



Country Report 1

Annually on the territory of our republic occur a lot of disasters, prejudicial to economy of the country, sometimes with loss of lives. The great majority of disasters are connected with the intensification of geological and hydro-meteorological processes, such as earthquakes, earth falls, mudflows and floods, erosion processes and etc.

Tajikistan territory concerns to be one of most active seismic regions of Central Asia and world as well. Within Tajikistan the zone of contact of two largest mountain structures, Pamir and Tien Shan is located. There is an opinion, what exactly here occurs collisions of the Indian and Asian plates. Zones of intratelluric Pamir-Gindukushskih earthquakes are possible to be considered as the result of this collision. Extending up to depths 400 kilometers and distances a little some of thousand kilometers. Annually in this zone, which is taking place in immediate proximity from Tajikistan border, on Islam republic Afghanistan territory, occur 1500 earthquakes. Strongest of them are felt by measured 6-7 on the Richter scale on southwest Pamir and 4-5 measured in all territory of Central Asia. Such earthquakes occur, on the average, 1 time a year; and rather weak, but appreciable, some times in one year. Actually by force of the intratelluricness of these earthquakes the destructive consequences from them, are not so appreciably even in epicenter. The inhabited localities, Ishkashim, Shugnan and Rushan regions and GBAO suffer most from massive earthquakes.

In Tajikistan territory annually occur 600 earthquakes 2-3 measures on the Richter scale that makes 80 % from total number of all earthquakes of Central Asia.

Last century on territory of republic there were three catastrophic earthquakes, they are - Karatag earthquake in 1907, Sarez earthquake in 1911, Hait earthquake in 1948. Under fragments of clumps (Sarez earthquake landslide hamlet Usoi was completely destroyed with all inhabitants. Partitioned off by a landslip, Murgab River soon has flooded large hamlet - Sarez. In result was formed the Sarez lake, the question of which interests the experts from all ends of our planet. A landslip appeared in result of Hait earthquake, moving with huge speed has devastated a plenty villages, buried under itself 28 thousand human life.

Last destructive earthquakes of the XX century were Isfara earthquake in 1977, Djirgital earthquake in 1984, Kayrakum earthquake in 1985 and Hissar earthquake in 1989, as the consequence - large economic damage was put to the country and hundreds of human lives were lost. Large landslip appeared as the result of Hissar earthquake, became the reason of 274 deaths and 30 men were made homeless.

During 1998-2000 years, in territory of republic of earthquake by force up to 7 measures have taken place in Dangara (September 3, 1998), Hissar (March 27, 1999), Farhor (October 31, 2000) and Rogun (January 9, 2002). Though the intensity of earthquakes was not high, the destructions were significant. Were completely destroyed 372 private houses, and 2500 are partly damaged. Without any loss of life, fortunately.

The catastrophic earthquakes in Hait (Tajikistan) and Ashkhabad (Turkmenistan) were an incitement to the beginning of active researches of a circle of questions connected to a nature of earthquakes occurrence and an opportunity of their prediction.

One of the most dangerous hydro-meteorological phenomena by its consequences is excess rainfall. The average number of cases with strong rainfalls on republic territory is insignificant and halts between 0,1 and 6 days. But at the same time maximum amount of days with strong rainfall is necessary, mainly, for spring months, and in high-mountainous areas - for summer.

Mudflows are observed in foothill and mountain areas of Tajikistan at heights up to 2000 meters. The risk of mudflows exists on 84 % of the republic territory. Annually these phenomena destroy the irrigation structures, bridges, highways and inhabited localities, covers whole ground alluvial deposits.

The presence of abrupt slopes, running soil in combination to high seismological activity make landslips the widespread phenomenon in the country. The most active zones of earth fall activity are located at height from 700 up to 2000 meters above a sea level. In the country is registered about 50 thousand earth fall places, 1200 of which represent threat for the population of republic.

During the ten years' period 1991-2000 more than 90% of the population became victims of the dangerous natural phenomena, was lost in result of severe meteo and hydrological phenomena.

According to prognostic evaluation, nearest 10-20 years in such acts of nature as the floods and droughts, will become more frequent phenomena.

For the period 1996-2002 the economic damage put by a drought 2000-2001 years has made almost 50 % of total damage from all acts of nature. For the same period the material damage from mud flows and floods has made 33 %, and from earthquakes - 90 %. The significant material damage from acts of nature was observed in 1993, 1997 and 1998.

Only for 9 months of year 2003 the acts of nature put damage at rate of 35 000,000 of US dollars. 8418 apartment houses have suffered, 836 are destroyed completely.

As more than 90 % of territory of Tajikistan is covered with mountains, development and effective utilization of unfitted areas, population safety of cities and industrial objects from acts of nature is an extremely urgent task. The acts of nature are dangerous by their suddenness, however their consequences can be prevented or are considerably reduced at the beforehand-accepted measures. For this purpose it is necessary to associate the existing efforts in one uniform system. Presently the measures of prevention and liquidation of consequences of nature acts are not prepared because of bad organization and sometimes-bad management. Besides the especially branch interests complicate the interaction of regulatory bodies at liquidation of emergency situations, that has negative influence for realization of measures.

In realization of questions connected with protection of the population and territories from emergency situations of natural and technogen character, there is a state body, especially authorized on the decision concerning liquidation of consequences of emergency situations on behalf of the Ministry on emergency situations and civil defense of Republic of Tajikistan, to which is allotted a task of:

- realization of uniform state policy in the field of the prevention and liquidation of emergency situations;
- realization of the state target programs of protection against extreme situations;
- providing of high readiness of bodies and items of management systems of communication and notification, forces and means to actions in emergency situations, realization of works on their liquidation, forecasting and rating of socio economic consequences of emergency situations;
- realization of the international cooperation in the field of the prevention and liquidation of emergency situations;
- organization and delivery of the humanitarian help, injured of acts of nature to the population.

Forces and means directly subordinated to Ministry of emergency situations of Tajikistan had participated in liquidation, of disasters, in Ayni region, in area of Baypaz Hydroelectric power station (2002), in Pendjikent region area (2003).

Besides as part of international coalition on rendering the humanitarian help to the population of Afghanistan by the power of Ministry of emergency situations of Tajikistan, Russia and Kirgizia per 2001-2002 years delivered more than 16 thousand tons of the humanitarian help as the foodstuffs, clothes, tents.

More then 300 lorries were used for this operation.

The cooperation is organized by the conclusion of the contracts and other international acts, creation of joint legal base on mutual or collective interest, work within the largest specialized international organizations.

The notification of the population and bodies of state authority on the dangerous phenomena is indissolubly connected to the system of Ministry of emergency situations monitoring. The republican Centre on disasters and civil defence management taking place in the Ministry of emergency situations and civil defense and is a link of reception and distribution of the information on disasters. The center has constant radio, telephone and telegraphic connection with all regions of Tajikistan and CIS countries and far foreign countries. Daily this Center receive the information from all regions of republic.

There are three basic modes of warning and liquidation system: daily activity, high readiness and extreme regime. All regional staffs of the Ministry of emergency situations and civil defense of Republic of Tajikistan have radio or telephone connection with the republican Centre and appropriate regional staffs. Unfortunately intra-regional and intra-farms connection now is almost paralyzed. Exception is Sogdiyski area, where such connection partially exists. The additional difficulties in notification and communication system annually arise because of limit submission of the electric power; therefore communication exists only some hours a day. Especially painfully it is felt in Karategin valley and separate areas GBAO.

All measures on preparation for nature acts will be carried out under the direction of Government of Republic of Tajikistan through state commissions on emergency situations, evacuation and steady functioning of objects of a national republic economy in extreme situations of peacetime. The chairmen of these commissions are Deputies of Premier - Minister of Republic of Tajikistan, and members are chiefs of the appropriate ministries and departments. All these organizations concern to emergency situations services. Emergency situation services (there are 14 of them) are formed by the special Governmental order in all regions (areas, cities, areas), ministries, departments and enterprises numbering the personnel more of 50 men. In Government of Republic of Tajikistan there is a department of ecology and emergency situations, coordinating all measure on questions concerning activity on disasters.

