



REPUBLIC OF UZBEKISTAN  
MINISTRY OF EMERGENCY SITUATIONS

PRIORITY AREAS OF ACTIVITIES  
TO REDUCE THE RISK OF NATURAL DISASTERS  
IN THE REPUBLIC OF UZBEKISTAN  
(in line with the Hyogo Declaration, Kobe, Japan, 22 January 2005)



Tashkent

## PRIORITY AREAS OF ACTIVITIES TO REDUCE THE RISK OF NATURAL DISASTERS IN THE REPUBLIC OF UZBEKISTAN

Over the last decade, emergencies caused by natural and man-made disasters have become more frequent and the risk of emergencies characterized by different genesis has increased.

As a result of various types of natural disasters (earthquakes, tsunamis, hurricanes, tornados, floods, mud-flows, landslides, avalanches and volcanic eruptions) more than 350 thousand people have already died in the XXI<sup>st</sup> century. Unfortunately this number of victims to natural disasters keeps growing every year.

It should be noted that alongside with the unique geographic position of Central Asia the region is highly prone to natural disasters (earthquakes, landslides, mudflows, floods, droughts, etc). The complicated environmental setting existing in the region and other countries of the world is primarily associated with natural and anthropogenic factors. Therefore it is imperative that new ways to address the problem are developed including effective interaction with the world community.

Sarez, a high-mountain lake on the territory of Tajikistan, represents a potential, trans-boundary hazard for the region. It should be noted that the problem of Sarez Lake is becoming increasingly challenging by the year. The lake represents a serious hazard since its water level is constantly rising which may result in collapse of the natural dam. The water outbreak may cause a catastrophic flood along the Bartang, Panj and Amu-Darya river valleys. Calculations have shown that the disaster may affect the area of about 69 thousand sq. kilometers in Tajikistan, Uzbekistan, Turkmenistan and Afghanistan where about 6 million people live. The outbreak of Sarez Lake, apart from human casualties, will result in destruction of thousands of hydraulic structures, bridges, automobile roads, power transmission lines, industrial and civil construction facilities; it will wash out and take out of production tens of thousands of hectares of agricultural land, and destroy a huge number of animals and plants. As a result of destruction of different facilities pollution of water resources, soil and the Aral Sea itself will take place. In this context, efforts to overcome the Aral Sea environmental crisis cannot be considered without due regard for the issue of ensuring safety of Sarez Lake. Sarez Lake can also be regarded as an alternative source of water for the Aral Sea or as a natural reservoir of potable water.

Another regional problem is associated with radioactive wastes of uranium mines. In the last century, extensive facilities for mining uranium and many other mineral resources were concentrated in Central Asia. Unfortunately this means that all countries of the region face the problem of pollution with ore tailings. Facilities which were involved in production, testing and storage of radioactive materials now represent potential hazard of radioactive pollution of environment including water basins and ground water. These include uranium ore tailings: Mailuu-Suu in Kyrgyzstan, Chkalovsk and Taboshar in Tajikistan and a number of other, already closed uranium mines on the territory of the Ferghana valley.

The potentially environmentally hazardous group of ore tailings and uranium mines proper including burial facilities of nuclear wastes in the Mailuu-Suu river basin on the territory of Kyrgyzstan (the total surface area of the radioactive waste disposal site constitutes 1,000 hectares) is located in a mountainous area prone to landslides during floods

and earthquakes. Some of the tailings storage ponds in that area are in an unstable condition. Some of them were constructed on banks of rivers running on the territory of several countries. They threaten to pollute not only the rivers themselves but also ground waters.

Buried uranium ore wastes and 23 tailings threaten to cause a regional environmental catastrophe. As a result of mudflow and landslide processes the radioactive wastes may find their way into the Mailuu-Suu, Karadarya and Syrdarya rivers.

The following types of natural disasters represent potential hazard on the territory of Uzbekistan: earthquakes, landslides, mudflows, floods and droughts. Earthquakes can be extensive and affect large areas. For instance, strong earthquakes that occurred during the XX<sup>th</sup> century in Andizhan (1902), Tashkent (1946 and 1966) and Gazli (1976 and 1984) resulted in huge economic losses and caused human casualties.

Reduction of losses resulting from natural disasters is one of the most urgent problems which affect various aspects of human activities (economic, social and cultural).

