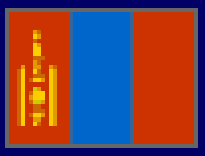
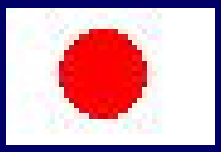




DISASTER MANAGEMENT SYSTEM IN MONGOLIA

Prepared by Ms.B.Bolormaa

Ministry of Nature and the Environment. Mongolia 2003

Modern Chronology

Years	Historical events
1911	Collapse of Manchu Qing Dynasty; Mongolia Declares its independence
1919	China invades Mongolia
1921	With Soviet help, Mongolia gains final independence from China
1924	Mongolian People's Republic declared
1990	Pro-democracy protests; Constitution amended; first multiparty elections
1992	Second multiparty elections; new Constitution adopted
1996	Democratic Coalition elected as Mongolia's first non-communist government
1997 & 2001	N. Bagabandi elected President
2000	Mongolian People's Revolutionary Party elected

Country profile

- Consisting of 22 aimags (340 soums and districts, 1658 bags and khoroos)
- Capital City - Ulaanbaatar (about 32.7 % of the total population living in the capital)
- Land area of 1564.1 thous.km^2(The seventeenth largest country in the world)
- Agricultural Land-83.5%
- Forest and Wood Land – 11.7%
- Cities, Villages and other Settlements Land -0.3%
- The climate of Mongolia is continental climate and there are 4 seasons. Horrific storms kick up during the short spring (April to May). January is the coldest month when temperature drops to the lowest point and July is the hottest month of the year.

Political structure

Mongolia is a unitary state and parliamentary country. An election of **State Great Hural** (Parliament) takes place once in every four years and 76 Parliament members are elected.

The **President** is the head of the State and the embodiment of the unity of the people and directly elected for a four-year term. The President proposes to the parliament the candidature of the Prime Minister in consultation with the majority party or parties in the parliament, proposes to the parliament to dissolve the Government. The President heads the National Security Council of Mongolia and is the Commander-in-Chief of the Armed Forces.

The **Government**, headed by Prime Minister is the highest executive body of the State.

Demographics

- Population of 2407.5 thousand (2000 estimate).
- Male-49.5%, Female- 50.5%
- Rural population-44%
- Population density in per sq.km-1.5 persons

(The lowest in the world)

- Average annual population growth rate - 1.4%
- Economically active population- 35.2%
- Unemployment Rate- 4.5 %

Social Development Indicators

•Human development Index	0.662
•Population living below poverty line-	35.6%
•Life Expectancy	
(male-59 years, female-68 years)	63 years
•Adult literacy Rate	97.8%

Economic Indicators

•Real GDP Growth Rate	1.1%
•GDP Per Capita	US$ 398
•Exports	US$ 466.1 million
•Imports	US$ 614.5 million
•External debt	US$ 834.3 million
•Exchange Rate	US$1=tugrug 1097.0

Profile of Economy

•Agricultural Sector — 30.9 % of GDP

48.6 % of labor force

Agriculture is a dominant part of the economy, and livestock production is the biggest part of the agriculture. Livestock breeding is the key traditional and ancient economic sector in Mongolia.

•Industrial Sector — Share in GDP 17.2 %

11.3 % of labor force

It has taken 13 years since Mongolia launched initial steps of a transition from centrally planned toward the market economy in 1990.

Infrastructure

Mongolia has limited transportation infrastructure. There is a single, main-line railway that crosses the country from Russia in the north to China in the south. It has 1,800 km of main and an additional 200 km of feeder lines and side-tracks. There are over 4,000 kms long motor roads in Mongolia of which 3,325 kms are improved roads 1,471 kms are paved.

The population density is generally low (outside Ulaanbaatar), so that an extensive road network would be hard to justify and expensive to maintain. The result is that most long distance transport in Mongolia is by air. This has a significant effect on emergensy preparedness, especially in the winter and spring, when unpaved roads become very slow and difficult.

Electricity

The dependable electrical supply throughout the country amounts to about 800 mW. The Central Electricity System (CES) consists of coal fired thermal plants, has a total capacity of 690 mW, and is connected to the Russian electricity grid by a 220 kV line.

In short, emergency preparedness in Mongolia takes place in the face of at least three significant constraints; poor transportation infrastructure, poor communications and lack of electricity. Generally speaking, these problems may affect anywhere up to half the entire population.

Rich in resources

Mongolia is resource-rich. This vast territory contains 15 percent of the world's supply of fluorspar and significant deposits of copper, molybdenum, iron, phosphates, tin,nickel, zinc, tungsten and gold, as well as at least 100 billion tonnes of coal. Copper is the nation's number one export. Minerals account for more than a third of Mongolia's GDP and earn half of its hard currency. Gold production is increasing. Mongolia also contains significant reserves of oil, which could transform the economy. But infrastructure and transportation limitations mean that commercial extraction is limited. The government hopes that the completion of a pipeline to China will change this.

Natural Disasters in Mongolia

Natural Disasters take a variety of forms in Mongolia and they can be classified by their origin as geological, atmospheric, and biological. Atmospheric originated disasters in Mongolia primarily are in the form of meteorological hazards such as blizzards, heavy, snowfalls, dust storms, zud, floods. The natural disasters also include wild fires, droughts, desertification etc.