The chiefs of the ministries and departments simultaneously are the chiefs Civil defense staff, and one of their assistants is the chief of civil defense staff of objects. The general management of a Civil defense control system is carried out by the President of the country. The chief of Civil defense staff of Republic of Tajikistan is Prime-Minister and his assistant is Minister of emergency situations and civil defense of Republic of Tajikistan. With the purpose of realization of a management of preparation to disaster in areas and cities, and also in the ministries, departments and enterprises, are created regular and not regular (depending on category and amount of the personnel) bodies of management (staffs).

Ministry carries out a direct disaster management and development of measures under the warning, prevention, reduction and liquidation of consequences of nature acts.

In case of occurrence of significant emergency situations, on a place of incident immediately arrive all governmental commissions and appropriate services on civil defense. The commissions on disaster, where the representatives of local authorities (areas, cities and areas), Ministry of emergency situations and civil defense (or representatives of its staffs on places) and other appropriate organizations enter, participate in a rating of damage and preparation of the appropriate documents in Government of Republic of Tajikistan. The financing of measures on liquidation of disasters consequences is carried out at the expense of means of the republican budget, at the expense of the budgets of administratively territorial formations and budgets of the ministries of departments, depending on a kind disaster.

Simultaneously, on a place of incident arrive the special groups of the rescuers of "Centrispas" Department, appropriate military formation of ministry (if necessary and military formation of the Ministry of defense of Republic of Tajikistan) and local nonmilitary formation of Civil defense staff arrive also.

The "Centrispas" service carries out emergency and urgent measures in conditions of technogen and natural disasters character on objects of manufacture, enterprises, establishments and territories with the purpose of rescue of the people, protection of material assets and territories, localization and liquidation of consequences emergency situation, realizing of other works, required special saving equipment and appropriate qualification.

It is necessary to note, that the members of saving groups of "Centrosipas" Department have passed a complete rate of training and have skills of realization of saving operations on diving, fire-prevention, anti-radiation, chemical, airborne and other measures. So a level of preparation of the rescuer is rather high. Problem is in insufficient manning of saving groups with individual special outfit and necessary equipment.

What tasks face Ministry of emergency situations and civil defense as the state body responsible for solving questions of the warning and liquidation of extreme situations? On my sight, they consist in the following:

- to renew system of mudflow forecasting and regular inspection of mudflow dangerous areas;
- restoration of hydraulic engineering protective structures (mudflow passes and taps, dam);
- forestation of slopes;
- setting of slopes-strengthening terraces;
- resettlement of the inhabitants in more safe areas;
- a waterproofing of structures and infrastructure objects;
- preparation of reserve drifts of products of a feed and means in case of extreme situations.

The prime tasks, listed by me, will help us at early stages to reduce risk from emergency situations up to a minimum.

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Country Report 2

"Disaster Management in Tajikistan"

General Information

Ninety-three percent of Tajikistan's territory is mountainous, and the mountain glaciers are the source of its rivers. Tajikistan is an earthquake-prone area. The republic is bounded by China in the east, Afghanistan to the south, Uzbekistan and Kyrgyzstan to the west and north. The central Asian republic also includes the Gorno-Badakh Shan Autonomous region.

The Tajiks, whose language is nearly identical with Persian, were part of the ancient Persian Empire that was ruled by Darius.

In the 7th and 8th centuries, Arabs conquered the region and brought Islam. The Tajiks were successively ruled by Uzbeks and then Afghans until claimed by Russia in the 1860s. In 1924, Tajikistan was consolidated into a newly formed Tajik Autonomous Soviet Socialist Republic, which was administratively part of the Uzbek SSR until the Tajik ASSR gained full-fledged republic status in 1929.



The history of the Tajiks extends well over a 1000 year into the past, though there was never a formal state called Tajikistan until 9 September 1991. Having gained its independence in 1991, Tajikistan experienced a five-year civil war and several changes in government between 1992-1997.

The signature of the "General Agreement of the Establishment of Peace and National Accord" through a process of successful negotiations conducted under UN auspices, put an end to the fighting. Since that time, Tajikistan has come a long way in consolidating peace and stability. The process of its implementation has opened a new page in the development of the country. Despite numerous obstacles, Tajikistan has demonstrated a firm commitment to stability and has made substantial progress in peace building. Adopted in 1994, the Constitution of the Republic of Tajikistan received amendments following a Peoples' Referendum to ensure the implementation of the General Agreement. In 1999 Tajiks marked the 1100 anniversary of Samanid Empire, which became a symbol of cohesion for public and political forces. In September 2001, Tajikistan marked 10 years of independence with celebrations, concerts, national conferences, and speeches from political leaders in Dushanbe and throughout the country.



Area:

Total: 143,100 sq km; water: 400 sq km; land: 142,700 sq km

Land boundaries:

Total: 3,651 km; border countries: Afghanistan 1,206 km, China 414 km, Kyrgyzstan 870 km, Uzbekistan 1,161 km

Population (2003 est.):

6,863,752 (growth rate: 2.4%); birth rate: 32.8/1000; infant mortality rate: 113.4/1000; density per sq mi: 124
Dushanbe, 817,100 (metro. area), 590,300 (city proper) Khodzhtent (Leninabad), 156,500

Language:

Tajik

Ethnicity/race:

Tajik 64.9%, Uzbek 25%, Russian 3.5% (declining because of emigration), other 6.6%

Religion:

Sunni Muslim 85%

Economic summary: GDP/PPP

(2001 est.): \$7.5 billion; per capita \$1,140

Real growth rate:

8.3%

Inflation:

33%

Unemployment:

20%

Arable land:

5%. Agriculture: cotton, grain, fruits, grapes, vegetables; cattle, sheep, goats.

Labor force:

3.187 million (2000); agriculture 67%, industry 8%, services 25% (2000 est.)

Industries:

aluminum, zinc, lead, chemicals and fertilizers, cement, vegetable oil, metal-cutting machine tools, refrigerators and freezers.

Natural resources:

hydropower, some petroleum, uranium, mercury, brown coal, lead, zinc, antimony, tungsten, silver, gold

Exports:

\$640 million (f.o.b., 2001 est.): aluminum, electricity, cotton, fruits, vegetable oil, textiles

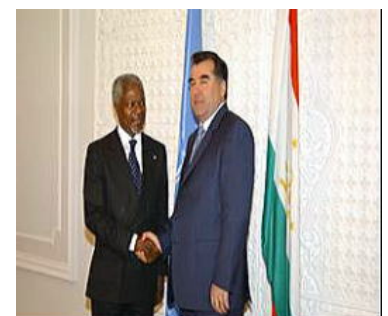
Imports:

\$700 million (f.o.b., 2001 est.): electricity, petroleum products, aluminum oxide, machinery and equipment, foodstuffs

Major trading partners:

Europe, Russia, Uzbekistan

Communications:



Telephones:

main lines in use: 363,000 (1997); mobile cellular: 2,500 (1997).

Radio broadcast stations:

AM 8, FM 7, shortwave 2 (2001).

Radios:

1.291 million (1991).

Television broadcast stations:

13 (2001).

Televisions:

820,000 (1997).

Internet Service Providers (ISPs):

5 (2001).

Internet users:

2,000 (2000).

Transportation:

Railways:

total: 482 km in common carrier service; does not include industrial lines (2001).

Highways:

total: 29,900 km; paved: 21,400 km (these roads are said to be hard-surfaced, meaning that some are paved and some are all-weather gravel surfaced); unpaved: 8,500 km (1990).

Ports and harbors:

none.

Airports:

53 (2001).

International disputes:

the undemarcated northern and western border with Uzbekistan is mined in many sections; continues to maintain a territorial dispute with Kyrgyzstan in Isfara Valley area; ongoing talks with China have failed to resolve the longstanding dispute over the indefinite boundary; Kazakhstan, Tajikistan, Turkmenistan, and Uzbekistan wrestle with sharing limited water resources and the regional environmental degradation caused by the shrinking of the Aral Sea.

Politics:

Administratively the country is divided into four regions: Gorno-adakhshan Autonomous Oblast in the east, Khatlon Oblast in the south, Leninabad Oblast in the north and the Regions of Republican Subordination in the centre. The capital of Tajikistan is Dushanbe with over 600,000 inhabitants. Modelled on the Presidential form of governance, Tajikistan has three branches of state power: legislative, executive and judicial.

