a potential risk or immediate damage. The MES ERC has a GIS center that collects data on potential risk areas, especially related to landslides. Books and atlases were prepared by MES. Every year, field inspections of dangerous landslide areas are conducted, however, assessments and monitoring of other potential disasters, e.g. floods is much less structured due to continued weak capacity of Kyrgyzhydromet.

HFA # 3: Use of knowledge, innovation, and education to build a culture of safety and resilience at all levels. Several training programs were carried out for state employees and selected villagers under DHMP. Much more is needed, which would be done after the acceptance of the NERMP. At the moment, DRM is very much an ad hoc activity by responding to a disaster, with little focus on prevention and preparedness.

HFA # 4: Reduction of the underlying risk factors (reduction of exposure and vulnerability and increase of resilience. There is little budget available to make structural improvements to reduce the risk of disasters, e.g. by flood protection embankments and landslide stabilization.

HFA # 5: Disaster preparedness, recovery and reconstruction at national, regional, and local levels. A manual on essential principles of comprehensive emergency management was elaborated and presented to the ministry. It includes the integrated approaches to emergency management, local planning, communications and involvement of NGOs and UN in emergency management processes. Again, the NERMP would put some structure in this.

4. KEY DONOR ENGAGEMENTS

The Kyrgyz Republic receives support for hazard risk management (HRM) from the ADB, the European Union, Swiss Agency for Development and Cooperation (SDC), the UNDP, and the World Bank.

Existing Projects with Donors and International Financial Institutions	Funding Agency International Partners	Allocated Budget and Period(US$)	HFA Activity Area(s)
Country Programs			
Reducing Vulnerability of the Poor to Natural Disasters, to improve the capacity of the national and local authorities for reducing the vulnerability of the poor to frequently occurring natural disasters.	ADB (Japan Grant)	1,000,000 2004-	1
Water Management and Disaster Risk Reduction, which includes awareness training on integrated DRM, grants for disaster reduction, and an earthquake safety project.	Swiss Development Corporation (SDC)	N.A. 2007-2011	3
DRM programme that focuses on preparing for, mitigating and responding to natural disasters, particularly in the south of the country.	UNDP	N.A. 2008-2010	1, 4, 5
Investigation and Analysis of Natural Hazard Impacts on Linear Infrastructure in South Kyrgyzstan.	World Bank (GFDRR)	50,000 2008-2009	2
Improving Weather, Climate and Hydrological Services Delivery in Kyrgyz Rep. (TA project).	World Bank (GFDRR)	75,000 2008-2009	1, 2, 5
Disaster Hazard Mitigation Project (DHMP) to: (i) remediate abandoned uranium mine tailings in the Mailuu-Suu area; (ii) improve the effectiveness of emergency management and response by national, sub-national authorities and local communities; (iii) reduce loss of life and property in key landslide areas.	World Bank (IDA Grant $6.9m), Japan/ PHRD, GoKR	11,760,000 2004-2010	1, 2, 4
Regional Programs			
Central Asia Regional Disaster Preparedness Programme, under the 5th DIPECHO Action Plan for Central Asia (July 08) to enable local communities and institutions to better prepare for, mitigate and respond adequately to natural disasters.	Directorate General EC Humanitarian Office (DG ECHO)	€7,325,000 for all Central Asia); 2008-	
Central Asia Regional Disaster Management Initiative, including (i) disaster mitigation, preparedness and response; (ii) disaster financing and risk transfer; and (iii) hydromet modernization.	UNISDR, WMO, CAREC/ADB, World Bank, GFDRR, bilaterals.	155,000 (GFDRR track 1) in 2008-2009	

5. GLOBAL FACILITY FOR DISASTER REDUCTION AND RECOVERY (GFDRR): ACTION PLAN

As noted earlier, the Kyrgyz republic faces a variety of natural hazards – earthquakes, floods, hail, landslides, mudflows, drought, erosion and desertification. Over the past few decades, these natural hazards have caused extensive damage, and will continue to negatively impact the Kyrgyz Republic unless proactive measures are taken to mitigate and prepare for these hazards.

(i) Building upon GFDRR-funded country and regional studies (to be completed by June 2009), ***modernize Kyrgyzhydromet services under a regional framework***, to reduce the risks to human life and to the economy as a result of weather and climate events;

(ii) Building upon the WB-financed DRM project (closing in 2010) and other donor activities, and to complement ongoing/planned SWAps in health and education sectors, ***strengthen overall capacity to prepare and respond***

to disasters, with a focus on the mitigation of a potential major earthquake in the capital Bishkek and/or another large city; and

(iii) Support further assessment and studies to develop of a risk financing framework for the Kyrgyz Republic, including a ***regional catastrophe insurance pool*** that would benefit the Kyrgyz Republic and other Central Asia countries.