Considering the above, being guided by, and taking into account the results of the World Conference for Disaster Risk Reduction (in Hyogo, Japan, January 18-22, 2005) and specifically on the basis of the Hyogo Framework for Action for 2005-2015 the Republic of Uzbekistan has determined its priority areas and is in the process of implementing goal-oriented activities in the sphere of disaster risk reduction.

## 1. Institutional and legal framework

**1.1. Protection of population and territories against disasters of natural, man-made and environmental character is one of the priority areas of the national security policy in the Republic of Uzbekistan.** It is essentially aimed at ensuring safety and protection of population against various disasters and emergencies. In the context of vigorous scientific and technological progress, man-made changes of the natural environment and changes in the geo-political structure of the world, the problems of regulating interaction between the man and the biosphere, harmonization of interrelation between the social advancement and preservation of favorable natural environment, and achievement of equilibrium in the relationship "man-society-nature" are becoming increasingly important.

Addressing these problems requires establishment of common rules and standards of institutional, socioeconomic and legal regulation of social relations between government institutions, enterprises, non-governmental organizations, local governance bodies and population in the sphere of protection of population and territories against natural disasters.

A fundamental document addressing this problem is the law of the Republic of Uzbekistan "On protection of population and territories against emergency situations of natural and man-made character" (adopted on August 20, 1999 in Tashkent).

The law regulates social relations in the sphere of protection of population and territories against emergencies of natural and man-made character. It is aimed at prevention and counteracting development of emergency situations, reduction of losses from emergencies and emergency response. It proclaims citizens' rights to protection of their lives, health and property in case of emergency situation and also defines responsibilities of government authorities entrusted with this mission. The law establishes the main principles, goals, objectives and ways of protection of population and territories against emergency situations by government and administrative authorities at all levels as well as by enterprises,

agencies and organizations. A key feature of the Law is that it involves, through self-governance bodies, people at large in operation of the Government system of emergency prevention and recovery.

The law determines procedures for monitoring and forecasting emergency situations. These functions are delegated to specialized services entrusted with monitoring of natural disasters and man-made accidents and catastrophes. The law also specifies responsibility of organizations, officials and citizens for violation of legislation in the sphere of protection of population and territories against emergency situations. The law of the Republic of Uzbekistan "On protection of population and territories against emergency situations of natural and man-made character" consists of five chapters containing 27 articles.

The law of the Republic of Uzbekistan "On civil defense" (adopted on 26 May 2000, Tashkent) sets out public policy priorities in protection of population and territories, material and cultural values against the possible hazards. The key operational procedures prescribed by the law make it possible to prepare people at large to protect themselves from hazards.

The Law "On civil defense" consists of five chapters containing 23 articles.

1.2. The Ministry of Emergency Situations (MoES) is the key national body for multisectoral coordination and cooperation in the area of disaster risk reduction in the Republic. The Ministry of Emergency Situations of the Republic of Uzbekistan was established by the Decree of the President of the Republic of Uzbekistan #VII-1378 dated March 4, 1996. There are regional (territorial) departments of emergency situations operating in all of the 14 regions of the republic with district emergency units established in individual districts.

There is the State System for prevention of and response to emergency situations (SSPR) established in the Republic of Uzbekistan the structure and operating procedures whereof were defined in the resolution of the Cabinet of Ministers of the Republic of Uzbekistan #558 dated December 23, 1997.

The SSPR is composed of the management bodies, structures responsible for management of emergency epidemiological, epizootic and epiphytotic situations (special danger infections, epidemics, group diseases of unknown etiology, poisoning with toxic agents, mass food poisoning, etc).

### **Emergency situations of environmental nature**

Regional (territorial), as well as District (in certain districts) departments of emergency situations are functional in all of the 14 oblasts of the Republic.

A state warning and response system for prevention and recovery (SSPR) was established in the Republic of Uzbekistan, whose structure and operation procedure is defined by the resolution of the Cabinet of Ministers of the Republic of Uzbekistan from 23 December 1997 under #558.

The SSPR consists of administrative bodies, capacities and resources of the ministries, agencies, and local level governmental bodies. MoES – is a specially delegated state management body for protection of population and territories from emergency situations. Distribution of authority among the structures is specified depending on the nature of a potential emergency situation.

The following is defined in the decree of the Cabinet of Ministers of the Republic of Uzbekistan as from 27 October 1998 under #455 "On Classification of Emergency Situations of Natural, Technological and Ecological Character":

### **Emergency Situations of Technological Character**

Transportation accidents and catastrophes; accidents on chemically dangerous facilities; accidents on fire hazardous and dangerously explosive sites; accidents in energy and public infrastructure systems; abrupt collapsing of building constructions of schools, hospitals, cinema houses and etc.; accidents triggered by the use or storage of radioactive and ecologically hazardous substances; hydro-technical catastrophes and accidents.