The legislative body is made up of a two-chambered Majlisi Oli (Parliament), which consists of the Majlisi Namoyandagon, a professional chamber, which functions on a regular basis, and the Majlisi Milli, which meets less frequently and functions on a convening basis.

The present parliament formed after elections in February-March 2000, marking the first multiparty elections since the end of civil war and helped to further consolidate the peace process. The next Parliamentary elections are scheduled for the 2005.

The following five political parties are registered and represented in the Majlisi Namoyandagon and Majlisi Milli: People's Democratic Party, Communist Party, Islamic Renaissance Party, the Socialist Party and Democratic Party.

President Emomali Rakhmonov heads the executive branch of power and was first elected in 1994, and again re-elected in 1999 for a seven-year term. The president appoints and dismisses the Prime Minister and other heads of the government ministries, chairmen and deputies of the National Bank, judges of the Constitutional Court, Supreme Court, Prosecutor General, signs laws, formulates foreign policy and signs international treaties.

The constitutional Court, Supreme Court, Higher Economic Court and regional courts represent the judicial branch of power.

Education:

Secondary school education is compulsory in the country and the completion rate is above 90 percent.

The average number of enrolled for all levels (age between 6-23) is 62.1 percent. Estimated adult literacy rate is 99.5 percent. Although the government boasts an average literacy rate of nearly 100 percent, Tajikistan's education system has suffered greatly since independence. Thus, Tajikistan ranked 112 out of 173 countries on the UN Development Program's Human Development Index for 2002.

Holidays

Tajikistan's main public holidays are as follows:

| | |
|-------------|-----------------------------|
| January 1 | New Year's Day |
| March 8 | International Women's Day |
| March 21 | Navruz (Persian New Year) |
| May 1 | International Labour Day |
| May 9 | Victory Day |
| September 9 | Independence Day |
| November 6 | Constitution Day |
| November 9 | National Reconciliation Day |

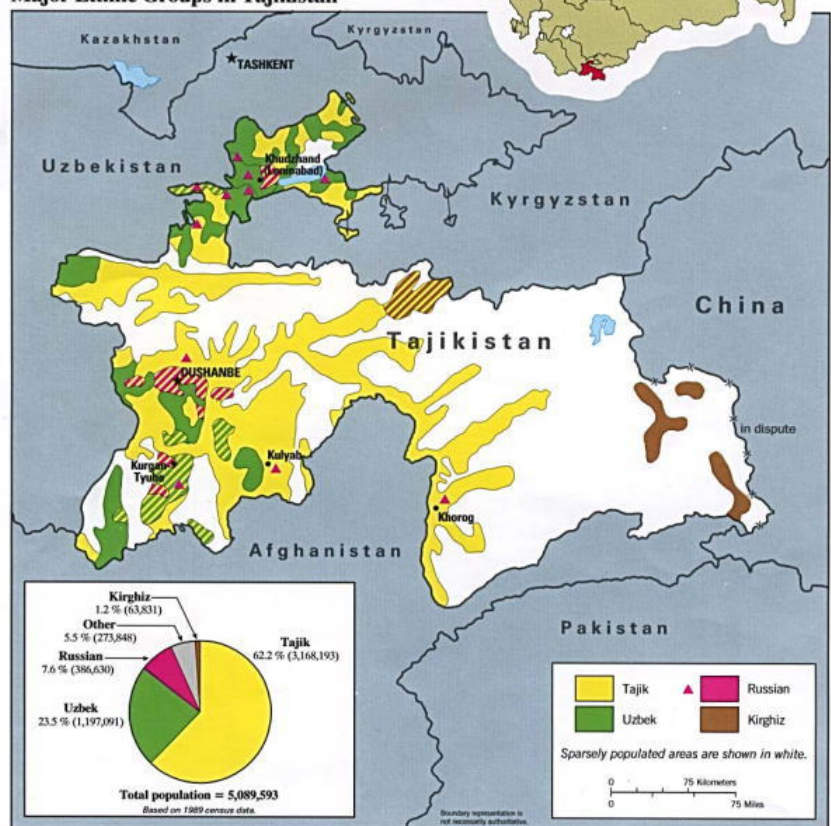


The two Islamic holidays Eid-i-Ramazon (Ramadan or Eid Al Fitr) and Eid-i-Kurban (Eid Al Adha) are celebrated annually and, as these holidays follow the lunar calendar, the dates move back ten days every year.

Climate

In general, Tajikistan's climate is continental, subtropical, and semiarid, with some desert areas. However, the climate changes drastically according to elevation. Tajikistan's subtropical southwestern corner experiences some of the highest temperatures in the country, on average 35°C to 42°C in the summer. At Tajikistan's lower elevations, the average temperature range is 25°C to 30°C in July and -1 °C to 3°C in January. Although rainfall can be sporadic, as the drought of 1999-2001 has shown, most precipitation occurs in the winter and spring.

Major Ethnic Groups in Tajikistan



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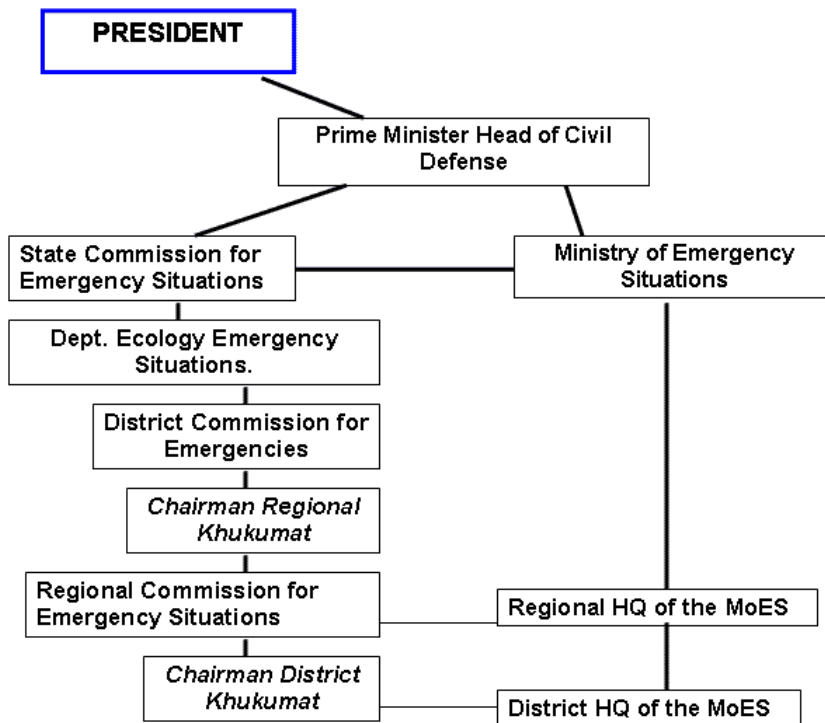
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LEGISLATIVE-NORMATIVE BASE OF REPUBLIC OF TAJIKISTAN

- Constitution of the Republic of Tajikistan
- The Laws making changes and additions in constitution
- The constitutional Laws, the decrees of president RT valid for the law, regulating separate questions in area emergency situations
- Normative governmental orders. Normative orders of the Ministry of Emergency Situations and other central agencies
- The Law "About Civil Defense"
- The Law «About hydro meteorological activity»
- The Law on wildlife management RT
- The Law on protection of atmospheric air
- The State ecological program
- The State program of ecological education and formation of population
- The Qualifier of extreme situations natural and ethnogeny character
- The Law on protection of population
- The Law on the status of the rescuer

NATIONAL DISASTERS MANAGEMENT SYSTEM



MINISTRY OF EMERGENCY SITUATIONS & CIVIL DEFENSE OF THE REPUBLIC OF TAJIKISTAN

The Ministry of Emergency Situations and Civil Defense is the state authority specially authorized on the decision of problems in the field of protection of the population and territory from emergency situations natural and ethnogeny character, conducting a uniform state policy and carrying out the government in the field of the prevention and liquidations of emergency situations, and also coordination of activity republican.

