ASIAN DISASTER REDUCTION CENTER

Visiting Researcher Program

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COUNTRY REPORT: MONGOLIA

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Contents

1. GENERAL INFORMATION OF MONGOLIA

1-1. Geographical Data:

The territory of Mongolia is located in the central part of Asia between 41°35"-52°08" of latitude and 87°44" -119°55" of longitude, neighboring with Russia along 3543 km in the north and with China along 4709.6 km in the south.

Mongolia comprises 1564.1 thousand square kilometers of land and the 7th largest country in the Asia. It is 2392 km from west to eastern frontier and 1259 km from north to southern frontier.

The average altitude is 1580 m and the highest point is the Huiten mountain peak with 4374 meter above sea level and located in the west while the lowest is the Khokh Nuur Depression with 532 meter above sea level and located in the east. The average altitude is 1580 m above sea level and Ulaanbaatar is at 1350 meter.

Figure 1. Map of Mongolia (Political)

Topography

The Mongolian heartland consists of relatively flat steppes. The southern portion of the country is taken up by the Gobi Desert, while the northern and western portions are mountainous.

Mongolia has three major mountain ranges.

The highest is the Altai Mountains, which stretch across the western and the southwestern regions of the country on a northwest-to-southeast axis.

The Khangai Mountains, mountains also trending northwest to southeast, occupy much of central and north-central Mongolia. These are older, lower, and more eroded mountains, with many forests and alpine pastures.

The Khentii Mountains near the Russian border to the northeast of Ulaanbaatar, are lower still.

Much of eastern Mongolia is occupied by a plain, and the lowest area is a southwest-to-northeast trending depression that reaches from the Gobi Desert region in the south to the eastern frontier.

The southern region is semidesert and desert. The Gobi Desert covers about one-third of Mongolia and is composed primarily of rock and cliffs, as well as sand dunes in more arid regions near the southern border.

Hundreds of lakes are scattered across Mongolia, the largest of which are Lake Uvs at 3,350 km^2 (1,293 square miles), Lake Khovsgol at 2,620 km^2 (1,012 square miles), and Lake Khar Us at 1,852 km^2 (715 square miles). The longest rivers are the Orkhon at 1,124 km (698 miles), the Kherlen at 1,090 km (677 miles), and the Selenge at 539 km (335 miles)

The rivers drain in three directions: north to the Arctic Ocean, east to the Pacific, or into the deserts and the depressions of Inner Asia. Rivers are most extensively developed in the north, and the country's major river system is that of the Selenge, which drains into Lake Baikal. Some minor tributaries of Siberia's Yenisei River also rise in the mountains of northwestern Mongolia. Rivers in northeastern Mongolia drain into the Pacific through the Argun and Amur (Heilong Jiang) rivers, while the few streams of southern and western Mongolia do not reach the sea but run into lakes or deserts.

1-2. National flag of Mongolia:

Mongolia’s national flag’s blue center symbolizes the eternal blue sky; the two red sides symbolize progress and prosperity.

The golden Soyombo stands on the red stripe nearest to the flagpole. The Soyombo is the Mongolian national symbol. It is attributed to Zanabazar, the 17th century leader of Mongolian Lamaism, a great statesman, and the father of Mongolian art and script.

There are various interpretations of the Soyombo. The following is one of the most common:

· A flame at the top represents the blossoming and continuation of the family.

· Its three prongs signify prosperity for the Mongolian people in the past, present, and future.

· The sun and crescent symbolize the origin of the Mongolian people.

· The triangles express the people's determination to defendthe country's freedom and independence. The top one represents triumph over internal enemies, while the bottom symbolizes victory over external enemies.

· The rectangles stand for honesty, justice, and meritocracy.

· The yin-yang symbol means that men and women are unified.

· The two vertical rectangles on the sides of the emblem signify fortress walls, a symbol of the Mongolian saying, "Two humans in friendship are stronger than walls of stone."

1-3. Demographic data:

Mongolia has an estimated population of 3 409 939 people with 1,553,556 km^2 of land area, Mongolia is the country with the lowest average population density in the world. It has a little over 2 people per km^2 (about 5 people per square mile). Mongolia’s population is 66% settled and 34% nomadic.

The country’s only official language is Mongolian.

Buddhism is the dominant religion of Mongolia. It is estimated to be followed by 52-74% of Mongolians. For followers of other religions, 3-5% are Shamanist, 3% Muslim, and 1-5% Christian.

Table 1. Number of population (2017-2021)

Region	2017	2018	2019	2020	2021
Western	400 703	408 979	412 036	415 091	418 607
Khangai	593 645	604 353	605 216	604 200	606 430
Central	504 319	513 438	516 611	515 880	518 344
Eastern	216 259	220 334	223 193	225 081	227 386
Ulaanbaatar	1 462 973	1 491 375	1 539 810	1 597 290	1 636 172
Total	3 177 899	3 238 479	3 296 866	3 357 542	3 409 939

The median age is approximately 28.3 years old, close to the global median age of 31.

The ethnic makeup of Mongolia is approximately 83.8% Khalkh, 3.8% Kazakh, 2.6% Durvud, 2% Bayad, 1.4% Buriad, 1.2% Zakhchin, 1.1% Dariganga and 0.8% Uriankhai.

1-4. Climate information:

Mongolian weather is high, cold, and dry. There are four seasons: winter, spring, summer and autumn.

It has an extreme continental climate with long, cold winters and short summers, during which most precipitation falls. The highest winds occur in April and May. January is the coldest and July is the hottest.

The country averages 257 cloudless days a year, and it is usually at the center of a region of high atmospheric pressure. Precipitation is highest in the north, which averages 200 to 350 millimeters (7.9 to 13.8 in) per year, and lowest in the south, which receives 100 to 200 millimeters (3.9 to 7.9 in).

January and February averages of −20 °C are common, with winter nights of −40 °C occurring most years.

Summer extremes reach as high as +38 °C in the southern Gobi region and +33 °C in Ulaanbaatar.

1-5. Administrative units, territory:

The country is administratively organized into 21 aimags (provinces). The territory of Mongolia is divided into western, khangai, central and eastern regions, and each region includes the following aimags:

Western region:Bayan-Ulgii, Govi-Altai, Zavkhan, Uvs and Khovd aimag;

Khangai region: Arkhangai, Bayankhongor, Bulgan, Orkhon, Uvurkhangai and Khuvsgul aimag;

Central region: Govisumber, Darkhan-Uul, Dornogovi, Dundgovi, Umnugovi, Selenge and Tuv aimag;

Eastern region: Dornod, Sukhbaatar and Khentii aimag.

The capital city, Ulaanbaatar, has an independent administrative status as a municipality, which consists of several urban districts.

The capital Ulaanbaatar is administrated separately as a capital city with provincial status.

An aimag consists of up to 27 'soums', including the aimag centre. Soums in turn are comprised of 'baghs'. In Mongolia there are 331 soums and 1550 baghs. Also the capital city,Ulaanbaatar, is subdivided into 121 districts called 'khoroos'.

In the country, the aimag centre is the administrative seat of local government, and the home of the aimag's legal bodies, theatres, hospitals, businesses, schools and industry. Most of the aimag population work in light industry, services and small business enterprises. Bagh populations tend to work in agricultural and animal husbandry. Baghs residents mainly lead a nomadic life. They migrate with their herds depending on the change in season and weather conditions. Typically their seasonal camps are located within the borders of their soum and baghs, though droughts, dzuds, and other natural disasters, can push them to different areas.