### **Emergency Situations of Natural Character**

Geological acts of nature (earthquakes, landslides, rock falls); dangerous hydro-meteorological calamities (flash floods and floods, mudflows, avalanches, high winds (gale), heavy rains); emergency epidemiologic, epizootic and epiphytotic situations (special danger infections, epidemics, clustered illnesses of unidentified aetiology, intoxication by toxic substances, mass food intoxications and etc.).

### **Emergency situations of ecological character**

Situations coming from the changes in the conditions of land (soil, entrails of earth);

Situations coming from the change in the structure and characteristics of atmosphere (air)

Situations coming from the change of the hydrosphere conditions

1.3. There are sector oriented concepts and target programmes on natural disaster risk reduction which are specified depending on the area of activity and nature of disasters. The SSES functional and territorial subsystems' action plans have been developed, approved and are systematically adjusted based on the Decrees of the President of the Republic of Uzbekistan, the Laws of the Republic of Uzbekistan and resolutions of the Cabinet of Ministers of the Republic of Uzbekistan which govern the functioning of the SSES and those of the following bodies:

Ministry of Emergency Situations, Ministry of Interior, Ministry of Higher and secondary special education, Ministry of Public Education, Ministry of Health, Ministry of Defence, Ministry of Agriculture and Water Management, Ministry of Finance, Ministry of Economy, State Committee of Nature conservation, State Committee of Geology and Mineral Resources, State Committee of Architecture and Construction, Academy of Sciences, Centre of Hydro-meteorological Service under the Cabinet of Ministers of the Republic of Uzbekistan (Uzhydromet), State Stock Company "Uzavtoyul", State Stock Company "Uzkimyosanoat", National Holding Company "Uzbekneftegaz", National Television and Radio broadcasting Company "Uzbekistan", National Air Company "Uzbekistan Airways", State Stock Railway Company "Uzbekistan railways", State Stock Company "Uzbekenergo", State Insurance Companies "Uzagrosughurta" and "Kafolot", Uzbek Agency "Uzcommunkhizmat", Uzbek Agency of Communications and Informatization, Uzbek Agency of Automobile and River Transportation, State Inspection "Sanoatkontekhnazorat", National Council of the Red Crescent Society of the Republic of Uzbekistan and others. The primary task of these agencies is to develop and carry out measures which ultimately reduce the consequences of emergency situations of natural and technological character.

A "State Programme on Forecasting Emergency Situations of Natural and Technological Character" was approved by the resolution of the Cabinet of Ministers as from 03 April 2007 under #71.

1.4. MoES accepted a number of international projects for implementation:

The first phase of a joint MoES / UNICEF project "Risk reduction among vulnerable groups of population particularly children and women in six oblasts of Uzbekistan mostly exposed to natural disasters" has been finalized (for the period from 01 April 2007 to 30 June 2008). The primary goals of the project are:

To train populations on action planning skills before natural disasters, as well as to response during and after natural disasters in order to reduce the damages from their consequences

To strengthen the capacity of the Population and Administrative Bodies Training Centres (MBTC) under the regional Departments of Emergency Situations (DoES) to coordinate and carry out measures for natural disaster preparedness of mahallas (communities), schools, nursery schools and medical facilities.

Project partners:

Ministry of Emergency Situations of the Republic of Uzbekistan (MoES) jointly with the Representative of the UN Children's Fund in Uzbekistan (UNICEF), with participation of ministries of Public Education (MoPE), Health, and "Mahalla" Fund implemented the project aimed at reducing the damages from natural disasters among the vulnerable groups of population, particularly women and children.

The project was carried out in 6 oblasts (Bukhara, Qashqadarya, Samarkand, Syr-Darya, Fergana and Tashkent).

Presently, MoES signed a Memorandum of Understanding with the Representative of UN Children's Fund in Uzbekistan (UNICEF) on implementation of the second phase of the project where 9 more oblasts of the republic will be included.

1.5. In Uzbekistan, construction of public sector is strictly governed by the Construction Norms and Rules "KMK 2.03-65". Having been developed through engagement of a large number of institutions, it was approved by the Decree of the State Committee of

Architecture and Construction of the Republic of Uzbekistan on 12 December 1995. It was set into action from 01 March 1996. The seismological section of the project was developed by the Seismology Institute of Academy of Sciences of the Republic of Uzbekistan. A new classification of soils has been developed and integrated, the frequency of various seismic intensities were specified for 361 populated zones of Uzbekistan. Actions are being taken on micro-zoning of highly seismic oblasts.