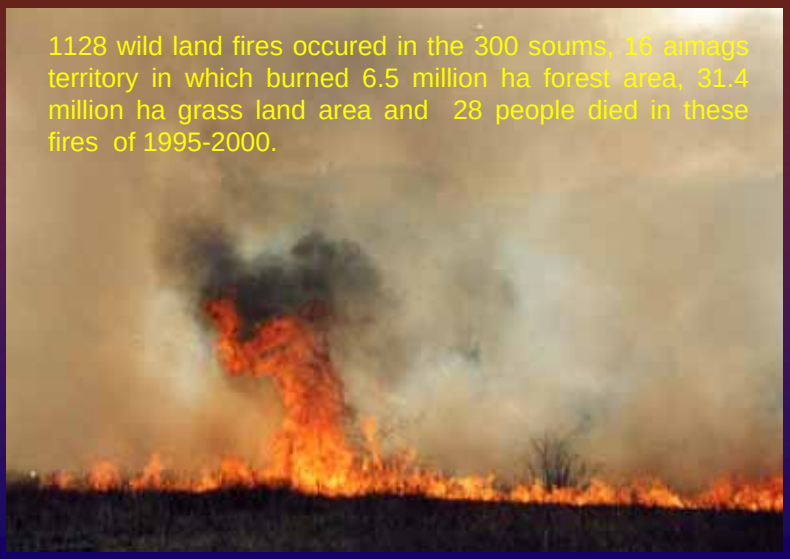
Pastoral livestock husbandry has been the main lifestyle and economic mainstay of the Mongolian nation for centuries, and there is a high probability of it being regularly exposed to natural disasters.

Drought and zud are the most important natural disasters, and cause enormous losses. In the last 60 years there has been a tendency for the frequency of natural disasters to increase.

Drought regularly occurs once in 10 years in the country's forest steppe and steppe zone and in a 2 year cycle in the desert zone.

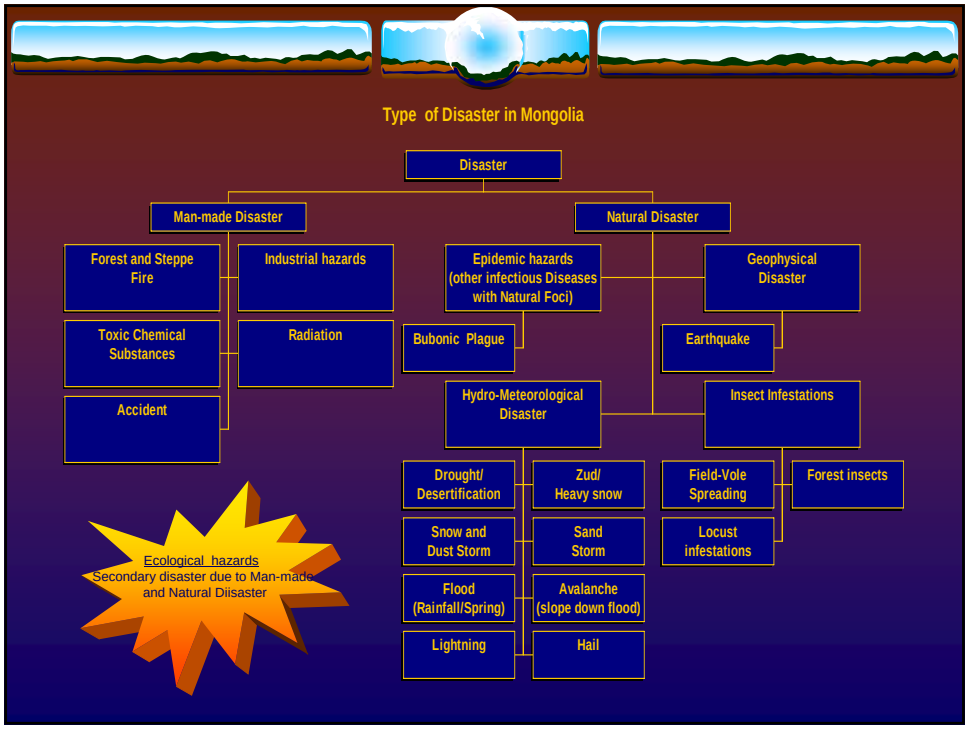
Forest and steppe fire is another big threat to Mongolian Nature and the Economy.

1128 wild land fires occured in the 300 soums, 16 aimags territory in which burned 6.5 million ha forest area, 31.4 million ha grass land area and 28 people died in these fires of 1995-2000.



Comparative intensity and occurrence of natural disasters

Major Hazards	Minor Hazards
Zud/Heavy snowfall	Field-Vole Spreading/ Locust Infestations/ Forest Insects
Snow and Dust Storm	Lightning /Hail
Forest and Steppe Fire	Bubonic Plague
Drought/ Desertification	Epidemic hazards(other Infectious Diseases with Natural Foci)
Flood (Rainfall/ Spring)	Ecological hazards
Avalanche (Slope down flood)	Industrial hazards
Earthquake	Toxic chemical substances/ Radiation
Sand storm	Accident