In Aimags, the capital city, soums and duuregs there shall be Khurals (Assemblies) of representatives of the citizens of respective territories;

In Baghs and Khoroos - general meetings of citizens.

Khurals of Aimags, the capital city, Soums and Duuregs enjoy considering and deciding all problems, which do not depend on higher stage of Khurals or other organizations, in its territory. The main form of local self-government is the Khural. In between the sessions of the Khural and general meetings the presidiums shall assume administrative functions. The memberships of the Khurals as well as those of aimags, the capital city, soums and duuregs, baghs and Khoroos are different. For example: In aimags and the capital city Khurals' Presidium of Representatives of Citizens is composed of 5-9 members, whereas, in soums and duuregs 5-7 and in baghs and horoos 3-5 members, including the chairman and secretary respectively. Regular meeting of the Khurals of Aimags, the capital city, Soums and Duuregs shall be convened once every year and of the Khurals of Baghs and Khoroos shall be convened less than twice every year.

1-6. Government:

Mongolia is a parliamentary republic.

The president is directly elected. The people also elect the deputies in the national assembly, the State Great Khural, which chooses the prime minister, who nominates the Cabinet in consultation with the president.

The legislative branch is the State Great Khural, literally meaning the state great assembly. It is the unicameral parliament of Mongolia and located in the Government Palace. It is comprised of 76 seats, with members directly elected for four-year terms in single-seat constituencies by simple majority vote.

1-7. Economics:

Mongolian economy activities based on livestock, agriculture and mining.

Approximately four-fifths of the value of agricultural production is accounted for by millions of sheep, goats, cattle, horses, and camels, which are often referred to as the livestock (five animals).

In the last several decades, mining has emerged as a dominant economic force, with construction and service sectors (including tourism) also playing a significant role in the contemporary economy. Mongolia has large deposits of coal, fluorite (fluorspar), copper, gold, silver, and other metallic ores. Coal is the predominant mining product, produced primarily for domestic use although some is exported to other countries.

Agriculture plays the second largest role in the modern economy, accounting for 35% of employment, 11-20% of GDP,73 30% of exports, and 14% of foreign exchange revenues.

2. OVERVIEW OF DISASTERS AND ACCIDENTS IN MONGOLIA

The frequency of disasters and their impact has increased over recent years including Mongolia, as a result of global climate change, with disturbances to ecological balance and urbanization. Disaster can lead to widespread loss of life, directly and indirectly affect large segments of the population and cause significant environmental damage and large-scale economic and social harm. Classification of natural and human induced hazards in Mongolia is shown on Table 2.

Table 2. Natural and human induced hazards in Mongolia

Classification	Type	Disasters
Natural hazards and disasters	Climatic Hazardous Phenomena	Snow and dust storm
		Dzud
		Flood
		Steppe and forest fire
		Desertification
	Geological threats	Earthquake
		Landslides
	Biological threats	Livestock and animal infectious diseases
		Human infectious disaster
		Spread of detrimental rodents
Human induced hazards	Technological accidents	Building fire
		Traffic accidents
		Leakage of chemical and radiological substances
		Explosion
		Industrial accidents

The study of the total number of hazards and dangerous incidents in Mongolia can be seen in Table 3.

Table 3. Recapitulation of natural and human induced hazard occurrences /2012 - 2021/

Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Numbers of natural and human induced hazard	4047	4467	4928	5426	4373	3758	4373	4990	4006	12694
Number of deaths	237	201	175	198	225	193	208	203	248	2304
Livestock deaths /thousand heads/	13.1	235.6	13.2	202.9	1059.	536.1	1417.	26.2	80.9	155.03

According to the above research, the number of disasters occurring in Mongolia in recent years tends to increase.

Therefore, it can be seen that the number of people who lost their lives, the number of dead livestock and the total amount of damage have increased dramatically.

Mongolian economy is heavily reliant on the livestock sector. As the livestock sector is highly sensitive to extreme weather, and the natural resource represented by pastureland, rural householders are much more vulnerable to negative impact of climate hazards such as dzuds and severe snow and dust storms.

Mongolian most populated provinces that situated near the bigger river blanks and also the nomads that move frequently around the 4 seasons, especially in fall and summer season on the mount gap, dry pebbles, valley, nearby river are causing and increasing in the flood risk.

Therefore, let's explain the types of natural hazards common in Mongolia.

2-1. Dzud:

The dzud is a weather-related phenomenon unique to Mongolia due to the country's unusual environment that is landlocked, semi-arid, and given to swings in temperature and precipitation. It is caused by the combination of drought in the summer followed by severe freezing weather and storms in the winter.

When droughts occur in the summer, animals of the steppe are not able to eat enough and fail to gain the protective fat that enables them to survive the icy winters. Additionally, herders are not able to collect enough hay to store throughout winter. When these hot, dry summer conditions are followed by severely cold winters, animals are not able to graze for enough sustenance to build up fat stores and core muscle strength to endure the winters. When feed supplies run out, the livestock weaken until they freeze or starve to death.

In Mongolia, the following types of dzud are recognized:

- *White dzud* results from high snowfall that prevents livestock from reaching the grass. It is a frequent and serious disaster that has caused a great number of deaths.
- *Black dzud* results from a lack of snowfall in grazing areas, leading to both livestock and humans lacking water. this type of dzud does not occur every year, nor does it affect large areas. it mostly happens in the Gobi desert region.
- *Iron dzud* results from a short wintertime warming, followed by a return to sub-freezing temperatures. the snow melts and then freezes again, producing an impenetrable ice-cover that prevents livestock from grazing.
- *Cold dzud* occurs when the temperature drops to very low levels for several days. the cold temperature and the strong winds prevent livestock from grazing; the animals have to use most of their energy to keep warm.
- *Combined dzud* is a combination of at least two of the above types of dzud.

Mongolian society has historically been nomadic and based on herding, which still provides the primary source of income for many Mongolians. Agriculture is comprised by 80% herding and is the second largest contributor to the economy, accounting for 19% of GDP but employing 36% of the working population.

Figure 2 is a bar chart that shows the percentage of national livestock that died each winter, with spikes evident during the worst dzuds and severest winters.