Realization of a National Programme on Development of School Education is under way for the period of 2004-2009. Only in 2008 within the programme frame, the State Inspection Commission approved the use of 1856 (99.7%) secondary schools whereof 68 - newly constructed, 560 - fully reconstructed, 778 - underwent major repairs, and 430 - maintenance repairs. The programme on construction of academic lyceums and colleges will be accomplished in 2009. Construction of the mentioned educational institutions is carried out taking into account the seismic activity of the locations.

1.6. Financial support for prevention of and recovery from emergency situations is specified in chapter 5 of the Law "On Protection of Population and Territories from Emergency Situations of Natural and Technological Character".

1.7. Special article of the Law "On Protection of Population and Territories from Emergency Situations

of *Natural and Technological Character*” is devoted to participation of public authorities in the sphere of civil protection. It is these bodies that ensure involvement of the widest layers of population in resolving the most important state objective on protection of population and territories.

Since 2000, the Red Crescent Society has been carrying out according to the legislation of the Republic of Uzbekistan a task-oriented activity among the population on promotion and education of preparedness to emergency situations and disaster response on public level (mahalla, village, town...).

## **2. Assessment and monitoring of disaster risk factors and enhancement of early warning**

2.1. A mapping system was created in the Republic of Uzbekistan to evaluate various hazards and potential risks. In particular, seismic zoning maps OCP 2001 of the territory of Uzbekistan (S 1:1000000) were developed which specify recurrence (frequency, periodicity) of earthquakes on various levels of recurrence and risk. Seismic zoning maps of Tashkent city; micro-zoning maps of 26 large cities of Uzbekistan on scales of 1:100000; maps of type designs of the territories relevant to the complexity of geologic-engineering conditions, seismic activity potential, seismogenic zones and other potential sources of natural and technological hazards; maps of maximum possible earthquake magnitudes; maps of hydro meteorological factor risks were developed and compiled.

2.2. Vulnerability assessment of assets and capacities is carried out continuously by the operational and territorial subsystems of the SSPR.

2.3. Emergency situations risk monitoring is conducted by the Monitoring and Forecasting Centre of MoES by sectors: Uzhydromet, Seismology Institute, State Service on Geological Phenomena Monitoring, State Sanitary-Epidemiologic, Veterinary and other services.

2.4. In case of emergency situations on republican level, the governmental commission comprised of stakeholder ministries and agencies conducts analysis of the socio economic and ecological consequences and losses. The results of the analysis are shared with stakeholder structures by way of recommendations for making decisions and conducting urgent measures.

2.5. For the population of the republic, there functions a centralized state early warning system which goes down to district level and performs by means of sirens, loudspeakers, television and radio broadcasting, as well as by the special local early warning systems on dangerous facilities.

Within the framework of the SSES system, there also exists a well-adjusted system where non-governmental organizations share information on emergency situations of natural and technological character.

Specifically, mobile (cellular) communication companies have been used since 2007. In this way, the population is provided in advance with information on potential hazardous natural phenomena (avalanches, mudflow dangers, floods, and etc.).

## **3. Mechanisms of Creation Safe Conditions and Countermeasure Capacities**

3.1. Emergency Situations Management Centre functions within the structure of MoES which generalizes the information gathered from the SSES sector monitoring systems and renders relevant decisions.

### **3. Mechanisms for creation of safe conditions and potential for resilience**

3.1. In the structure of MES, the Center for Management of Emergency Situations summarizes the information from the sectoral monitoring facilities of the State System for Early Warning and Actions and takes appropriate decisions. The unified computer data base on disaster risk reduction was created, for all types of disasters.

3.2. The scientific and technical council was formed and functions, that provides expertise of scientific and technical research for protection of the population and territories in emergency situations of natural and technological character. The results of the applied research works of scientific organizations are introduced in the practice of the relevant organizations.

3.3. The training programs for all categories of population are aimed at ensuring safety of life activities.

The specially designed educational programs, approved by Ministry of People's Education and Ministry of High Education, embrace the pre-school institutions, secondary schools, colleges and universities, and the Institutes for Upgrading of Teachers.

The strategy for prevention and recovery from emergency situations was upgraded, by strengthening the involvement of the mahallas (lowest administrative unit) in the activities in preparedness and mitigation of natural disasters.