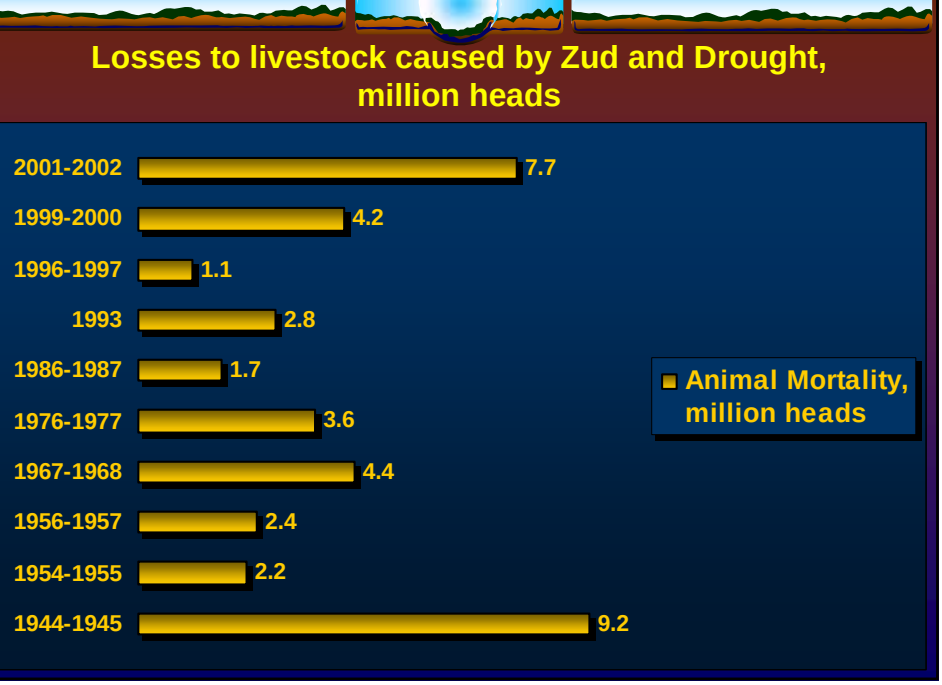
Frequency of Natural Disasters of atmospheric origin

Year	Number of natural disasters	Details of Disaster				Number of dead	Number of affected soums	
		Winds and storms	Heavy snow and rain	Hails and flash flood	Other		Drought Severe/ mild	Dzud
1989	9	1	7	-	1	-	20/58	-
1990	12	3	6	3	-	-	18/28	-
1991	5	4	-	1	-	11	15/62	19
1992	9	1	2	5	1	16	10/23	10
1993	9	3	2	1	3	47	2/10	60
1994	18	4	12	3	-	36	-/16	20
1995	14	8	3	2	1	21	18/30	5
1996	11	4	2	5	-	25	23/50	64
1997	31	4	-	24	3	29	8/1	60
1998	20	3	3	13	1	14	2/26	4
1999	23	6	4	4	9	17	37/35	24
2000	56	20	10	19	7	24	44/204	157

Historical Zud

Years	Type of disaster	Coverage, persent	Animal mortality, million heads
1944-1945	Drought,zud	9 aimags,65%	9.2
1954-1955	Zud	9 aimags	2.2
1956-1957	Zud	11 aimags	2.4
1967-1968	Drought, Zud	13 aimags,80%	4.4
1976-1977	Zud	15 aimags,116 soums, 90%	3.6
1986-1987	Zud	11 aimags,198 soums,80%	1.7
1993	Zud	3 aimags,30 soums	2.8
1996-1997	Zud	11 aimags, 69 soums	1.1
1999-2000	Drought, Zud	12 aimags, 157soums	4.2
2001-2002	Drought, Zud	20 aimags, 192 soums	7.7

Losses to livestock caused by Zud and Drought, million heads



Causes of Zud-Natural

Pastoral animal husbandry is extremely dependent on climatic and environmental conditions.

Zud is a Mongolia-specific winter disaster, which undermines the welfare and food security of the herding community through larga-scale death and debilitation of livestock.

The direct cause of a zud disaster is accumulation of following damaging natural hazards:

-severe widespread drought in summer

-unusually cold temperatures in autumn and winter(Above –40C^0)

-deep snow (Up to 70 cm)

-impenetrable ice (Early snow melted and became the ice layer on the land)

-The nutrient value of pasture fodder is 2-3 times lower in winter-spring, with protein supply 3-4 times lower than the summer peak. In dry and zud years the carrying capacity of pastures declines by 29-38% from normal years.

Causes of Zud-Human

-Number of herders and herders households has been risen by 2.9 and 2.5 fold respectively after 1990. The total number of herders have reached 18% of the total population.
-Lack of appropriate knowledge and experience among herders.
-Increase of livestock: 25.8 million in 1990
33.6 million in 1999
-Decrease of wells and water points (For instance, if in 1990, there were 600 head of animals per water point, in 2000, the were 980 head of animals per water point.It is one of the reason of overgrazing and land gedradation)
-Inadequate winter hay preparation (drought and forest and steppe fires it reduced the possibility of hay and fodder preparation)
-Extremes of climate and difficulties caused by social and economic transition have also contributed to the current disaster situation.

Impact of Disasters

Main factor that reducing Mongolia's economic development is the natural disasters as droughts and zud. If calculate the amount of natural disaster damage, to GDP, caused by droughts and zud the share is as follows:15.7% of GDP in 2000, 14.8% of GDP in 2001.
Mongolia is facing another devastating winter which will greatly exacerbate the effects of the three previous drought/zud cycles (2000, 2001, 2002) which have already caused extreme poverty amongst a proportion of the population.
Based on the latest information collected by the Mongolian Red Cross Society and the State Permanent Emergency Commission, 665000 People or 133000 families (27.6% of the total population) have been severely affected by this year's zud.
The recent zud forced herder families to migrate to urban centres or other areas of the country.