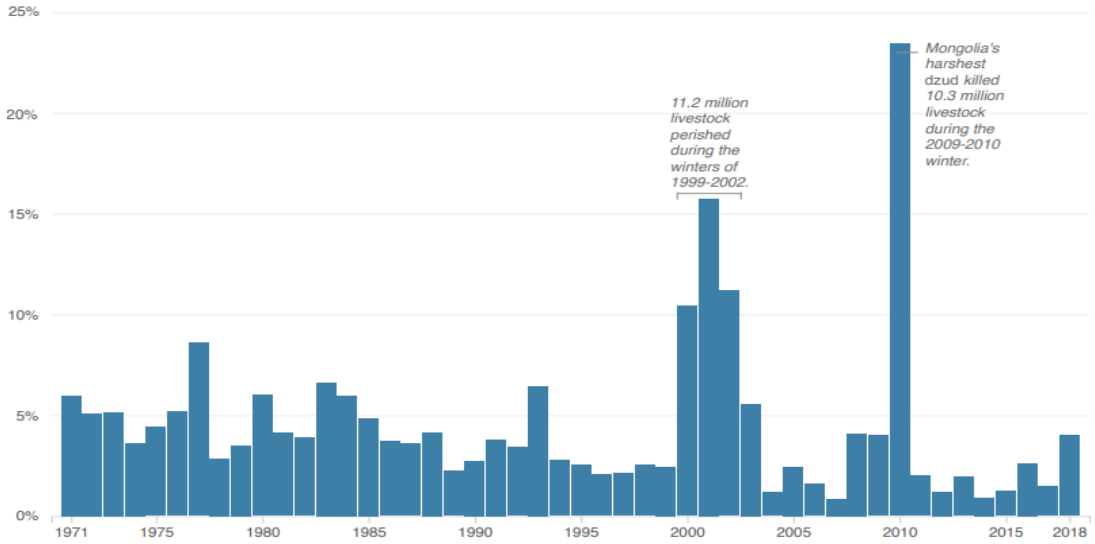

Figure 2. Percent of National Livestock that Died Each Winter (1970-2018)

In the 2000s, the country lost tens of millions of head of livestock, with the most severe mortality occurring in the 2000-2002 and 2010 winters. The 2009-2010 dzud alone killed 22% of the nation's livestock.

Dzuds are disastrous for the herders, often bringing an end to their livelihood.

2-2. Flood:

Mongolia's exposure to risk of flooding is considered high. The majority of Mongolia's floods stem from rainfall

The country typically sees three types of floods:

- Spring or snow melt flood wherein river levels slowly rise and overflow their banks over a relatively longer period of time;
- Rainfall flood wherein a quick rise of water levels from heavy rainfall leads to overflowing banks;
- Flash flood wherein heavy rainfall over steep riverbeds causes turbulent flows of water along with rocks, sediment, and other surface materials.

Flooding affects both rural and urban areas, and in the capital old bridges, roads, and avenues built without sewage systems have been severely affected.

2-3. Snow and dust storms:

Snow and dust storms occur frequently in Mongolia due to natural conditions, geography and climate features. Snow and dust storms severely affect the Mongolian ecosystem, economy, society and population health, resulting in natural disaster.

Rapid and massive land degradation such as desertification in the past few decades has contributed to increased occurrences of severe storms in Mongolia. The Gobi Desert, which comprises about 41% of Mongolia, experiences dust storms for 30-100 days per year. Overgrazing also contributes to dust storms, as the total Mongolian herd has tripled in size in the last three decades.

As a result of strong snow and dust storms, herding families living in rural areas suffer a lot. They get lost from their homes and their houses collapse and their animals died. If the strong snow and dust storms last for several days, it is impossible for herders to reach for help and communication is lost.

2-4. Forest and steppe fire:

In Mongolia, forest and steppe fires usually occur in spring and autumn.

Spring weather brings strong, dry winds, which of prevalent from March through June, these winds increase fire risk in dry, dead grass from the previous fall.

The little rain Mongolia receives falls primarily in the summer, producing new grass growth. In the autumn the new grass dries out, becoming potential fuel for wildfires during September and October.

Winters are usually very cold and dry. Typically, the majority of wildfires in Mongolia occur in the grasslands or grass understory of the steppe and mountain steppe zones.

Forest and steppe fires cause a lot of damage to the environment, animals and plants.

2-5. Animal diseases:

3.4 million Mongolians have 71 million livestock. Livestock includes cow, sheep, horse, camel, and goat. About 200,000 families raise livestock in Mongolia. So, there are about 300-1000 animals in 1 herding family. Because there are so many animals in one place, there are many infectious diseases in animals.

Mongolian people consume the meat, milk, and skin of their livestock, so animal infectious diseases are very damaging to Mongolian people’s life and Mongolia's economy.

There are 15 types of serious animal infectious diseases registered worldwide. In recent years, a number of serious livestock and animal infectious diseases, such as foot-and-mouth disease, rabies, avian influenza, and anthrax occurred in Mongolia.

Foot-and-mouth disease caused by virus of the Picornaviridae family, although thought to be eradicated in Mongolia, in 1973, it reappeared along the Chinese border in 2000. In the last decade, foot-and-mouth disease mostly occurred in the eastern part of Mongolia.

Rabies remains an endemic problem especially among dogs, wolves and livestock cases reported in Mongolia. The peak prevalence of animal rabies occurred in the 1970s. the number of rabies cases in animals decreased during the 1980s. This may have been due to a decrease in the number of wild reservoir animals and the improvement of appropriate veterinary measures. In recent years, animal rabies has prevailed in the Khangai and western provinces.

Anthrax is endemic throughout Mongolia, except in the semi-desert and desert areas of the south. The prevalence of anthrax in Mongolia had drastically since the 1950s, due to the use of anthrax antiserum and vaccines, but the privatization of the animal husbandry sector and changes in the structure of the veterinary and medical delivery systems in Mongolia over the last decade has resulted in challenges for disease control. Animal and human anthrax has become an increasing problem since the mid-1990s.

Highly pathogenic avian influenza (H5N1) was first recognized in late 2005 and subsequently identified in 2008 and 2009 among the wild birds.

2-6. Earthquake:

Mongolia has a high risk of earthquake hazard, with more than a 20% chance of a potentially damaging earthquake occurring in the next 50 years, and newly discovered risks to the capital.

Mongolia has a high risk of earthquake hazard and experienced four magnitude 8 earthquakes during the last century. The highest risks had historically been in the far northern, southern, and western areas of the country. Smaller magnitude earthquakes occur very frequently, with more than 200 earthquakes of magnitude above 3.5 in every year.

Mongolia has suffered no catastrophic damages so far, partially due to earthquakes heretofore striking sparsely populated areas outside the capital where the rural population live in gers, whose flexible construction make them less prone to damage.

However, recently discovered earthquake risks to the capital are spurring renewed preparation activities. While Ulaanbaatar's exposure to earthquake hazard was previously considered very low, publications in 2019-2020 detailed the newly discovered Ulaanbaatar Fault, an active 50-km (31-mile) long fault crossing the urban area of the capital. Based on its length, the fault is believed to be capable of causing earthquakes with magnitudes greater than 7, which could result in considerable building damage and heavy casualties in the metropolitan area.

2-7. History of natural hazards

The following is a list of major natural disasters that affected Mongolia in the last five years.

2016 January – Dzud

Mongolia started experiencing very low temperatures and heavy snowfall in early November 2015, and by January 2016 saw snow covering 90% of the country and 16 out of 21 aimags having declared dzud in some of their areas.

This came on the heels of drought the previous summer where low vegetation growth yielded insufficient hay, leading to livestock deaths during the severe winter. Parts of Mongolia experienced continuous heavy snowfall and snowstorms with average temperatures below -25 °C (-13 °F) during daytime and around -40 °C (-40 °F) during the night.

Approximately 965,000 people were affected by the dzud, close to one-third of the country's population. Where livestock started dying from cold and starvation in the thousands, many herders tried selling their animals while they were still alive, but the oversupply resulted in very low market prices, which was particularly devastating for vulnerable families with fewer animals to sell.

As a result, poor herders lacked the cash to buy food, warm clothes, and coal for heating. Impassable roads covered with thick snow and ice also made it impossible for many herders to reach urban settlements to access necessities or receive medical care.