3.4. The training of the senior personnel of the local executive authorities, enterprises and organizations is provided on the basis of the Institute of Civil Protection of the Ministry of Emergency Situations. In the regions training is provided by the Centers for preparedness of population and executive staff of local structures of MES. The annual training program is approved by the head of the civil protection – Prime Minister of the Republic of Uzbekistan.

Training of population is carried out at institutions, enterprises and organizations in accordance with the specially developed program, as well as through the mass media – printed press, radio, and TV.

The legislation stipulates that information in the field of protection of population and territories in emergency situations is open, and the organs of state power and administration, the self-governance structures, administration of enterprises and organizations are responsible for the timely and accurate informing the population through the means of mass media and other channels.

### **4. Means/Instruments of risk management**

4.1. Among the positive examples, demonstrating the connection between management and practical reduction of risk are the earthquake resistant construction on the basis of seismic zone maps, mudslide prevention facilities, preventive immunization, etc.

4.2. Financing of activities in prevention and recovery from emergency situations in the sphere of protection of population and territories is provided by organizations, state executive authorities, and other sources. In case of absence or insufficiency of funds available for recovery and reconstruction, the means of the reserve fund of the Cabinet of Ministers of the Republic of Uzbekistan can be used. The procedure of forming the capital assets for addressing the issues in protection of population and territories are defined by the

legislation.

## **5. Preparedness for emergency situations and planning**

5.1. Coordination and management of the basic preparedness of population are effected by the Ministry of Emergency Situations of the Republic of Uzbekistan. The Ministry organizes regular exercises and training aimed at preparedness of capacities and resources and activities aimed at mitigation of emergencies.

Projects within the program of prevention of emergencies at the community level (neighborhood, village, small town) are implemented jointly with the Red Crescent Society (cleaning of drainage systems with the purpose of lowering the ground water level, cleaning of river beds, canals, valleys for ensuring safe passage of rainstorm mudslide flows).

5.2. The state provides annual funding for replenishment of the fund and the emergency stock of food, medicines and other resources necessary for providing the support for population in case of relocation to the safe area in case of emergency situations.

5.3. Coordination for preparedness for response in the territory of Uzbekistan is the responsibility of the Ministry of Emergency Situations of the Republic of Uzbekistan. The resources and means of MES are assigned to each administrative-territorial unit of the Republic.

## **6. Use of the best practice in disaster risk management**

In the territory of Uzbekistan such natural hazards are present as earthquakes, landslides, mudflows, floods and drought. Earthquake is the disaster that causes the largest aftermath. For example, the strong earthquakes that took place in the 20<sup>th</sup> century in Andijan (1902), in Tashkent (1946 and 1966), in Gazli (1976 and 1984) caused great economic losses and large numbers of casualties.

The earthquakes with magnitude of 7.0-7.3 degrees in Iran, Armenia, Japan and Turkey killed tens of thousands people. Three earthquakes of the same magnitude in Uzbekistan caused death of only eight persons. This indicates the high level of seismic zoning and the earthquake resistant construction, and can serve an example of effectiveness of measures.

## **7. Priorities in disaster risk reduction**

The emergency situations of the recent years, accompanied by large human and material losses, attracted the attention of states to this issue that requires improvement in functioning of special services, as well as cooperation in prevention and response to emergency situations.

The timely prevention of all types of emergency situations and immediate response to the arising emergencies requires, like never before, the well functioning nation-wide system of response.

The unique geographic location of Central Asia makes natural disasters like earthquake and floods inevitable in the region. Resolving of the current trans-national ecological problems determines the future of the economy of the region and the political stability in the countries.

At present, great danger for the countries of Central Asia is posed by such natural phenomena as earthquakes, floods, landslides and mudflows, as well as by possible terrorist acts aimed at destruction of dams, burst of high altitude lakes, etc.

The priority issues in the territories of Central Asia countries, along with the problem of the Aral Sea, are the following:

- Reduction of risk of trans-border spread of radioactive waste through enhancing protection of nuclear waste tailings, abandoned mines and other sources of contamination from earthquakes, mudflows, landslides, avalanches, and unauthorized use
- Study of ecological, seismic-ecological effects of intensive filling of the artificial lake Aidarkul (the Navoi region)
- Reduction of risk of burst of Lake Sarez.

Study of these issues with participation of international experts and utilization of experience in reduction of risk of disasters is of priority importance for all countries of Central Asia.