Countermeasures taken by the Government of Mongolia to Mitigate the Drought and Zud

"National programme to assist the protection of livestock from Drought and Zud"

has set an objective to create an effective drought and zud management system

and was approved according Government Resolution #47 and #48 of 2001.

The following measures taken by the Government:

-Hay reserve centers opened in 12 aimags of the country and the loan delivered for aimags that had hard situation and permitted to use it for the hay and fodder.

-Restocking projects have been implemented in Zud affected aimags.

-Water point prospecting and rehabilitation activities implemented.

-livestock Protection Fund established.

-Food,consumer goods, animal drugs, medicine delivered.

Past Largest Earthquakes

Location	Year	Latitude	Longitude	Magnitude (Richter's scale)	Intensity in epicenter
Unegt	1903	43.3	104.8	7.5	10
Tsetserleg	1905	49.5	97.3	7.6	10
Bulnai	1905	49.2	96.8	8.2	11-12
Mongolian Altai	1931	46.8	89.9	8.0	11
Mond	1950	51.8	100.1	7.0	9
Gobi-Altai	1957	45.0	100.5	8.1	11-12
Bayantsagaan	1958	45.1	98.7	6.9	9
Buuryn hyar	1960	43.2	104.5	6.7	9
Mogod	1967	48.1	103.0	7.8	10-11
Uureg nuur	1970	50.3	91.3	7.0	9
Tahiin shar	1974	40.5	94.0	6.9	9

75% of the total territory of Mongolia is classified as seismically active.

Wildfires

Year	Total No.of Fires on Forest and Pasture Land	Total Area Burned on Forest and Pasture Land, thous.ha	Area of Burned Forest, thous.ha	Area of Burned Pasture , thous.ha
1990	129	2577.0	55.0	2522.0
1991	101	6099.0	63.9	6035.1
1992	171	1541.0	390.7	1150.3
1993	63	2763.0	202.0	2561.0
1994	126	3600.0	165.0	3435.0
1995	120	168.6	34.2	134.4
1996	417	10194.4	2363.6	7830.8
1997	239	12440.0	2710.0	9730.0
1998	132	5200.0	700.0	4500.0
1999	76	3130.0	30.0	3100.0
Total	1574	47713.0	6714.4	40998.6

Floods in last years

Occurred date	Location (aimag,soum, river)	Damage	
		Loss of human life	Loss of economy, mln.togrog
1996.06.08	Khovd, Gobi-Altai, Bayankhongor, Ulaanbaatar	22	113.0
1996.06.14	Tuv, Zuunmod soum	-	37.0
1997.06.23	Bayankhongor	13	164.0
1997.07.15	Tuv, Argalant soum	-	46.1
1997.07.19-20	Selenge, Sukhbaatar soum	-	56.9
1997.07.21	Bayankhongor, Bayanlig	2	-
1997.08.14,17	Ulaanbaatar, Tuul river	4	-
1998.07.22	Mandalgobi	-	2.6
1998.07.26	Delgermurun	1	
1999.04.08-09	Bayankhongor, Tui river	-	Most gers had been affected
1999.07.28	Uvs, Tarialan soum	-	3 gers and 150 livestock had been affected

Human morbidity and mortality by bubonic plague

Year	In Asia		Percent of mortality	In Mongolia		Percent of mortality
	Human morbidity	Mortality		Human morbidity	Mortality	
1996	386	26	6.7	6	4	66.7
1997	274	12	4.4	4	3	75.0
1998	95	13	13.7	13	8	61.5
1999	222	15	6.8	5	3	60.0
2000	10	3	30.0	10	3	30.0
Total	987	69	7.0	38	21	55.3
Average	197.4	13.8	7.0	7.6	4.2	55.3

Legislative and Institutional Background to cope Disasters in Mongolia

Legislative Background

The Constitution of Mongolia provides to the Government to declare a state of emergency , whenever there is natural disaster or other threat to health, economic conditions or social environment of people living in the territory of Mongolia.

The following are the main legislative documents relevant to disasters

- Mongolian Action Program - 21
- The Law on Civil Defense
- The Law on Forests and Steppe Fires
- Environmental Protection Law
- Government's view of National Security
- National Action Program for Natural Disaster Reduction
- National Program to Assist the Protection of livestock from Drought and Zud

Institutional Background

The main institution responsible for dealing with these disasters is the State Board for Civil Defense (SBCD) under direction of the State Permanent Emergency Commission (SPEC). SPEC sets national policy and issues directives to the times of crisis.

Disaster management at the National level is the responsibilty of the State Permanent Emergency Commission , State Board for Civil Defence and relevant Ministries and agencies.

The Permanent Emergency Commissions of aimag, Civil Defence Staff and professional services of the administrative offices of the capital, aimags and districts are responsible for disaster management at the local level.

The major role in emergency preparedness is played by the State Permanent Emergency Commission (SPEC)

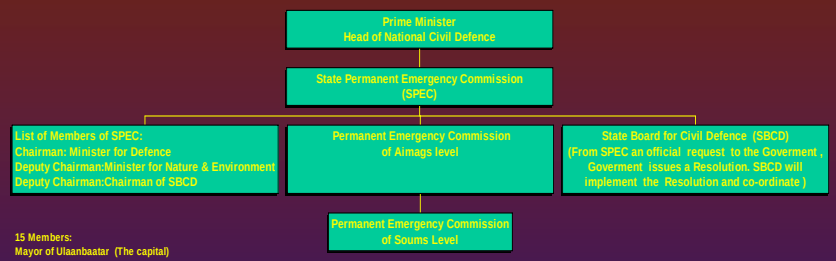
Other key agencies are the State Board for Civil Defense (SBCD), the Ministry of Nature and the Environment (MNE), and various other ministries. In addition, action by voluntary organizations, individuals play an important part in preventing, preparing, and coping with emergencies.