The weather situation and grazing conditions were worse than in the dzud of 2009-2010 when millions of animals died, according to the Ministry of Food and Agriculture. In February 2016, the Ministry of Foreign Affairs asked for international aid to deal with the dzud, with an estimated US$4.4 million needed for emergency vehicles, warm clothes, medicine, food, hay, animal feed, and livestock vaccinations to not only assist herders with their needs but to mitigate loss of their livestock and livelihoods.

By June 2016, 1.0 million livestock had perished, affecting 41% of the population who rely on livestock for their main source of food and cash. NEMA led the Humanitarian Country Team's response to the dzud, which provided targeted agriculture support to 78,764 households in all 21 aimags, protection support to 17,162 households in eight aimags, multi-sector support to 16,681 households in five aimags, early recovery support to 12,219 households in 13 aimags, food support to 11,182 households in 15 aimags, and nutrition support to 4,390 households in six aimags.

2018 January – Dzud

A drought in the summer of 2017 followed by a severely cold winter created dzud conditions that affected areas in the majority of the country's aimags.

May-July 2017 saw a prolonged period of severe dry weather and some extreme high temperatures, which damaged large swatches of cropped areas and caused a severe deterioration of pastures and rangeland conditions. Approximately 80% of the country was affected by the summer drought, resulting in severe crop losses, including wheat production being almost half of the previous year's level and over 40% less than the five-year average. The severe deterioration of pasture conditions during the drought prevented livestock from gaining fat stores and strengthening core muscle strength, critical to endure the winter months.

By December 2017, an estimated 40% of the country was at extreme risk of dzud and 20% was at high risk of dzud. In February 2018, a national total of 141 out of 330 districts and a city were experiencing dzud conditions with temperatures approaching -50 °C (-58 °F).

2018 July – Flash Floods

Intensively heavy rainfall fell 3-5 July 2018 and caused flash flooding in several parts of Mongolia. More than 792 households were affected across the country. Khovd, Bayan-Ulgii, Zavkhan, and Uvurkhangai aimags and Ulaanbaatar's Khan-Uul District were affected, with over 210 families losing their homes, over 700 head of livestock perishing, and at least 55 hectares (136 acres) of agricultural land destroyed. Bayan-Ulgii in the west was among the hardest hit aimags, with approximately 2,500 people severely affected, and roads, homes, and shelters damaged. People who evacuated used school dormitories as temporary shelter, with the government providing shelter, drinking water, and support in logistics and waste management.

2018 November – Sand and Snowstorms

On 25 November 2018, sand and snowstorms struck four aimags, leading to missing people, missing livestock, and local damage. Strong winds around 20-30 m/s (45-67 mph) swept across Bayan-Ulgii, Govi-Altai, Uvs, and Khovd aimags, reaching up to 40 m/s (89 mph) in Govi-Altai's Bugat district.

The resulting sand and snowstorm meant that a number of people and livestock went missing or were injured; they also caused electricity failures and construction wreckage. At least 285 gers were completely destroyed. The NEMA reported that 173 people with 26 pieces of technical equipment from the “national network of electricity distribution” government company worked to restore the electric substation.

2019 June – Flood

On 15 June 2019, heavy precipitation started across Mongolia.

Approximately 500 people were affected, and several roads, buildings, and an electric sub-station were damaged, according to initial assessments.

By 18 June 2019, NEMA reported 12 fatalities from the floods across central and northern Mongolia. Increased river levels led to roads connecting Ulaanbaatar with rural districts being blocked by flood waters. Local emergency management agencies mobilized search and rescue efforts with the support of local police agencies and local governors’ offices.

2020 January – Dzud

Mongolia experienced widespread dzud conditions in the winter of 2019-2020.

On 2 January 2020, the National Agency for Meteorology and Environmental Monitoring (NAMEM) announced that more than 50% of the country was at risk of dzud.

By the following week, 12 January, over 70% of the country was under 10-30 cm (4-12 inches) of snow. The aimags of Arkhangai, Bulgan, Govi-Altai, Dundgovi, Uvurkhangai, Sukhbaatar, Khovd, Khentii, and Zavkhan were experiencing severe winter conditions with local hay and fodder reserves completely consumed at the soum level.

2020 June-September – Drought

Drought conditions persisted over four months, June to September 2020, in Mongolia with varying degrees of severity across the country. This period is when most annual precipitation occurs, yet a series of moderate to extreme droughts occurred in the central and southern regions.

A 10-day drought map in September 2020 showed bands of areas at risk of extreme drought in several central southern provinces.

2020 June – Flash Floods

Heavy rainfall from June to August 2020 caused flash floods across the country to varying degrees.

Heavy rainfall started 17 June 2020 and continued through July, averaging 50-60 mm (2.0-2.4 inches) across the country with the highest precipitation of 85 mm (3.4 inches) recorded in Bulgan aimag on 8 July 2020.

Flash floods on 3-4 July caused the deaths of 5 people in Umnugovi aimag in central southern Mongolia, 3 deaths in Sukhbaatar in the country’s east, and damaged approximately 2,360 houses and killed 7,000 animals across Tuv, Khuvsgul, and Khentii aimags.

Severe flash floods also occurred 11-15 July, particularly in Uvs, Khentii, and Tuv aimags, with other affected provinces including Arkhangai, Orkhon, Khuvsgul, Darkhan-Uul, Dornod, Govi-Altai, Selenge, and Umnugovi. Parts of Ulaanbaatar were also affected,

damaging more than 14,000 m^2 (150,694 square feet or 3.5 acres) of public areas and 13,100 m (8.1 miles) of bitumen road.

The hardest hit districts of the capital were Bagakhangai, Sukhbaatar, and Bayanzurkh, where more than 200 households were severely affected.

2020 July – Marmot plague

In July-September 2020, cases of marsupial plague were registered in 3 provinces, and 3 citizens died. Employees of the Emergency Organization, Department of Health, and Center for Research on Zoonotic Diseases worked at the center of the disease. They set up quarantines and restrictions on entry and exit across the borders of these provinces, and set up dead bodies and checkpoints. As a result, infectious diseases did not spread.

2021 January – Dzud

Mongolia experienced dzud conditions in the winter of 2021-2022. More than 60% of the country was identified with dzud risk, including five aimags with more than 20% of very high-risk coverage. Therefore, starting from December, the government and international organizations have defined the first tasks, such as distributing cash and animal feed kits to herders.Using forecast-based financing, aid was distributed earlier before the dzud could cause significant livestock deaths.

The vitamins and minerals in the kits are vital as otherwise malnourished cold-stressed animals cannot digest properly even if fed hay. Assessments determined cash-strapped herders only had a seasonal source of cash selling goat wool in the spring, but cash provisions would allow them to purchase hay locally.

2021 March – Sandstorm

Violent wind gusts and sandstorms swept across the country 14-15 March 2021. Wind speeds reached 18-34 meters per second (m/s; 40-76 miles per hour (mph)) in Uvurkhangai, Bulgan, and Umnugovi aimags. Wind speeds reached 22-40 m/s (49-89 mph) in Dundgovi aimag, and 16-28 m/s (36-63 mph) in Govi-Altai, Bayankhongor, Arkhangai, Tuv, Khentii, Dornod, Sukhbaatar, and Dornogovi aimags.

Although warnings were disseminated two days prior, many people traveling and herding livestock still went missing. During the wind and sandstorm, 590 people went missing, most of whom were found afterward. Reportedly, 10 people had died (9 adults and 1 child), most of whom were from Dundgovi. Additionally, 1.6 million head of livestock were missing, 69 buildings and houses were severely damaged, and 92 gers were destroyed.