The structure is applied by the Basic method the prevention of emergency situations gathering, generalization and the analysis of the given profile ministries and departments such as is: Tajik-geologies about dangerous geological processes: Tajik-Hydrometeor Department weather the report, the report on environmental contamination. Ministry of Health of data on flashes infectious diseases, and also monitoring having place spontaneous disaster and extreme situations for last years.

Personal abilities for the organization of salvage operations spent under abnormal condition in system of the Ministry of Emergency Situations and Civil Defense of the Republic Tajikistan function armies of the civil defense, equipped with necessary equipment and some techniques. And for carrying out of search and rescue works saving service "Center of Rescue" in which the competent rescuers serve is organized. The service is equipped with all necessary equipment and equipment.



Regional co-operation

Ministry of Emergency Situations and Civil Defense of Republic Tajikistan in frameworks cooperation of the Independent States have the agreement from the Ministry of Emergency Situations of the Russian Federation in the field of prevention and liquidation a consequence emergency situation natural and ethnogeny the character signed in February, 1998.

It is necessary to note, that the given co-operation successfully becomes stronger and develops. Except for that similar agreements with Republic Kyrgyzstan and Ukraine are prepared. Within the framework of the international co-operation agreements between Republic Tajikistan and the Swiss confederation about co-operation will be signed in the field of extreme situations.

Our Ministry closely cooperates with the international nongovernmental organizations as Counterpart International, office on humanitarian questions of the United Nations, the world organization of public health services, UNICEF, Committee of the Red Cross and the Red Half moon and ADRC etc.

Republic Tajikistan is in a zone of risk from earthquakes in which estimation the institute of a seismic construction and seismology which closely cooperates with the Ministry of Emergency Situations and Civil defense RT is engaged. In case of the occurring earthquake corresponding services of the Ministry of Emergency Situations and Civil defense RT according to plans will carry out search and rescue works.

Besides it agrees the law of Republic Tajikistan on a civil defense in case of accident to its liquidation services of other departments as are involved: fire protection, medical first aid, services of the electric power, municipal and others. Over all works the operative staff of the Ministry of Emergency Situations and Civil defense RT supervises.

Under the same scheme search and rescue works are carried out at avalanches and snow collapses other extreme situations.



STRUCTURE

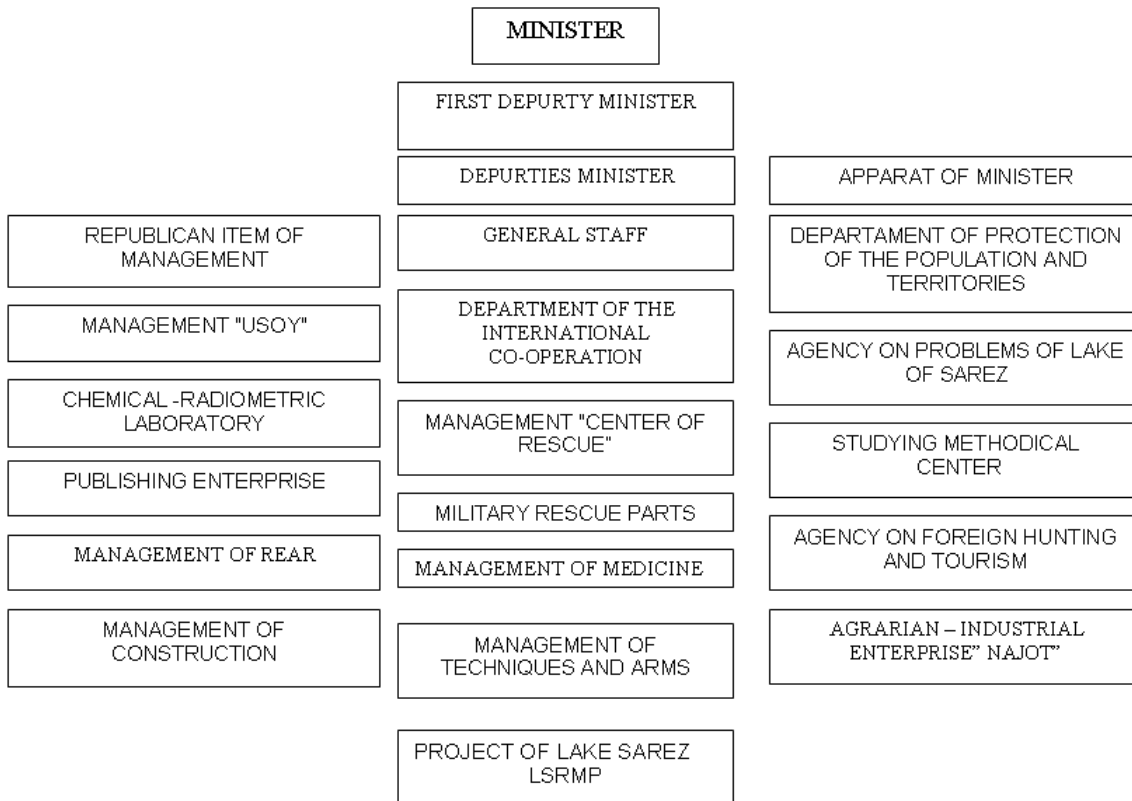
MINISTRY OF EMERGENCY SITUATIONS AND CIVIL DEFENSE OF THE REPUBLIC OF TAJIKISTAN



FIRST DEPUTY MINISTER
RAJABOV ABDURAHIM



MINISTER
MIRZO ZIYEV



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LAKE SAREZ

| | |
|--|--|
| length | 55.8 km |
| absolute surface height | 3,263 m above MSL |
| maximum width | 3.3 km |
| maximum depth | 500 m |
| maximum water volume | 16.074 km ³ |
| received balance | 47.1 m ³ /sec = 1,487 million m ³ /year |
| surged balance | 47.7 m ³ /sec = 1,505 million m ³ /year |
| maximum seasonal fluctuation of the lake level | 12 m |



The Lake Sarez was created in 1911 when an enormous landslide caused by an earthquake in the Pamir Mountain range of Tajikistan blocked the Murgab river valley. The river soon formed a lake approximately 60 km in length, containing close to 17 cubic kilometers of water. The natural dam which retains the lake, named 'Usoi', is located at an altitude of 3200 meters. With a height of over 550 meters, it is the tallest dam, natural or man-made, in the world.

Until recently, very little information about the lake and its precarious situation had passed beyond the borders of Tajikistan and the territory of the former Soviet Union. The information that was available described a colossal dam of questionable stability which retained a vast reservoir of water. Reports suggested that, should a strong earthquake occur in the vicinity of the lake, the dangerous 'right bank', a partially collapsed body of earth and rock with a mass of roughly 3 cubic kilometers, might fall into the lake. There was speculation that this event would generate an enormous wave which would overtop the natural dam and possibly wash it away. Impact projections suggested that the flood could affect roughly 5 million people living along the Bartang, Panj and Amu-Darya rivers, a path traversing Tajikistan, Afghanistan, Uzbekistan and Turkmenistan.

Hazards: Lake Sarez, contains 17 km³ of water behind a potentially unstable landslide dam, which is a dire hazard to as many as 5,000,000 people in the Amu Darya River Basin. Locally, earthquakes, debris flows, landslides, rock-falls, avalanches, and seasonal flooding occur frequently in the mountainous upper basin.

LAKE SAREZ RISK MITIGATION PROJECT

Financed by

International Development Association credit # 3388-TJ
Government of Switzerland trust fund grant # TF-023507

Parallel co-financing by

Government of Switzerland grant
United States Agency for International Development (USAID) grant
Aga Khan Development Network (AKDN) grant
FOCUS Humanitarian Assistance USA in-kind

Distribution: Ministry of Emergencies and Civil Defense of the Republic of Tajikistan

Ministry of Finance of the Republic of Tajikistan

World Bank Headquarters LSRMP Task Team

World Bank Resident Mission in Tajikistan

Government of Switzerland, SECO

United States Agency for International Development in Tajikistan

Aga Khan Development Network in Tajikistan

FOCUS Humanitarian Assistance USA in Tajikistan

Goal and scope: The goal of the project is to reduce vulnerability to natural disasters in the valleys of the Bartang and Panj rivers. The geographic area to be assisted includes (a) the Bartang River Valley and (b) the Panj River Valley from the point of the confluence of the Bartang and Panj Rivers down the Valley to the area where the Panj River flows out from the mountains, near the town of Moskovsky. To the extent feasible within time and funding constraints, the project will facilitate outburst flood preparedness in the Panj Valley beyond Moskovsky towards the Uzbek border.