Component I: Reducing the risks to human life and to the economy as a result of weather and climate events

Modernization of National Meteorological and Hydrological Services (NMHS) is primarily aimed at reducing the risks to human life and potential damage to Kyrgyzstan's economy as a result of weather and climate events. It is also intended to fulfill of the country's regional and international obligations, first and foremost, the assessment and management of regional water resources, the improvement of cooperation between the NMHS and final users of hydrometeorological data and information products, and the maintenance of the NMHS capacity by improving its institutional, staff and financial sustainability.

Under the GFDRR-funded study, three modernization options were considered. The moderate cost option was preferred. It is a high impact program designed to achieve many of the objectives of the large scale option, but with less investment in automation of the observing network and implementation of information technologies. Specifically it would allow Kyrgyzhydromet to:

- Achieve the key objective of the modernization, i.e. reduce the risk to life and damage to the economy caused by weather and climate-related events through higher accuracy and longer lead time warnings provided to relevant emergency agencies;
- Fulfill regional and international obligations of Kyrgyzstan through improved quality and reliability of meteorological and hydrological (water discharge/runoff) measurements;
- Provide reliable hydrometeorological data and forecasts to users;
- Achieve a level of Kyrgyzhydromet close to "satisfactory" in terms of technology; and
- Retain Kyrgyzhydromet capacity by enhancing its institutional, staff and financial sustainability.

√ ***GFDRR would co-finance the "moderate cost" option, together with contributions from Government and other donors, possible including IDA. Because Kyrgyzhydromet is critically dependent on the strengthening of the regional hydromet framework for its investments, operations, data sharing and training, GFDRR would also support regional level activities that benefit the Kyrgyz Republic. Estimated GFDRR financing USD 7.5 million, complementing support from Government and other donors.***

Component II: Improving overall capacity to prepare and respond to disasters, and overcome a major earthquake.

There is a need to consolidate and continue enhancing the institutional and technical capacity for disaster management and emergency response supported by the Government and various donors, ensuring a common approach and strengthening critical partnerships and platforms. This would be achieved through the implementation of the National Emergency Response and Management Plan (NERMP).

At the same time there should be more focus on critical gaps: (i) making public facilities such as schools, hospitals and large residential buildings more earthquake resistant, (ii) develop risk assessment methodologies for commercial, indus-

trial and residential buildings and (iii) enhance enforcement of building codes.

In particular, a seismic risk mitigation assessment should be carried out for critical public facilities in large cities such as Bishkek and Osh, to reduce the risk of future earthquake damage to priority public facilities such as hospitals, clinics, schools, administrative buildings and infrastructure. The assessment should also review coordination mechanisms with local, regional, international and non-governmental partners, equipment and training needs, and the establishment of a functioning operations center (at local and regional levels). The result of this assessment would be incorporated in ongoing and planned SWAps in the Health and Education sector, financed by the World Bank and several other donors. Depending on the availability of funding, GFDRR might co-finance the implementation of priority retrofitting/reconstruction of selected public facilities on a pilot basis.

In addition, innovative approaches should be supported to better enforce building codes and compliance with land use plans, notably (i) supporting public awareness of the importance of compliance with building codes and land use plans, (ii) studies to support the enhancement of guidelines and regulations aiming at better enforcement of building codes and land use plans, (iii) initiating voluntary certification of engineering professionals, and (iv) supporting selected district municipalities in enforcement of building codes and land use plans through initiatives streamlining issuance of building permits and introducing transparency measures in issuance of building and settlement permits.

√ ***GFDRR would support the implementation of the National Emergency Response and Management Plan (NERMP) to prepare and respond to disasters, focusing on the mitigation of a potential major earthquake in the country's largest cities such as Bishkek and Osh, through a seismic risk mitigation assessment and the design of a retrofitting program of critical public facilities. In addition, GFDRR would support regional level activities that benefit the Kyrgyz Republic in this area, through the proposed regional Disaster Preparedness and Response Center1. Estimated GFDRR financing needs: USD 1.5 million.***

Component III: Reducing the financial vulnerability of homeowners and SMEs to natural hazards

Despite major loss potentials from natural disasters, there is an almost non-existent level of catastrophe insurance coverage among homeowners and SMEs in the Kyrgyz Republic. In this context, the Government needs to develop mechanisms for risk transfer and sharing through public-private partnerships, engagement of the insurance industry and reduce financial exposure through a combination of internal resources and catastrophic insurance facilities. Unfortunately, the analysis of the insurance markets in the Kyrgyz Republic suggests that the creation of a stand-alone individual country catastrophe insurance pool is unlikely to be economically and technically feasible.