State Permanent Emergency Commission

State Permanent Emergency Commission was established in 1990 by means of Government Resolution.The Commission doesn't have permanent staff, it functions as a Committee. The purpose of SPEC is to coordinate the activities of Government agencies in the face of any type of natural disaster. More specifically, SPEC has the following functions:

- Preparation of a National Disaster and Emergency Plan
- Coordination of emergency preparedness measures among central- government ministries and local authorities
- Coordination of disaster relief activities and mitigative measures
- Organization of reconstruction or rehabilitation measures after the disaster is over

Structure of Disaster Management System



15 Members:
Mayor of Ulaanbaatar (The capital)
Vice Minister for Finance& Economics
Vice Minister for Food& Agriculture
Vice Minister for Infrastructure
Vice Minister for Social Welfare& Labour
Vice Minister for Justice & Home Affairs
Vice Minister for Foreign Affairs
Vice Minister for Trade & Industry
Chairman of State Police Department
Chairman of General Authority for Border Protection
First Deputy Chief of General Headquarters of Armed Forces
Secretary of Nuclear Energy Commission
Senior Rep. of Cabinet Ministry
Executive Director of NIC. Co.Ltd (Petroleum)
Secretary General of Mongol Red Cross Society
Secretary:
Deputy Chairman of State Board for Civil Defence

The State Board for Civil Defense

SBCD (the government's regulatory agency) consists a Chairman, 2Deputy Chairmen, 7 divisions and 2 services. In addition to its central organization, the SBCD has 1 military regiment,10 search and rescue units and a representative in each aimag. Most of the SBCD staff are taken from the ranks of the military. In addition to the SBCD every ministry has a branch responsible for civil defense, while the aimag governors are the local heads of civil defense, while the aimag military and civil defense staff work under governors. SBCD has the following functions;

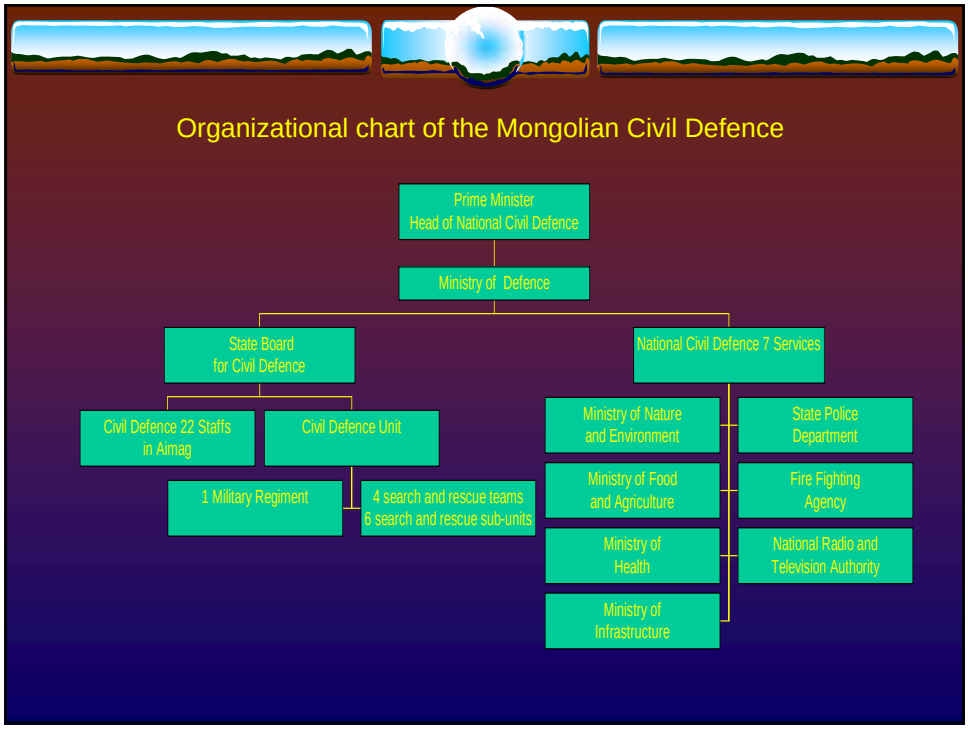
•Arrangement and management of all civil defense-related actions in peace time

•Alarm information and warnings about natural disasters and accidents.