2021 – Animal diseases

As of March 6, 2021, 147,337 livestock were infected by the foot and mouth disease in 301 foci of FMD in 20 aimags in Mongolia, whereas as of December 30, 2021, 8,112 cases of FMD have been reported in 7 aimags. As of December 30, 2021, quarantine measures were implemented in 159 foci of FMD in 17 aimags, and the restricted regime was set in 18 foci in 5 aimags. In addition, the quarantine regime was lifted in 124 foci in 13 aimags.

The first suspected case of lumpy skin disease was reported on August 21, 2021 in Dornod aimag. Based on the results of the August 26, 2021 test of the State central

veterinary laboratory, it was determined that this infectious disease was diagnosed for the first time in Mongolia.

As of December 29, 2021, 20 cases of lumpy skin disease were registered in 60 foci in 3 aimags nationwide. In 3 aimags where the disease was registered, 185412 livestock were vaccinated.

In 2021, 277 cases of sheep pox were registered in 6 herder's households in 4 foci in 3 aimags. As no cases of sheep pox have been reported nationwide since September 24, 2021, the quarantine regime had been completely lifted in the affected aimags.

In 2021, 36 outbreaks of Peste des petits ruminants (PPR) were registered in 5 aimags and 1 district of Ulaanbaatar, and 5,038 sheeps and goats of 96 households were infected. Since October 11, 2021, no cases of PPR have been reported nationwide. In the aimags where the disease was registered, 1817508 livestock were vaccinated.

2021 July – Flash Floods

Flash floods occurred all around Mongolia due to prolonged heavy rainfall from 28 June to 29 July 2021. The rainfall averaged 46-60 mm (1.8-2.4 inches) across the country. The flash floods and heavy rain severely affected 1,549 households in seven aimags: Arkhangai, Umnugovi, Orkhon, Dornogovi, Govi-Altai, Uvurkhangai, and Tuv.

Umnugovi was the most severely affected by torrential rains and devastating flash floods on 24 July. The local emergency management agency reportedly received 274 rescue calls, while search and rescue operations helped 397 people. No casualties were reported in Umnugovi. However, five people died in Govi-Altai due to flash flooding also caused by heavy rain on 24 July.

By 28 July, 1,506 houses or gers were severely damaged and 43 gers were completely destroyed across Mongolia due to the flash flooding from more than a month of heavy rain.

3. LAWS, POLICIES, AND PLANS ON DISASTER MANAGEMENT

Mongolia has made significant progress in implementing a strong legislative framework for DRR and climate adaptation activities within a relatively short time span.

DRR and climate adaptation activities in Mongolia are being organized in accordance with the Mongolian Constitution, the Mongolian National Security Concept, the Law on Disaster Protection and national policies and programs on disaster risk reduction.

Section 16.1.2 of the Mongolian Constitution states that citizens have "the right to live in a healthy, safe environment and to be protected from pollution and ecological imbalances". Section 3.5.5.2 of the National Security Concept states "Strengthen the disaster management system, take actions at the national level to reduce vulnerabilities, create conditions to encourage participation in the efforts by central and local governments, specialized organizations, private entities and citizens, create favorable working conditions for them and increase their capacities".

In 2003, the Parliament of Mongolia adopted the Law on Disaster Protection, where matters and roles relating to disaster protection were entrusted to state organizations, local authorities, NGOs, to the private sector and individuals. In terms of the restructuring of the legal environment, the Law on Disaster Protection was reformulated in accordance with international policies aimed at ensuring global

sustainable development and DRR, and was approved by the Parliament in February 2017.

The newly reformulated Law on Disaster Protection of 2017 introduced an approach which focused on disaster prevention, risk reduction, mitigation and resilience as opposed to responseoriented mechanisms and established a new body responsible for disaster risk management in national and local levels named as National Council for DRR. The Prime minister chairs the National Council for DRR.

Within the legal framework on DRR, Mongolian Government implementing the following policy documents: “Vision for Sustainable Development in Mongolia-2030”, “National Policies and Programs for Disaster Risk Reduction” (2011), the “The National Program of Community Participatory Disaster Risk Reduction” (2015) and the “Mid-Term Strategy to Implement the Sendai Framework for Disaster Risk Reduction in Mongolia” (2017).

State Policy on Disaster Protection and National Program on Strengthening Disaster Protection Capacity:

The “State Policy on Disaster Protection” and the “National Program on Strengthening Disaster Protection Capacity” were approved by the Parliament resolution # 22 on May 13th, 2011.

The purpose of the State Policy on Disaster Protection is to strengthen the disaster management system, educate the public on safe living, reduce disaster vulnerability and enable the participation of national and local government agencies, professional organizations, the private sector and citizens in disaster protection activities.

The goal of the National Program on Strengthening Disaster Protection Capacity10 is strengthen the disaster management system, reduce disaster vulnerability, provide efficient involvement of national and local government agencies, professional organization, the private sectors and citizens in disaster protection activities and to improve disaster preparedness capacities and their capabilities. The program goal is achieved in the frame of the following strategic objectives:

- Strengthen the disaster management system and provide efficient involvement of national and local government agencies, professional organization, the private sector and citizens in disaster protection activities;

- Conduct risk assessments of natural, manmade and technical disasters by each type and implement disaster vulnerability reduction activities at the national level;

- Enhance the legal and regulatory environment for coordination of humanitarian disaster relief operations, strengthening insurance coverage, empowering government and private sector's commitment to disaster protection and promoting a common understanding of the terminologies used on this subject;

- Introduce latest technologies and methodologies in the assessment and forecasting of potential disastrous and hazardous phenomena, and advance the early warning system to establish efficient and effective information dissemination methods; and

- Strengthen the capacity of human and technical resources for disaster response.

The program is implemented in two phases, 2011-2015 and 2015-2020 respectively.

"Mongolia Sustainable Development Vision 2030" was approved by the Mongolian Parliament in 2016. The goal 2.3 of the "Mongolia Sustainable Development Vision 2030 " which states "Creating the national capacity for adapting to climate change and strengthening the capacity for taking preventive measures against climatic and natural hazards", is planned to be implemented according to the following phases:

- Phase I (2016-2020): Developing and implementing a strategy for climate change adaptation, strengthening disaster management capacity, refining the system for monitoring, predicting, and warning about natural hazards and potential disasters ahead of time, and providing education on adaptability and DRR to citizens through lifelong learning programs.
- Phase II (2021-2025): Implementing model projects for climate change adaptation, transmitting best practices, and regularly organizing DRR and disaster vulnerability reduction activities at a national level.
- Phase III (2026-2030): Diminishing the consequences of climate change and soil degradation; and mitigating disaster risk and its ensuing damages.

The National Program of Community Participatory Disaster Risk Reduction:

The Mongolian Government approved the "National Programme of Community Participatory Disaster Risk Reduction" by the resolution # 303 of July 20, 2015.

The goal of this program is to reduce disaster risks through involvement of communities and individuals in activities of disaster prevention, enhancement of their knowledge and skills due to training and education, promotion and communication, in the creation of safe living culture and strengthening resilience to climate change.