The Kyrgyz Republic would thus benefit from the creation of a regional catastrophe insurance pool that would act as a regional aggregator of catastrophe risk and help governments access the global reinsurance market on better pricing terms. The risk pooling arrangement for the Central Asian countries can be modeled after the regional catastrophe insurance facility for Southeastern and Central Europe– the SECE CRIF – which is currently being developed by the World Bank, the UN ISDR and the Regional Cooperation Council for SEE countries. A relatively large size of the Kazakhstan economy and the more advanced state of development of its insurance market may also provide for the development of a regional catastrophe insurance scheme on the basis of a national Kazakh catastrophe insurance program. Such a program can be then extended to the Kyrgyz Republic and other countries of the region.

1 The principal objectives of the Center would include: (i) further development of national systems of disaster prevention and response, (ii) emergency planning, coordinated management of regional services and resources, (iii) development of effective information-communication systems for collecting, processing and analyzing information in real time, (iv) creation of uniform information-sharing space, (v) involvement in international monitoring systems and networks, including assessment of the seismic hazard in the region, and (vi) cooperation with foreign partners, arrangement of international seminars, trainings, workshops and conferences.

√ ***GFDRR would support further assessment and studies to develop of a risk financing framework for the Kyrgyz Republic, including a regional catastrophe insurance pool that would benefit the Kyrgyz Republic and other Central Asia countries. Estimated financing needs including regional component: USD 1 million.***

Indicative Program for GFDRR Funding *(Projects and engagement areas being considered for GFDRR funding)*	**Potential Implementing Agency / International Partners**	**Indicative Budget and Period (US$)**	**HFA Activity Area(s)[1]**
Component I: Hydromet Services Modernization • Develop the technical design of the hydromet monitoring and telecommunication system • Improve the system of hydromet monitoring to provide timely warnings of extreme and hazardous weather events and to manage water resources: (i) restoration and technical upgrading of the meteorological observational network, (ii) resume temperature-wind atmosphere sounding, (iii) renew key observation sites of the hydrological network, and equip operating posts with the required additional instruments and devices, (iv) restore snow avalanche observation network, (v) establish quality control of hydromet data and products, (vi) strengthen IT base • Institutional strengthening and capacity building, to enhance service delivery, staff training and professional upgrading	Govt. , WMO, IFAS, Switzerland, Germany, Finland, UNISDR, World Bank	7,500,000 2009-2012	1, 2, 3, 4, 5
Component II: Capacity building for DRM and seismic risk mitigation • Institutional development and technical capacity to support the implementation of the NERMP2 • Carry out seismic risk mitigation assessment for Bishkek and Osh, including design of priority retrofitting and reconstruction of selected public facilities (schools, hospitals), to prepare for future implementation under separate donor/counterpart funding • Enforce building codes and compliance with land use plans • Support to regional DRR center	Govt., CAREC/ ADB, UNISDR, UNDP, JICA, UNOCHA (for regional center), World Bank	1,500,000 2009-2011	1, 2, 5
Component III: Disaster risk financing and transfer Develop a risk financing framework for the Kyrgyz Republic, including a regional catastrophe insurance pool that would benefit the Kyrgyz Republic and other Central Asia countries	Govt., CAREC/ ADB, GFDRR, World Bank	1,000,000 2009-2010	4, 5
Total Budget Requested:		**US$ 10 million**	

*Calendar year.

1 GFDRR support through the NERMP would complement and help consolidate other donors' support. A more precise scope of GFDRR support under this component would be discussed and agreed at an upcoming workshop coinciding with the formal approval of NERMP. GFDRR support could include capacity building initiatives on all levels, national and decentralized in oblasts and communities and development of civil society participation.

Expected Benefits of GFDRR Support:

GFDRR support would provide the following systemic benefits:

- **Consolidate and leverage donor support for greater impact,** benefiting from the catalytic role GFDRR can play in bringing together key stakeholders
- **Mainstream disaster risk management within sector programs and projects**, such as the Health and Education SWAps supported by several donors, the Bishkek/Osh urban project
- Enable Kyrgyz Republic to **benefit more from activities carried out at the regional level**, through its increased participation in a regional hydromet center, regional DRR center, and a potential regional CAT insurance pool.

More specifically, GFDRR support would:

- Help the Kyrgyz Republic fulfill its regional and international obligations, first and foremost, the assessment and management of regional water resources, the improvement of cooperation between the NMHS and final users of hydrometeorological data and information products, and the maintenance of the NMHS capacity by improving its institutional, staff and financial sustainability.
- Help operationalize the National Emergency Response and Management Plan (NERMP) through institutional and technical capacity development, and in particular help the vulnerable better prepare for future disasters notably earthquakes.
- Lay the technical and institutional foundation for a potential regional catastrophe insurance pool to benefits Kyrgyzstan's economy, businesses and households through risk pooling, resulting in diversification of risks and reduced insurance premiums.