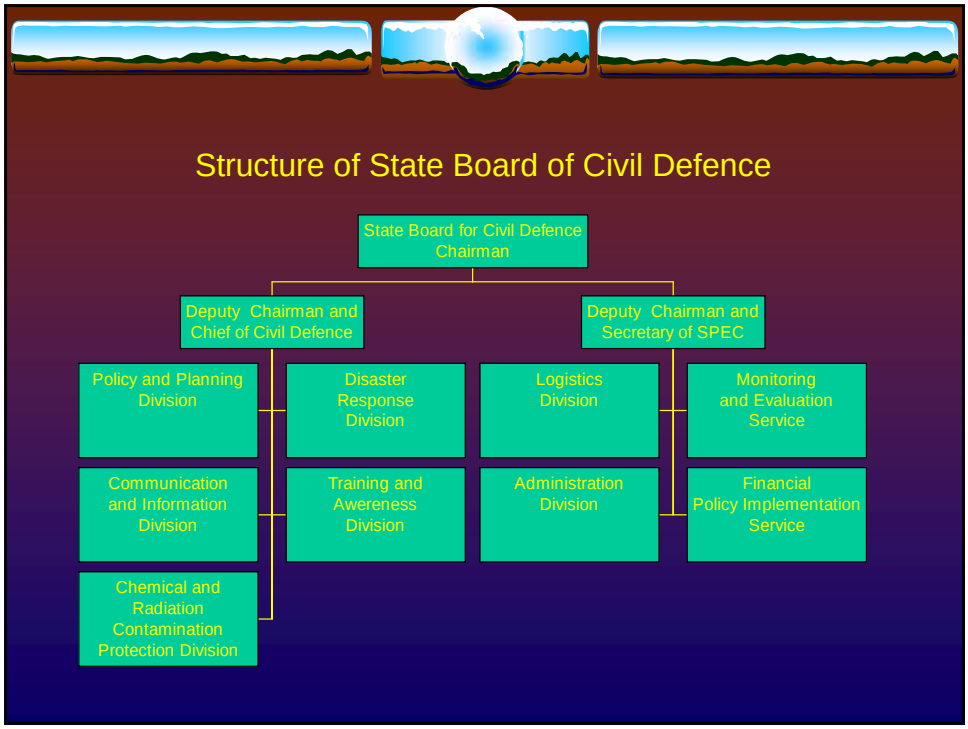
• Organization of civil defense training at all levels of the country's scale, promotion of public awareness about civil defence

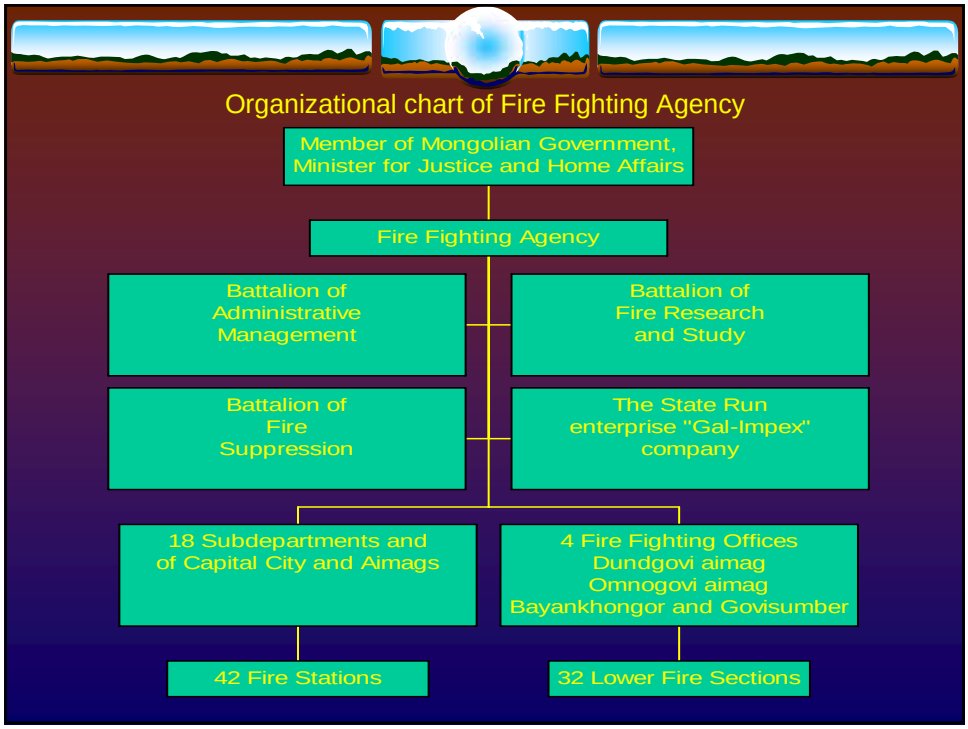
•Take action under and guidance of the State Permanent Emergency Commission during natural disasters and accidents.

Organizational chart of the Mongolian Civil Defence



Structure of State Board of Civil Defence



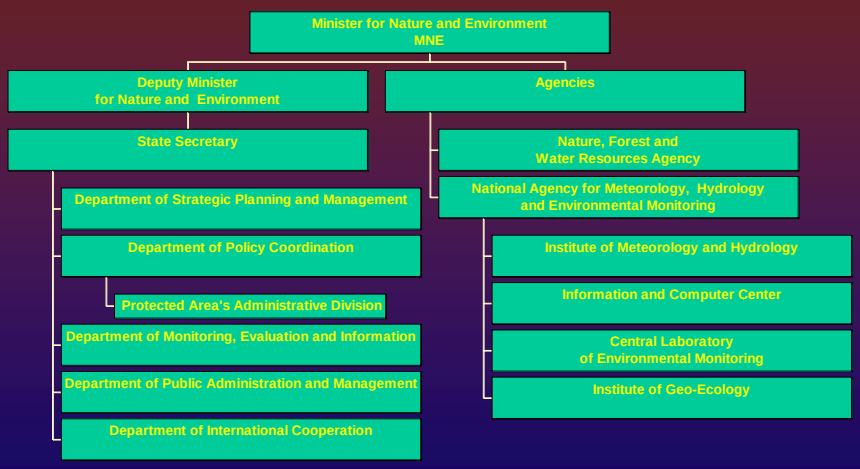


Ministry of Nature and Environment

The responsibilities of the Ministry of Nature and Environment in the field of Disaster Management are:

- To prepare preventative measures against natural disasters; to continue weather forecasts; and to maintain monitoring and control of radioactive and hazardous materials
- To conduct surveys on the characteristics of natural disasters and assessments on the risks of natural disasters and vulnerability of areas in Mongolia
- To design a National Policy on National Disaster Mitigation
- To develop and carry out the Policy on the protection of the environment
- To provide all the necessary information for an accurate assessment of the disaster situation.