All levels of state and local administrative bodies, non-governmental organizations, legal entities, DRR authorities, specialized units, volunteer DRR groups, unions, cooperatives, herder groups and citizens involve in the implementation of the program. The program is being implemented in 2015-2025.

4. DISASTER MANAGEMENT SYSTEM

4-1. Disaster Management System of Mongolia

DRR activities at the national level are organized under the oversight of the Government member in charge of emergency management by the head of the governmental administrative agency in charge of emergency management; and such activities at the local level are organized by the local governors of the administrative unit, state and municipal organizations and legal entities.

The reformulated Law on Disaster Protection (2017) states "National Council for Disaster Risk Reduction shall be established at the national level, and local councils shall be established at aimags, the capital and districts". The National and local councils ensure the cooperation between the public and private sectors, intersectoral collaboration and citizen participation in disaster prevention activities, as well as policy recommendations. The councils are composed of non-permanent staff members.

The National Council for DRR is headed by the Prime Minister and the local Councils for DRR are headed by the local governors of the relevant administrative units; while the State Emergency Commission is headed by the Government member in charge of emergency management, and the aimag and capital level emergency commission is headed by the local governors of the relevant administrative units. The deputy head of the State Emergency Commission is the chief of the governmental administrative agency in charge of emergency management, the deputy head of a local emergency commission is the head of the local emergency management, and the deputy head of a soum emergency commission is the head of the administration unit of the soum government.

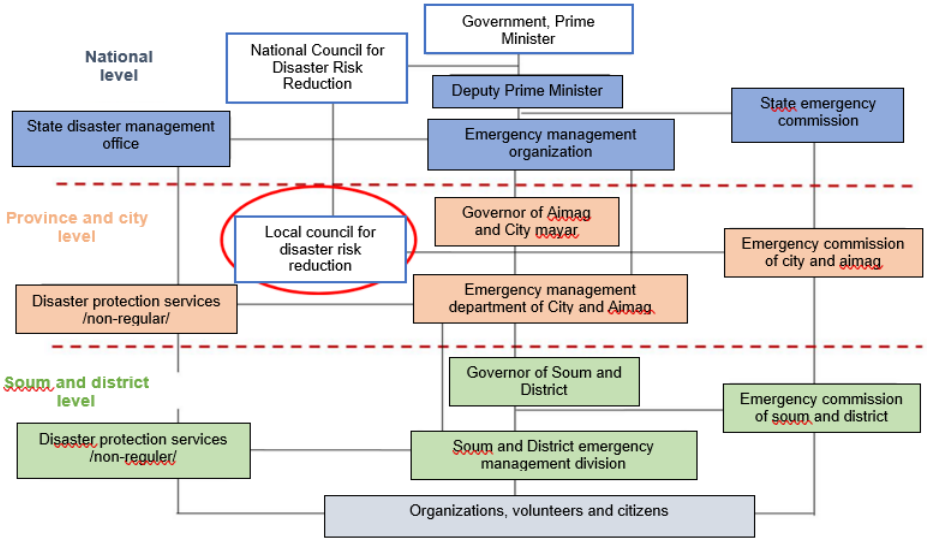

Figure 3. Disaster Management System of Mongolia

4-2. Lead Government Agencies in Disaster Response:

National emergency management agency

The Law on Disaster Protection was approved by the Parliament of Mongolia on 20 June, 2003.

According to the Law on Disaster Protection, NEMA is responsible for implementation of the State disaster protection policy and legislation, as well as for the professional organization of nationwide activities. Therefore, Disaster management in Mongolia is led by the National Emergency Management Agency (NEMA), the organizational structure of which is illustrated in Figure 4.

There are several subdivisions of NEMA including rescue units, firefighting units, and others. Disaster Risk Reduction (DRR) activities at the national level are organized under the oversight of the Government, specifically the Deputy Prime Minister, who leads the charge during emergencies.

During a disaster response, NEMA is responsible for coordinating the activities of different stakeholders who are involved in disaster response including non-governmental and governmental organizations, the private sector, community groups, and international organizations.

In addition, all 21 provinces and the capital city have a NEMA emergency management division and department. Totally more than 7000 emergency personnel (rescuers and firefighters) nationwide working in a local emergency management divisions or departments.

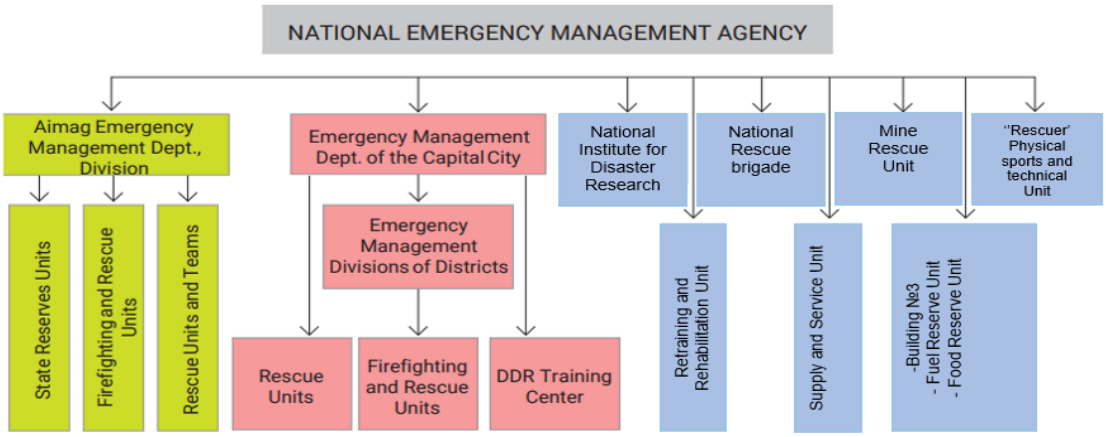

Figure 4. The structure of National emergency management agency

NEMA's functions are:

- Strengthen the legal environment of disaster protection, improve policy coordination, and develop partnership and cooperation on disaster risk reduction at national, regional and international level.
- Develop and strengthen a disaster risk management system and introduce science and innovation in disaster protection activities.
- Strengthen the management leadership of the organization and human resource development, and capacity building.
- Ensure disaster prevention measures as a universal activity, increase community disaster awareness and ensure public participation in disaster risk reduction.
- Strengthen professional management on disaster protection, enhance the preparedness of equipment and techniques, strengthen capacity of search and rescue, response and recovery operations in disaster sites.
- Ensure the fire safety, strengthen firefighting system and improve the preparedness of techniques through fire prevention and state control.
- Deliver state reserve activities with management and coordination; strengthen disaster response through efficient humanitarian assistance coordination and recovery.
- Increase disaster budget, financing, logistics and investment and introduce new technologies in disaster protection.
- Conduct monitoring and evaluation, and internal audit and increase the outcome and productivity in disaster protection.

The role of the National Emergency Management Agency of Mongolia is defined primarily by three basic laws:

1) The Law on Disaster Protection;
2) Law on Fire Safety;
3) The Law on State Reserve.

Law on Disaster Protection:

Law on Disaster Protection regulates the process to organize the disaster protection activities in a timely and effective manner, as well as to regulate relations related to the Emergency Management Organization of Mongolia, and management system, organization and operation of disaster protection activities.

Law on Disaster Protection regulates coordination of the involvement of Emergency Management Organization of Mongolia, National Council on Disaster Risk Reduction, State Emergency Commission, State Services of Disaster Protection, State and Local Authorities, enterprises, private entities and civil society in the framework of disaster prevention, preparedness, disaster risk reduction, search and rescue, response and recovery activities, as well as to implement state control on disaster protection.