Project Area: The target area for the project described in this proposal covers the vulnerable communities for 540 kilometers along the Bartang and Panj rivers from Lake Sarez to Moskovsky. Both FOCUS and the US Army Corps of Engineers (USACE) have developed flood routing models for the potential outburst flood, but neither is adequately detailed to determine how far down river the LSRMP should extend. The Bartang and Panj rivers flow through populated narrow valleys down from the Usoi dam to Moskovsky. At that place, the Panj River widens. However, a USACE model developed in 1998 indicates that a worst-case flood would reform beyond the wider valley areas, so that the very fast-moving flood crest would still be 5 meters high at the town of Termez on the Uzbekistan/Afghanistan border some 1400 kilometers below Sarez.

Lake Sarez Risk Mitigation Project Framework

The Government of Tajikistan (GoT) is implementing an initiative, developed with the World Bank that aims to mitigate the risk of an outburst flood from Lake Sarez. The project has four components, which include:

- **Design and installation of a monitoring and warning system.** This system will be able to
 - (i) sense the beginning of an outburst flood or a substantial increase the danger,
 - (ii) send a signal that will trigger alarms in the most vulnerable villages below the dam, and
 - (iii) provide long-term data needed to understand better the technical options for reducing the likelihood of a flood.
- **Social training and safety related supplies.** This part is also known as the Social Component.
- **Studies to assess possible long-term solutions to the Sarez outburst flood hazard.**
- **Institutional strengthening.** Consultants' services, incremental operating costs and equipment to strengthen the capacity of the GoT organizations responsible for implementing the project.

The first and third components are implemented using funds granted by the Government of Switzerland. The second component is implemented by Focus Humanitarian Assistance, using funds granted by the Aga Khan Development Network (AKDN) and the United States Agency for International Development (USAID), as well as in-kind services contributed by FOCUS. The fourth component is implemented using funds loaned by the World Bank.

Project Coordination and Management

The World Bank and the GoT have articulated the overall project framework, and responsibility for overall implementation was assigned to Sarez Agency (SA), which was a unit of the GoT's Ministry of Emergencies and Civil Defense. It was the task of the SA to coordinate the work of the several organizations involved in implementing the four components, and to provide periodic reports and accounts to the GoT and the World Bank. Unfortunately, the implementation level of the SA had been rated as unsatisfactory due to several reasons reflected in the Bank Appraisal Mission Aide Memoirs dated February and June 2002.

Efforts were made to bring the project implementation to a satisfactory path. To this effect, new implementation arrangements were agreed upon during the World Bank February Appraisal Mission, and a new Project Coordination Team started its activity on March 15, 2002 though Government Decree was issued and signed by President on July 3, 2002.

The total project cost is \$4,290,000.00. Table 1 presents a breakdown per components.

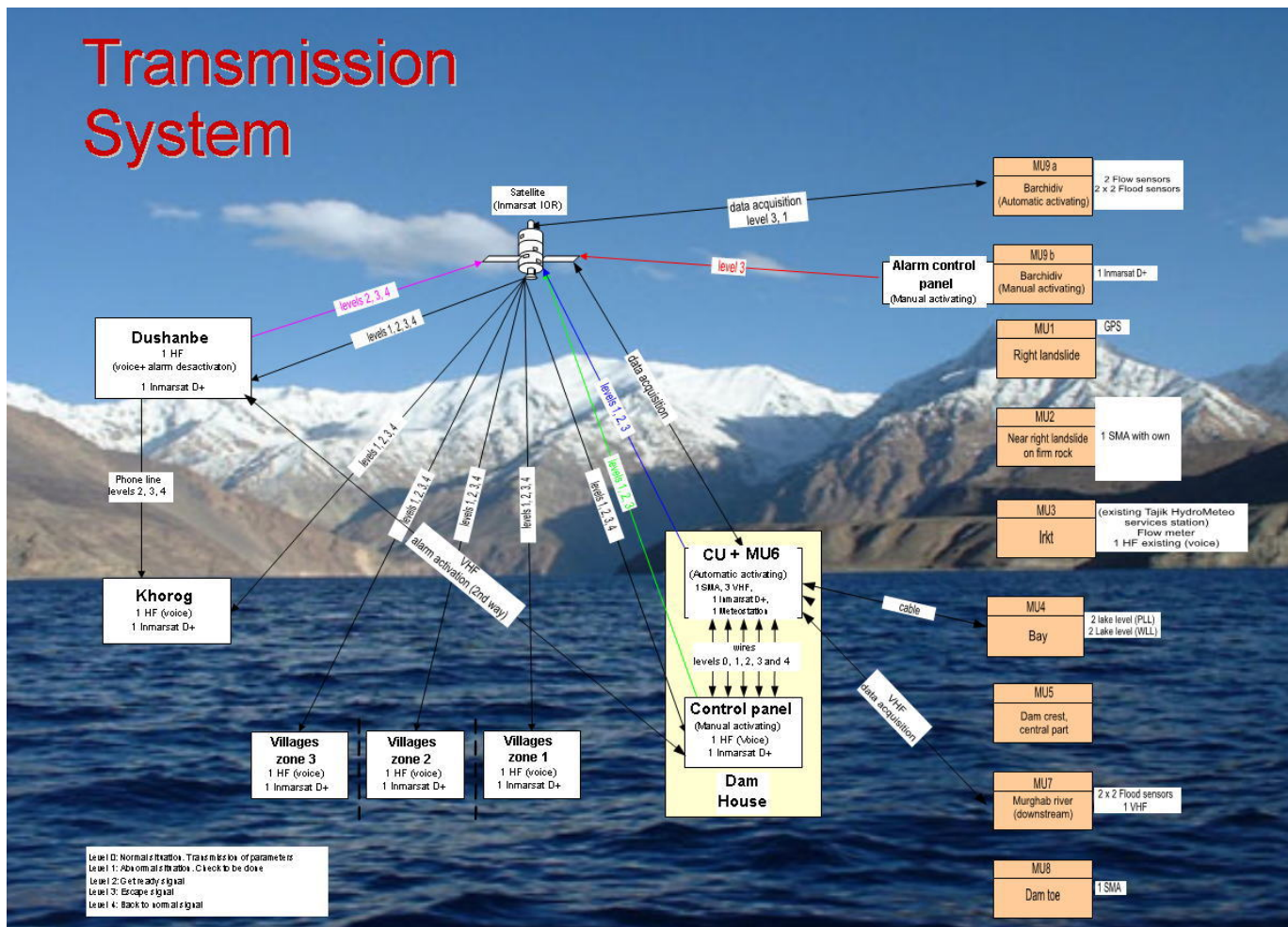
Table 1 (in million USD)

| No | Component | Component Cost |
|-------|-------------------------------------|----------------|
| A | Monitoring and Early Warning System | 2,5 |
| B | Social Component | 0,75 |
| C | Study of Long - Term Solutions | 0,40 |
| D | Capacity Building | 0,64 |
| Total | | 4,29 |

Funding of each component is implemented in accordance with the Project Implementation Plan. Table 2 presents a general picture with regard to funding sources:

Table 2 (in million of USD)

| Funding sources | Total amount |
|--|--------------|
| Government of the Republic of Tajikistan | 0,17 |
| IDA Credit | 0,47 |
| Swiss Trust Fund | 1,70 |
| Swiss Grant (SECO) | 1,20 |
| AKF-USAID - (FOCUS) | 0,75 |
| TOTAL: | 4,29 |