Organizational chart of Ministry of Nature and Environment



Statistical study of Natural Disaster

UN questionnaire on Environment Statistics

United Nations Statistics Division's (UNSD) undertook the first international compilation of environmental statistics in 1999. The objective of the Questionnaire 1999 on Environment Statistics is to collect, in a uniform manner, the best available environmental data and statistics for international purposes. The UNSD Questionnaire 1999 on Environment Statistics contains tables under the headings Water, Air, Waste, Land and Natural Disasters

National environment statistics questionnaire

According to the Law on Statistics Ministry of Nature and Environment is responsible for environmetal statistics related all information. National environment statistics questionnaire consists of 9 statistical forms.

Compendium of Environment Statistics of Mongolia

The compendium is divided into seven chapters. The compendium is an initial attempt to complie priority environment statistics based on the Framework for the Development of Environment Statistics of Mongolia

D1.NATURAL DISASTERS[1]

COUNTRY:_____Mongolia_____

Note: If more than one disaster occurred in a year, use a separate sheet for each disaster.

Disaster[2]_____Flood_____ Data started[3]_____during_____

	1996	1994	1995	1996
Total casualties: (number)				
Dead				
Injured				
Missing				
Homeless				
Total population affected[4] (number)				
Total affected (areas ha)				
Damage (million national currency)[5]				

State form BOH-9

Approved by NSO and MNE before

Order 2002[1]04/10

1. Hydrometeorological research institute to MNE

20 March of each year; / Aimag, Capital name/

2. MNE to NSO send it before 25 March /Soum, district name/

Indicators	Rows	Quantity
Average mean air temperature	01	
Deviation of air temperature	02	
Days of precipitation	03	
Precipitation	04	
Deviation of precipitation	05	
Days with snow storm	06	
Days with dust storm	07	
Days with wind more than 15 m/sec	08	
Name of river flooded	09	
Name of aimag, soum occurred drought	10	
Name of aimag, soum occurred winter disaster	11	
Hailstone /times/	12	
Earthquake /times/	13	