Law on Fire Safety

Law on Fire Safety regulates the process of obligation and duty as well as mandates of local authorities, private enterprises and entities and individuals on providing the fire safety. Law on Fire Safety organizes nationwide firefighting and fire prevention activities.

Law on State Reserve

Law on State Reserve regulates the process for stocking state reserve items, storage, transportation and renewal of the emergency stockpiles.

Law in State Reserve reinforces the law implementation through the state reserve branches for stockpiling, storing and restocking state reserve items in accordance with approved location, list, quantity and disposing of them by a decision of the Government.

The National Security Concept and State Policy on Disaster Protection was enacted in 2010, and the National Program for Strengthening DRR was enacted in 2011.

State Emergency Commission

The State Emergency Commission (SEC) is tasked with organizing DRR activities and coordinating and monitoring initial response actions established by the Government.

The Commission is also responsible for organizing emergency commissions at the aimag, Capital, soum, and district level that are mandated to be established by the Governor of the relevant administrative unit.

Disaster Management Partners:

A number of partners and stakeholders have played an important role in protecting Mongolia's people from disasters and supporting the government after large-scale disasters.

National emergency management agency works with a relationship with the following international institutions and organizations:

<u>Bilateral and multilateral cooperation organizations:</u>

- The Ministry of the Russian Federation for Affairs for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters
- Federal Agency for State Reserve, Russian Federation
- Ministry of Emergency Management, People's Republic of China

- China Earthquake Administration
- State Forestry Administration, People's Republic of China
- United States Army Pacific
- Alaska National Guard, United States
- United States Indo-Pacific Command
- United States Forestry Service
- Ministry of Interior and Safety, Republic of Korea
- National Fire Agency, Republic of Korea
- State Committee of Emergency and Disaster Management of Democratic People's Republic of Korea
- General Directorate for Civil Defense and Crises Management, French Republic
- Directorate for Disaster Management, Republic of Hungary
- Ministry of Emergency Situation, Republic of Kyrgyzstan
- Ministry of Internal Affairs of the Republic of Kazakhstan

International organizations:

- UN Agencies
- International Civil Defense Organization (ICDO)
- Asian Disaster Reduction Center (ADRC)
- Asian Disaster Preparedness Center (ADPC)
- International Atomic Energy Agency (IAEA)
- International Fire Chiefs' Association of Asia (IFCAA)
- World Bank (WB)
- Asian Development Bank (ADB)
- International Federation of Red Cross and Red Crescent Societies (IFRC)
- Mongolian Red Cross (MRC)
- Mercy Corps
- World Vision (WV)
- Save the Children
- Japan International Cooperation Agency (JICA)
- Korea International Cooperation Agency (KOICA)
- Turkish International Cooperation Agency (TICA)
- Swiss Agency for Development and Cooperation (SDC)
- United States Agency for International Development (USAID)

5. ECONOMIC IMPACT OF DISASTERS

According to a study, natural hazards constitute 27% of total natural and human induced hazard occurrences, but constitute 95% of total economic damage.

Table 4. The share of disaster damage in GDP

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Averag

Economic damage caused by disasters /billion tugriks/	GDP of Mongolia / billion tugriks /	Percentage for GDP caused by disaster loss
159.6	1115.6	14.2
107.8	1240.8	8.3
35.8	1461.2	2.3
3.7	1945.4	0.2
5.5	2524.3	0.2
12.5	3172.4	0.4
200.6	4557.5	4.4
35.1	6130	0.6
16.3	6055	0.3
534.8	9756.6	5.5
9.6	13173.8	0.1
94.5	13853.4	0.7
21.9	14350.7	0.2
25.2	15482.3	0.2
79.9	15850.7	0.5
43	16035.9	0.3
96.7	16886.1	0.4
18.8	18059.5	0.3
22.8	21901.9	0.4
31.3	30067.1	0.5
77.27	10681.01	2.0

Disasters in the last 20 years, the average economic loss caused by natural and human induced hazards amounted to $US 28.4 million (77.27 billion tugriks) per year (NEMA; 2020) which represents 2.0% of the GDP of Mongolia. However, economic losses from the dzud of 2009-2010 alone reached 4% of the yearly GDP, and from the total losses that occurred between 1996-2013, almost 40% was caused by said event. The dzud also affected 220,000 households in fifteen provinces, and resulted in a monetary loss of US$ 192 million, (Benson, 2011). As a large portion of the country's income has been sourced from animal products, including internationally renowned cashmere and wool, loss of livestock has severe long-term impacts on the economy. The effects of the dzud were heightened by the global economic crisis which began in mid-2008, as the foreign trade of Mongolia is also heavily dependent on gold, copper and coal exports (Benson, 2011) which are also vulnerable to fluctuations of the global markets.

6. IMPLEMENTATION OF THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION

During the third World Conference on Disaster Risk Reduction held in Sendai, Japan in 2015, 187 nations approved the "Sendai Framework for Disaster Risk Reduction 2015-2030" document. Among the seven goals and activities included in the "Sendai Framework for Disaster Risk Reduction" to be adopted worldwide, the participating countries have made the commitment to align their respective national legislation and regulations to the first four goals, and to implement them according to their own resources and capabilities.

Furthermore, NEMA had developed the "Mid-Term Strategy to Implement the Sendai Framework for Disaster Risk Reduction in Mongolia (2017-2030)" which was approved by the Government by the resolution 355 of December 27, 2017.

The Strategic Goal of the Mid-term Strategy is to reduce disaster existing and new risks by carrying out measures that prevent and minimise hazard exposure and vulnerability to disaster, through mitigation, prevention, preparedness, and recovery actions, thus strengthening resilience in Mongolia. The Sendai Framework is

implemented in Mongolia in three phases between 2017-2020, 2021-2025 and 2026-2030.

In the first phase, it was successfully implemented based on the cooperation and partnership of public and local organizations, science, civil society organizations, the private sector, citizens, the public and international organizations.

The second phase action plan, disaster risk reduction activities will be intensified at the national level, the capacity of disaster protection forces will be enhanced, a disaster risk database will be established, and public awareness on disaster prevention and risk reduction will be increased.

The action plan of the Phase II of the “Med-Term Strategy for the Implementation of the Sendai Framework for Disaster Risk Reduction in Mongolia” plans to implement 56 measures under the 4 priority areas and the 7 targets, and includes disaster risk reduction issues for women, children, people with disabilities and gender.

Priority 1. Understanding Disaster Risk. All levels of official administration in Mongolia generally share a good understanding of disaster and climate risks, and various institutions have the mandate for data collection and hazard-forecasting (UNECE, 2018). However, risk assessments tend to be sector specific initiatives with a limited scope.

National Institute for Disaster Research carries out some multi-hazard risk assessments, but they do not extend to national or local levels, and do not cover all key sectors due to lack of systematically reported and analyzed hazard or vulnerability data (National Emergency Management Agency, 2015). The disaster related data does not disaggregate disaster related injuries, deaths, damages, missing persons or the affected by sex, disability or income (The Goverment of Mongolia, 2017) which does not allow detailed vulnerability and risk analyses based on historical events. However, disaster risk and vulnerability evaluations are still being conducted by professionals responsible for the regional or national disaster risk management according to the Law on Disaster Protection.