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| Leninabadskaya Oblast | | | | | | | | | |
|--------------------------------|-----|-----|-----|--|----|--|--|---|-----|
| Matchinskiy District | +++ | +++ | ++ | | 6 | | | C | +++ |
| Ashtskiy District | ++ | ++ | + | | 2 | | | D | ++ |
| Uratubinskiy District | ++ | ++ | ++ | | 2 | | | D | ++ |
| Ganchinskiy District | ++ | + | + | | 3 | | | D | + |
| Isfarinskiy District | ++ | ++ | ++ | | 3 | | | D | ++ |
| Khujandskiy District | ++ | + | + | | 2 | | | D | + |
| Pendjikentskiy District | +++ | +++ | ++ | | 45 | | | A | +++ |
| Ainiyskiy District | +++ | +++ | ++ | | 42 | | | A | +++ |
| Regions of State Subordination | | | | | | | | | |
| Tursun-zade | +++ | ++ | ++ | | 69 | | | A | +++ |
| Shahrinav | +++ | ++ | ++ | | 69 | | | A | +++ |
| Gissar (Hissor) | +++ | ++ | ++ | | 69 | | | A | +++ |
| Varzobskiy District | +++ | +++ | ++ | | 50 | | | A | +++ |
| Leninskiy District | +++ | ++ | ++ | | 29 | | | A | +++ |
| Kafarnigan (Kofarnihon) | +++ | +++ | ++ | | 66 | | | A | +++ |
| Nurek | +++ | +++ | ++ | | 66 | | | A | +++ |
| Faizabad | +++ | +++ | +++ | | 54 | | | A | +++ |
| Ragun | +++ | +++ | +++ | | 54 | | | A | +++ |
| Darbandskiy District | +++ | +++ | +++ | | 61 | | | A | +++ |
| Tavildarinskiy District | +++ | +++ | +++ | | 20 | | | A | +++ |
| Gharmskiy District | +++ | +++ | +++ | | 42 | | | A | +++ |
| Tadjikabadskiy District | +++ | +++ | +++ | | 42 | | | A | +++ |
| Djirgitalskiy District | +++ | +++ | +++ | | 10 | | | B | +++ |
| Khatlon Oblast | | | | | | | | | |
| Yavanskiy District | ++ | ++ | + | | 21 | | | C | ++ |
| Dangarinskiy District | + | ++ | ++ | | 10 | | | C | ++ |
| Sovetskiy District | ++ | +++ | + | | 27 | | | B | ++ |
| Khovalingkiy District | ++ | +++ | + | | 18 | | | B | ++ |
| Voseiskiy District | +++ | ++ | + | | 5 | | | C | ++ |
| Kulyabskiy District | +++ | ++ | + | | 11 | | | B | ++ |
| Muminabadskiy District | ++ | +++ | + | | 12 | | | B | ++ |
| Moskovskiy District | +++ | + | + | | 4 | | | C | ++ |
| Shurabadskiy District | + | ++ | + | | 8 | | | C | ++ |
| Parkharskiy (Farkhor) | + | + | + | | 2 | | | D | + |
| GBAO | | | | | | | | | |
| Darvazskiy District | +++ | ++ | ++ | | 18 | | | B | +++ |
| Vanchskiy District | +++ | ++ | ++ | | 10 | | | B | +++ |
| Rushanskiy District | +++ | + | ++ | | 14 | | | B | +++ |
| Shugnanskiy District | +++ | + | ++ | | 24 | | | B | ++ |
| Roshtkalinskiy District | ++ | +++ | ++ | | 13 | | | B | ++ |
| Ishkashimskiy District | +++ | ++ | ++ | | 18 | | | B | ++ |

Hazard Risk Levels & Level of Vulnerability

+++ High
 ++ Medium
 + Low
 - Nil

Risk Categories

A 10 or more + 's
 B 8-9 + 's
 C 6-7 + 's
 D < 6 + 's

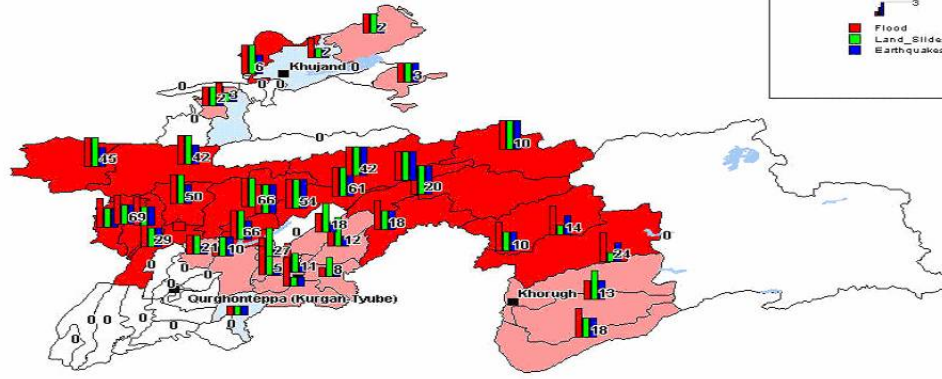
Disaster Vulnerability: Ministry of Emergencies 2002

TajDistricts by Vulnerability

- 2 to 3 (20)
- 2 to 2 (18)
- 1 to 2 (3)
- 0 to 1 (20)

Bar Chart of DisasterRiskUNDP

- Flood
- Land_Slides
- Earthquakes

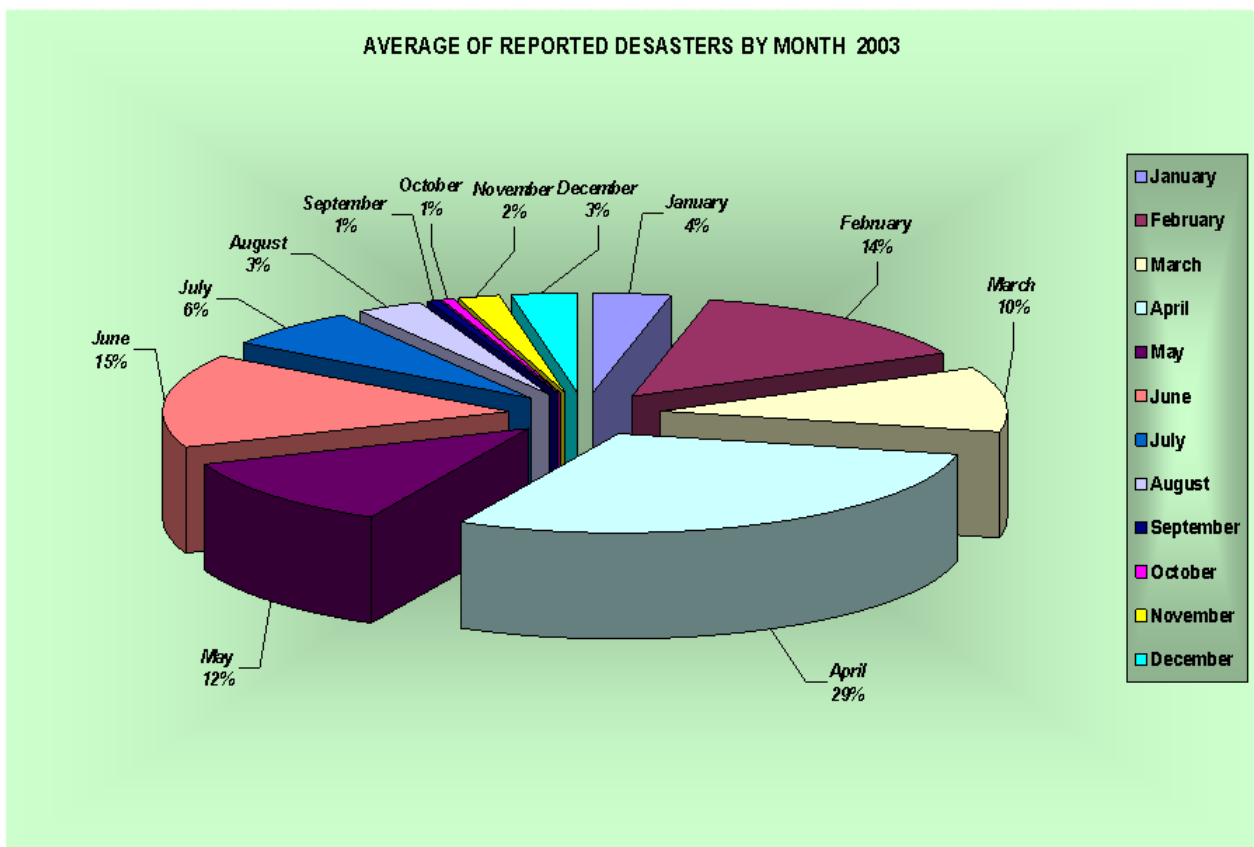
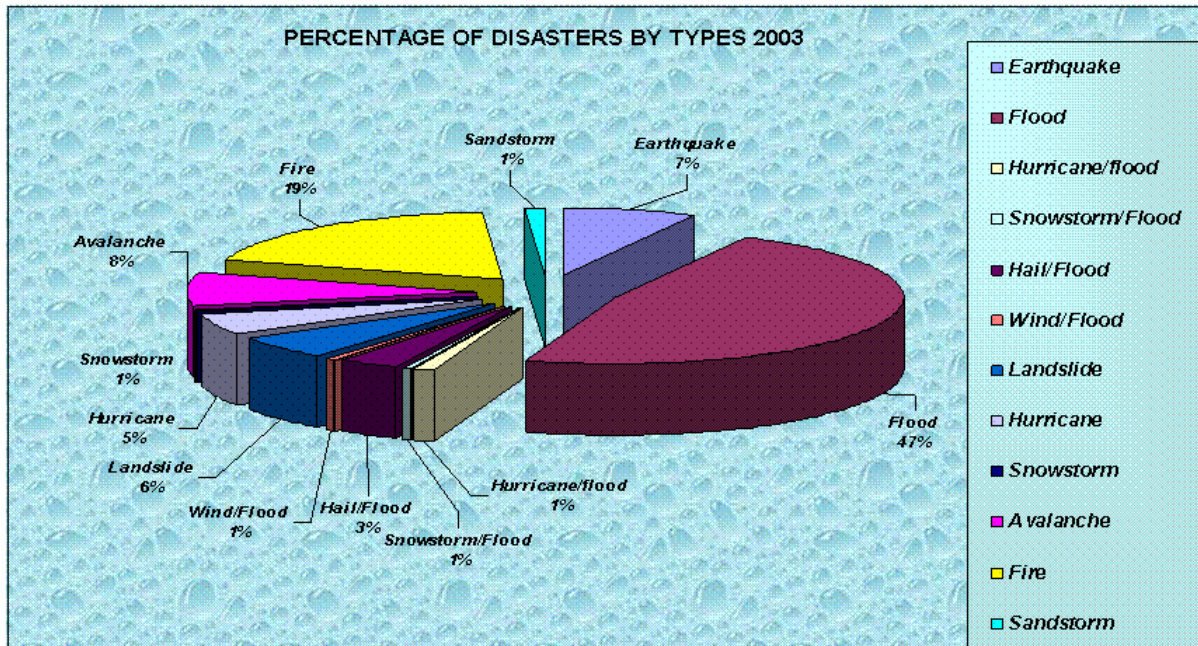