APPENDIX 1. FRAMEWORK FOR THE DEVELOPMENT OF ENVIRONMENT STATISTICS OF MONGOLIA

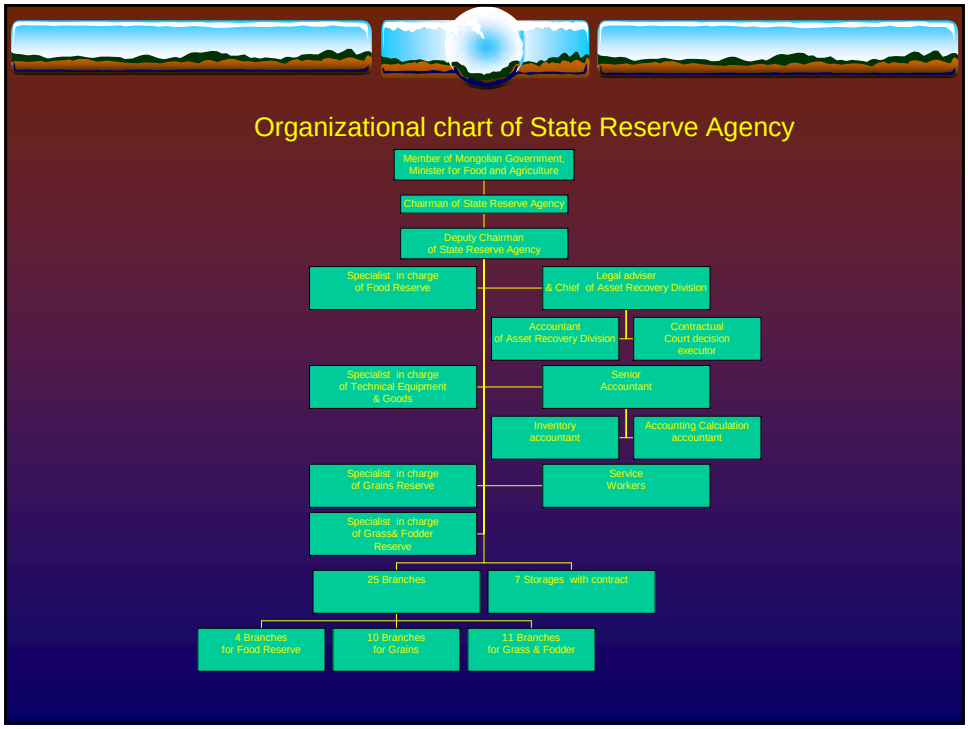
Components of the environment	INFORMATION CATEGORIES			
	Social and economic activities, natural events	Environmental impacts of activities/events	Responses to environmental impacts	Stocks, inventories and background conditions
Air	1.Emissions to air 2.Emission and discharge of greenhouse gases 3.Natural events and human activities	1.Climate change 2.Air pollution 3.Human health 4.Natural disaster	1.Pollution control and monitoring 2.Prevention and hazard mitigation of natural disasters	1.Climate 2.Agricultural climate 3.Inventory of ozon depleting substances
Water	1.Water use 2.Water use of agriculture 3.Livestock well 4.Water power 5.Waste water treatment 6.WWT plants 7.Natural events	1.Water resource change 2.Water quality and pollution 3.Drinking water quality and hygiene	1.Water resources 2.Water resource, regime monitoring network 3.Water pollution control and monitoring 4.Prevention and hazard mitigation of natural disaster	1.Water resource
Land /surface/	1.Land use and supply of pasture 2. Crop production 3.Urban area extension	1.Land resource changes 2.Land degradation 3.Pasture degradation 4.Desertification 6.Soil erosion	1.Special protected area 2.Land resources management 3.Conservation of land 4.Land use	1.Land resources inventory 2.Soil types 3.Pasture types
Land /Sub surface/	1 Mining and quarrying 2.Mineral trade	1.Mineral resources and changes 2.Land degradation and soil erosion 3.Impact on human health	1.Conservation of sub surface land 2.Environment impact assessment	1.Mineral resources
Fauna	1.Agriculture 2.Collection and harvesting of wildlife 3.Fishery 4.Introduced species	1.Loss of bio-diversity 2.Degradation of wildlife habitat	1.Protection and conservation of wildlife habitat 2.Management and conservation of wild animals 3.Rehabilitation of degraded environments of wild animals 4.Regulation of wildlife use 5.Threats to wildlife 6.Agencies involved in wildlife protection	1.Wild animal resources 2.Fishery resources 3.Fauna inventory
Flora	1.Crop production 2.Forestry 3.Harvesting non-timber products 4.Biological hazards 5.Useful plants	1.Loss of bio-diversity 2.Degradation of wildlife habitat	1.Policy regulation 2.Protection and conservation 3.Rehabilitation of degraded habitat	1.Plant resources 2.Forestry accounts 3.Non timber inventories
Human settlements	1.Population growth 2.Population natural increase 3.Migration 4.Enegry and water supply 5.Construction 6.Transportation 7.Health 8.Natural events	1.Conditions of shelter, infrastructure and services 2.Electricity and heating supply 3.Drinking water supply 4.Infrastructure facilities supply 5.Municipal waste 6.Population death and disease 7.Damage and accidents	1.Demographical policies 2.Housing policies and programme 3.Waste management 4.Health policy 5.Prevention and hazard mitigation of natural disaster	1.Economic and socila background 2.Stocks of shelter and infrastructure

Other Ministries

There are six other ministries participating in Disaster Reduction;

- Ministry of Infrastructure, with responsibilities for disaster resistance measures, reconstruction and rehabilitation, and supply of energy and transportation in emergency
- Ministry of Finance and Economics, with responsibility for financing construction and relief measures
- State Reserve Agency, with responsibility for all type of reserve to meet natural hazards and for emergency reserves of fodder
- Ministry of Health, with responsibility for the supply of medical equipment and the organization of medical aid

Organizational chart of State Reserve Agency



Cooperation with UN Agencies in the field of Disaster Management

In country UN system:

United Nations Development Programme (UNDP)
World Health Organization (WHO)
United Nations Population Fund (UNFPA)
United Nations Children's Funds (UNICEF)
Food and Agriculture Organization (FAO) –not present at the country
United Nations Disaster Management Team in Mongolia
Office for the Coordination of Humantarian Affairs (UNOCHA)-not present at the country
United Nations Convention to Combat Desertification (UNCCD) -not present at the country

Cooperation with International Organizations and NGO in the field of Disaster Management

International organizations:

JICA
USAID
International Federation of Red Cross
Department for International Development, United Kingdom
Asian Disaster Reduction Center
World Vision of Mongolia
International Civil Defence Organization

Donors:

Government of Japan (Largest foreign donor in Mongolia)
World Bank
Asian Development Bank
Government of Switzerland
Kingdom of Luxembourg

NGO:

Mongolian Red Cross Society
JCS International
Peace Wind, Japan

Implemented and ongoing projects

-"Preparation project for Strengthening the Disaster Mitigation and Management system in Mongolia" UNDP project (March2001-July2002)

-"Strengthening the Disaster Mitigation and Management System in Mongolia" UNDP project (Late 2002-2005)

-" Bag communication " project, Japan

-"Earthquake Risk Management" UNDP project (November 1999-April 2002)

-"MIDAS continues" UNDP project (January2000-ongoing)

-Support to Community Based Rehabilitation of Forest Areas and Disaster Management, UNDP project (1997)

Implemented and ongoing projects

-Integrated Fire Management (IFM) GTZ project

-Information System for Environment and Agricultural Monitoring (ISEAM)Tasis project

-Lessons Learnt from the Dzud Disaster Mon/00/302, UNDP project (1999-2000)

-Development of a Database of Extreme Meteorological Events and Their Presentation for Media –JICA project, Stage I,II

-Special projects"HIVER III" 2002 (Assistance for vulnerable poor)


@amma photo agency & mongolmedia.com


Bayarlalaa
Arigato
Thank you