Priority 2. Strengthening Disaster Risk Governance to Manage Disaster Risk.

Mongolia has made significant progress in implementing a strong legislative framework for DRR and climate adaptation activities within a relatively short time span.

Disasters were specifically addressed by the government in the 2003 parliament Law of Mongolia on Disaster Protection, where matters and roles relating to disaster protection were entrusted to state organizations, local authorities, NGOs, to the private sector and individuals (Government of Mongolia, 2003). It also mandated that information related to disaster and disaster activities should be made public, and that a nation-wide disaster communications network will be established to enhance disaster protection measures through disseminated news, information and warning signals (Government of Mongolia, 2003).

The newly amended Law on Disaster Protection of 2017 introduced an approach which focused on disaster prevention, risk reduction, mitigation and resilience as opposed to response-oriented mechanisms.

Priority 3. Investing in Disaster Risk Reduction for Resilience. Budget authority for government’s activities has been centralized under the Treasury Single Account System, which led the accounts of public entities to be governed by the Ministry

of Finance, granting the ability for stricter monitoring of governmental expenditure (CIP, 2018). The expenditure is dictated by the national investment plan, which allocates the state budget for individual sectors. We consider costs related to disaster prevention, risk reduction, response and recovery, but the budgeted amount for activities has been relatively small (Amgalanbayar, 2011). Focus has been on recovery measures after a disaster hits, and financing has been drawn from the reserve funds. Apart from the central government, individual sectors have not had reserves and resources set aside for disaster reduction activities in the past (Amgalanbayar, 2011). The issue persists today; certain amount of money is allocated to local governments from the Reserve Fund; however, most of it is spent on direct disaster relief and recovery, and insufficient financial resources prevent the implementation of disaster risk reduction plans (National Emergency Management Agency, 2015).

Government of Mongolia has adopted a new insurance scheme with the support of the World Bank to aid herders to combat disaster losses. The program is a tripartite between self-insurance, market-based approach and social safety net, where small losses are herders' responsibility, private industry covers larger losses, and only catastrophic losses are borne by the government (The World Bank, 2015).

Priority 4. Enhancing disaster preparedness for effective response to "Build Back Better" in recovery, rehabilitation and reconstruction. Recovery programs and initiatives in the past have been conducted with the support of NGOs, such as People in Need, the IRFC and the Mercy Corps.

To further support the work of NGOs in the country, the government included a new chapter about International Human Assistance into the 2017 Disaster Protection Law, according to which all aid and services must meet the needs of affected populations and abide by the standards of humanitarian aid (CFE-DM, 2018).

7. PROJECTS AND PROGRAMS IMPLEMENTED IN THE EMERGENCY MANAGEMENT ORGANIZATION

I. Project of Establishment of the Aerial Rescue Unit and Supply of Helicopters and Fire Trucks to the Emergency Management Organization (2020-2023):

Activities under Component 1 of the Project:

- Supply of helicopters, equipment and a simulator:

  1. Within the implementation of the project, 3 units of EC-145 helicopter, a Cabri train ing helicopter and a simulator will be supplied. The first two units of the EC-145 helicopter were supplied on April 27, 2021, and the Cabri helicopter was supplied on June 21, 2021.

  2. A total of 19 deliveries of helicopters EC-145, a Cabri helicopter and tools, and 24 deliveries of hangar parts were received and exempted from the taxes.

- A hangar and a training facility:

  A contract for building foundation casting and infrastructure work for the hangar and training facility was signed with Meta Management LLC, and the foundation casting and infrastructure work was conducted between June and September 2021. In addition, employees of Utilis Company, a subcontractor of Heli-Union group, completed the construction of the hangar in September-November 2021, and handed over the hangar and training facility to the State Commission.

- Inspection and acceptance of helicopters and issuance of relevant permits:

  A working group has been set up to inspect the helicopters and transfer them to NEMA's ownership, which includes experts from the Air Force Command and the Civil Aviation Authority. Initially, the working group inspected and evaluated one unit of EC-145 helicopter with serial number 9203 and one unit of Cabri helicopter in October 2021. Issuance of a certificate of airworthiness to the helicopters and transfer to the ownership of NEMA is in the process of.

Activities under Component 2 of the Project:

- Production and supply of special purpose vehicles:

  1. The project planned to supply 42 special purpose fire trucks in two shipments. The first 21 vehicles were scheduled to be delivered in September 2021 and the other 18 vehicles in December 2021, respectively. All vehicles were received on time and distributed to central and local emergency management departments along with organization of training.

II. Technical Assistance Project for Strengthening Integrated Early Warning System in Mongolia (2020-2021):

- Inception Mission:

  The Inception Meeting of the Project for Strengthening the Integrated Early Warning System in Mongolia, funded by the Asian Development Bank's, was held online on November 9, 11-13, 2020. During the meeting, a concept of Memorandum of Understanding was discussed and developed. The Ministry of Finance approved the MOU on October 3, 2021.

- Interim Mission for Med-term project performance evaluation:

  The Interim Mission was conducted online on October 11-15, 2021. During the mission, a Working Minutes was prepared and signed by the Ministry of Finance, the Asian Development Bank and the National Emergency Management Agency.

- Fact Finding Mission:

  Fact Finding mission was conducted online on December 6-10, 2021. The mission reviewed the feasibility study of the "Strengthening the Integrated Early Warning System in Mongolia" loan project, the project final report, and the draft project management manual developed by the technical assistance project consultants and made the report.

III. Technical Assistance Project on Disaster Risk Assessment, Planning and Risk Transfer Capacity Building (2020- April 2024:

- Objective 1: Improving disaster risk assessment:

  1.1. The first training on disaster risk assessment was held online on May 10-12, 2021. The training introduced basic concepts of risk, risk assessment, risk management, evidence-based disaster risk assessment, assessment process and methodology, current legal and institutional environment of disaster risk assessment in Mongolia, and organized a tabletop exercise on sole and complex disaster situations, development of risk matrices and fault curves, and estimation of economic loss.

  1.2. The second training on disaster risk assessment and hazard mapping was organized on October 5-6, 2021 for representatives of relevant ministries and agencies, and specialists in charge of disaster risk management and assessment of the Emergency Management Organization.

1.3. An interim Mission Meeting of the project was held on November 24-25, 2021, and a detailed action plan was developed, and a working minutes was signed.

1.4. Within the framework of the project implementation, a Coordinator in charge of the project regional center has been selected in 5 regional centers and has been working since November 1, 2021.

- Objective 2: Enhancing disaster resilience:

2.1. Disaster risk assessment training needs assessment was conducted.

2.2. The first 5 aimags to conduct the risk assessment were selected according to the criteria.

- Objective 3: Development of disaster risk insurance:

3.1. Within the framework of drafting the Disaster Risk Insurance Law, a selection of a law firm was done, and a consulting firm, Anand Advocates LLP was selected to draft the law.

3.2. International consultants have been provided with information on two disaster risk products available in the domestic market, as well as relevant industry legislation, the Financial Regulatory Commission's set of insurance rules, and related regulations.

3.3. The second training and workshop on disaster risk financing was organized online on September 30, 2021. The training provided participants with an understanding of international disaster risk financing and financial instruments such as disaster risk insurance, reinsurance and stock market transfer.

8. ADRC COUNTERPART

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