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Tajikistan



EARTHQUAKES

The territory of Tajikistan located in a zone of tectonic interaction of three large mountain structures - Pamirs, Hindukush and Southern Tien Shan. More than 5000 of deep and shallow earthquakes a various nature and force registered annually here. Some of strong destructive earthquakes are known in Tajikistan.

21.10 and 27.10 of 1907 - Karategin earthquake, M=7.4 and 7.0 points by Richter's scale, took lives of 12,000 people.

Khait earthquake in 1949, 10 points by 12 point Richter's scale in the epicenter and M=7.5 points east from Garm. 28,000 casualties. 1985 - Kairakum earthquake, M=6.3 points, 8-9 points in the epicenter.

1984 - Djirgital earthquake, M=5.7, 7-8 points in the epicenter.

January 1989 - Hissar earthquake. 389 casualties in villages Okkuli Bolo, Okkuli Poen and Sharora.

April 1969 - Mountain torrent flooded part of Yaldamich village and took lives of 68 people.

1969 - Baljuvon rock fall took lives of 480 people.

Sarez earthquake in 1911. Rock fall wiped off village Usoi having created a lake, which contains 17,5 cubic kilometers of water at present and is a hazard for 5 millions of people of Tajikistan, Uzbekistan, Turkmenistan and Afghanistan.



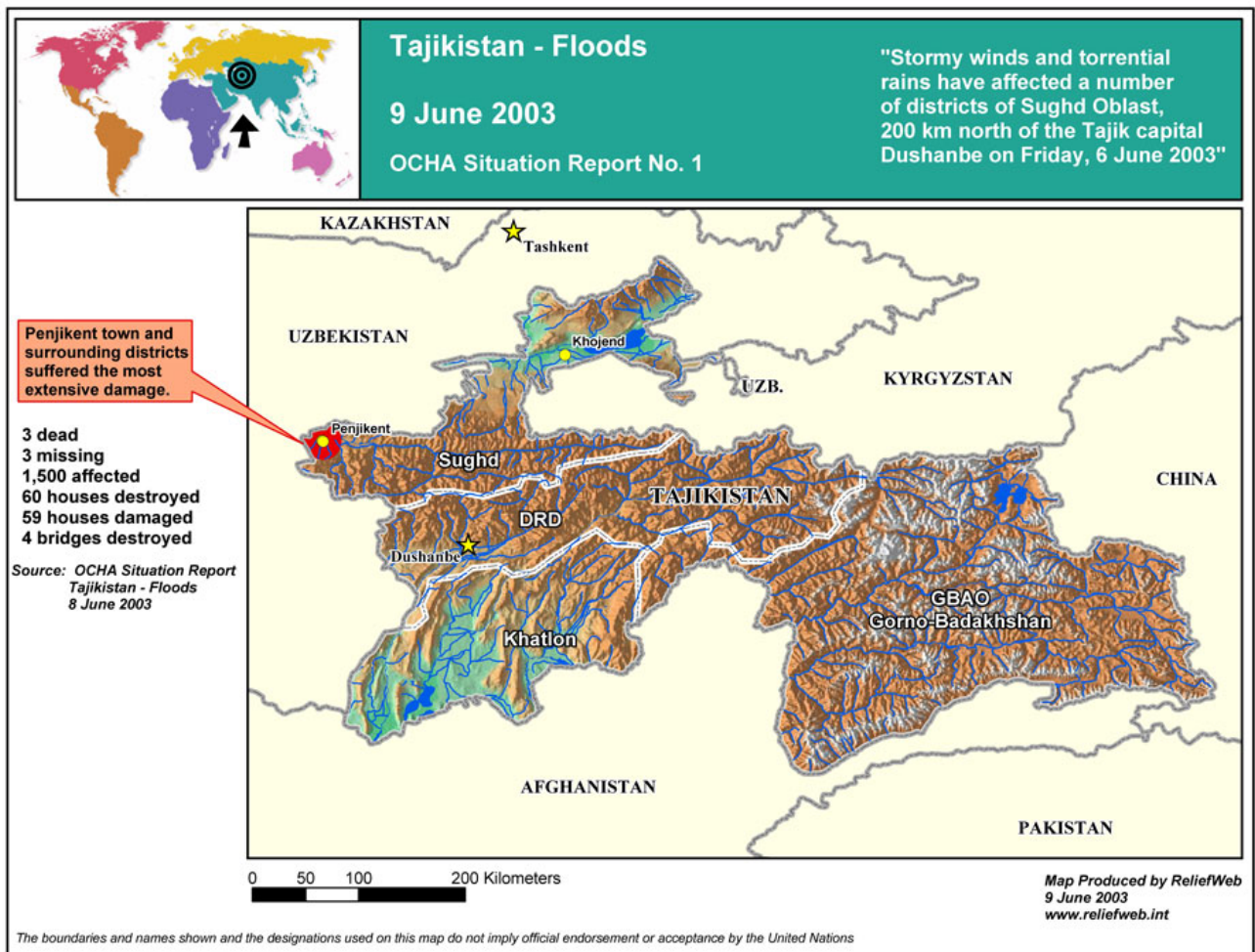
TOP 10 DISASTERS IN TAJIKISTAN

| Disaster | Date | Killed |
|------------|-------------------|--------|
| Flood | 25 May, 1992 | 1,346 |
| Land slide | 13 May, 1992 | 243 |
| Epidemic | 13 February, 1997 | 168 |
| Flood | 23 April, 1998 | 57 |
| Land slide | 19 November, 1997 | 40 |
| Epidemic | 31 May, 1996 | 32 |
| Flood | 12 July, 1999 | 27 |
| Land slide | 18 March, 1992 | 12 |
| Land slide | 23 February, 1998 | 11 |
| Flood | 8 May, 1993 | 5 |

TOP 10 DISASTERS IN TAJIKISTAN

| Disaster | Date | Affected |
|------------|-------------------|-----------|
| Drought | May 2000 | 3,000,000 |
| Flood | 27 May, 1996 | 180,000 |
| Flood | 8 May, 1993 | 75,357 |
| Drought | May 2001 | 67,500 |
| Flood | 25 May, 1992 | 63,500 |
| Flood | 23 April, 1998 | 43,974 |
| Earthquake | 31 October 2000 | 17,000 |
| Epidemic | 13 February, 1997 | 15,618 |
| Flood | 12 July, 1999 | 9,392 |
| Flood | 5 July, 1994 | 6,051 |

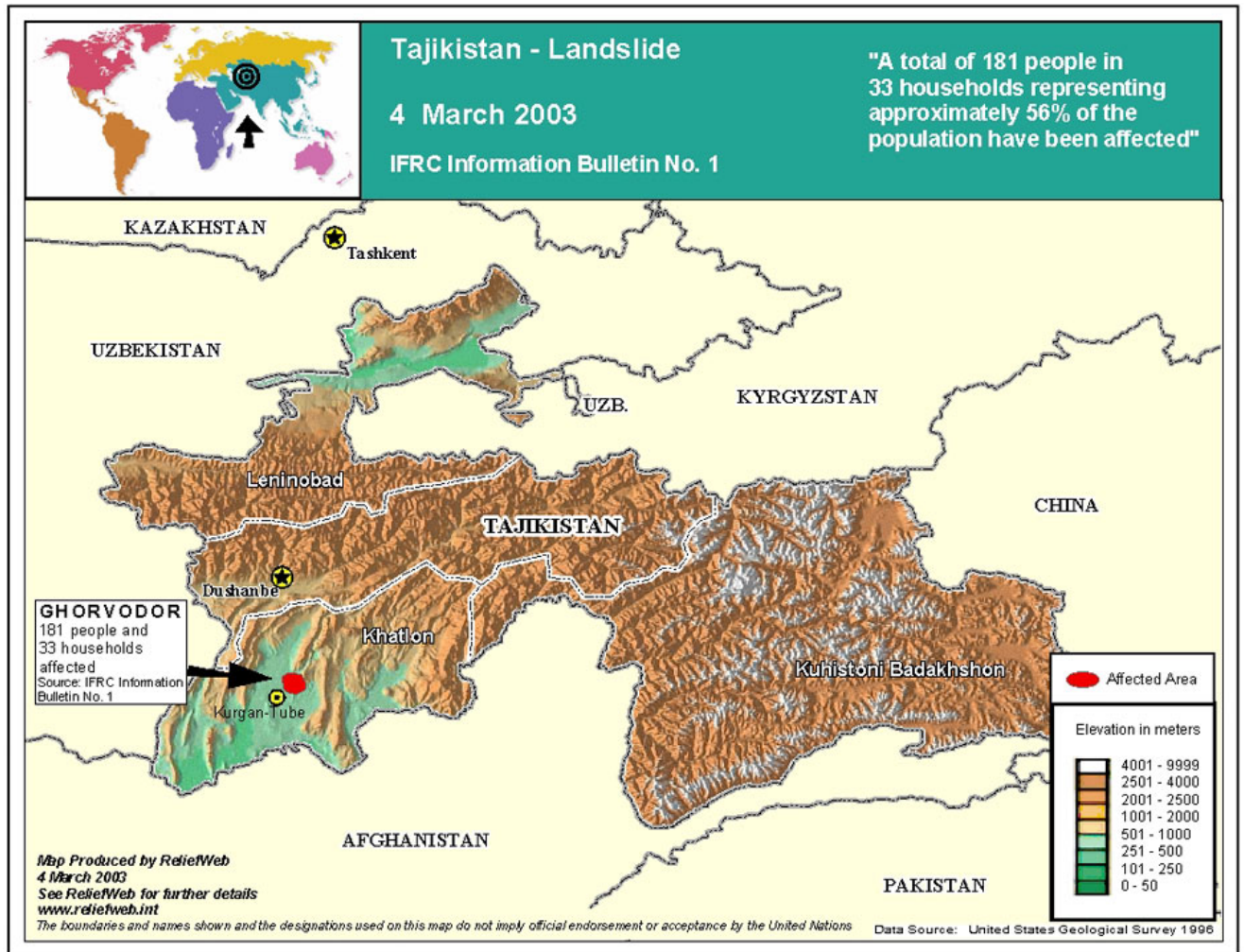
FLOODS



Stormy winds and torrential rains have affected a number of districts of Sughd Oblast, 220 km north of the Tajik capital Dushanbe on Friday, 6 June 2003. Penjikent town and surrounding districts suffered the most extensive damage. 3 died, 3 missing, 1,500 affected 60 houses destroyed, 59 houses damaged, 4 bridges destroyed.

According to local geologists, tectonic activity in the area is very high. Surface soil on three hilly areas in the Aini district have started sliding destroying all the infrastructure including at least 188 houses. Experts say deforestation often leads to unstable topsoil in mountain regions, leading to landslides. Last month, rains and landslides in the area killed five people. The activity also destroyed dozens of houses and flooded roads connecting the villages with the main highway. Power transmission and communications lines were also cut, isolating the impoverished population.

LANDSLIDES



The UN World Food Programme (WFP) has provided all of them with food aid. According to Handley, the field coordination on the ground between the local authorities of the ministry of emergencies, the Federation and the WFP is functioning smoothly. The immediate needs of the affected families included household goods, clothing, shelter and food. A one-off distribution of household goods and clothing to the 12 families forced to rapidly evacuate their homes was required. Shelter needs are currently being met, but tents may be needed when the school reopens. WFP was providing a one-off distribution of food to the 12 most affected families. Government officials are in the process of assessing the situation. Their initial plans include relocating some villagers to an area south of Kurgan-Tube in the same province. Those staying back in the area will be helped to rebuild their houses. The Red Crescent Society of Tajikistan is reportedly distributing mattresses, pillows and used clothing to the 12 affected families.

TAJIKISTAN: ECHO

Over the past decade, some 2,500 people have been killed and 5.5 million (10 percent of the total population) affected by landslides, earthquakes and floods in the Central Asian nations of Tajikistan, Kyrgyzstan, Uzbekistan, Kazakhstan and Turkmenistan.

"Tajikistan as it is the most vulnerable country in the region,"

"The overall objective is to strengthen the capacity of local communities to foresee and respond to disasters and to protect them from likely disasters through small-scale infrastructure works," she explained.

This will be achieved through disaster preparedness training, radio communication systems and public awareness campaigns. People living in areas prone to avalanches, mudslides and flooding will be protected through the construction of barriers, reinforcement of mountainsides and the strengthening of river beds and banks.

The projects will be carried out by 10 international organisations in conjunction with leading local and national disaster response actors such as the Tajik Red Crescent Society and the government's Ministry of Emergencies Situations.

ECHO allocates some eight million euros [\$8.6 million] worldwide every year through its Disaster Preparedness programme (DIPECHO) for projects to reduce the impact of natural disasters. Since 1998, the humanitarian office has provided nearly one million euros for adhoc disaster preparedness in Central Asia.

This latest decision signals an extension of ECHO's aid contribution to Central Asia. The funding is in addition to a ten million Euros (\$10.6 million).

The increased was welcomed by the UN Office for the Coordination of Humanitarian Affairs [OCHA] in Dushanbe. "Tajikistan is one of the most natural disaster prone countries in the world and 2002 ECHO with the Ministry of Emergencies logged over 70 incidents of natural disasters," humanitarian affairs officer for OCHA.

In order to be able to better co-ordinate assessment and response to these incidents, OCHA initiated in mid 2001 an interagency forum known as REACT (Rapid Emergency Assessment and Co-ordination Team). It comprises of representatives from UN agencies, NGOs, donors and the Ministry of Emergencies Situations who are able to mobilize in times of crisis.

Person in charge of ADRC activities

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Disaster Management Related Organization in Tajikistan

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