Resilient
Central Asia

Strengthening Disaster Resilience
and Accelerating Implementation
of the Sendai Framework
Programme

Укрепление устойчивости
к бедствиям и ускорение
выполнения Сендайской
программы

National Disaster Loss Databases implementation in Central Asia
Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan

Country Disaster Risk Profile of the Republic of Uzbekistan

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Funded by the European Union

UNDRR
UN Office for Disaster Risk Reduction

Description of the project

The "National Disaster Loss Databases implementation in Central Asia" project that covers Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan from July 2020 to January 2023, supports the participating countries in the development of damage and loss data and information collection, in accordance with the Sendai Framework for Disaster Risk Reduction 2015-2030 and in alignment to the requirements of the Sustainable Development Goals Agenda 2030.

The project is coordinated by the United Nations Office for Disaster Risk Reduction (UNDRR) within the framework of the "Strengthening disaster resilience and accelerating implementation of the Sendai Framework for Disaster Risk Reduction in Central Asia" initiative, funded by the European Union.

The focus of the project is the establishment of the DesInventar Sendai[1] at National Disaster Risk Reduction authorities in Central Asia. The DesInventar Sendai enables the collection of disaster losses and damages data and the analysis of such information associated to

natural and technogenic hazards. The system further facilitates the countries in their reporting on Sendai Framework Targets.

DesInventar Sendai is an updated version of the widely used software that simplifies damage and loss data collection and provides structured recording of damage and loss indicators that are required for the Sendai Framework reporting for Targets A to D. DesInventar Sendai allows definition and the use of Sendai Framework metadata to describe several indicators that includes a finer disaggregation of data. One of the main benefits of DesInventar Sendai is the full compliance with the Sendai Framework Monitor (SFM) to support and facilitate the annual Sendai Framework reporting through the SFM. On this link[2] official data of Sendai Framework Targets are reported for different years.

Both the SFM and the DesInventar Sendai are UNDRR's initiatives to accelerate the implementation of the Sendai Framework priorities to achieve the 7 global targets.

Historical records on disasters

The Republic of Uzbekistan is located in the central part of the Eurasian continent and is part of the arid zone of Central Asia. Almost four-fifths of the country's territory is located within vast semi-deserts and deserts, bordered from the southeast and east by large mountain systems. The total area of the country is 448,924 square kilometers[3], of which 78.8% are plains, 21.2% are mountains and foothills[4]. The population stands at 34 915 100 (2021)[5].

Earthquake, drought, landslide, epidemics, and flood are the major disasters in Uzbekistan[6]. Landslides have been estimated to account for 10-12% of the total damage caused by natural hazard related disasters. Annually, about 20 flash floods and mudflows occur in the country[7]. Hydro-meteorological hazards primarily affect the agricultural sector with seasonal floods and periods of drought. By the estimations of GFDRR floods and earthquakes impact roughly 1 400 000 people and with average losses at about US $2,800 million annually[8]. Climate change is projected to increase the risk of natural disasters, especially droughts, floods and landslides[9] in Uzbekistan.

The Ministry of Emergency Situations (MES)[10] of the Republic of Uzbekistan is a central government body responsible for directing and coordinating activities in the field of civil protection, prevention and response to emergency situations caused by accidents, catastrophes, and natural disasters in accordance with the Decree No. УП-1378 of the President of the Republic of Uzbekistan in 1996. The Cabinet of Ministers of the Republic of Uzbekistan provide the overall legal structure and function of the state system of prevention and emergency action. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 455 "On the classification of emergency situations of a technogenic, natural, and ecological character" dated October 27, 1998, determines emergency situations number of injured, dead, the amount of damage, as well as dividing the emergency zone into asset, local, republican, and cross-border emergencies. According to the classification, emergency situations are classified according to the causes (sources) of their origin into technogenic (7 types: transport accidents and disasters; accidents at chemically hazardous facilities; accidents at

fire-explosive facilities; accidents in energy and utility systems, sudden collapse of building structures; accidents associated with the use or storage of radioactive and other dangerous and environmentally harmful substances; hydrotechnical disasters and accidents), natural (5 types: geological; hydrometeorological; epidemiological; epizootic; and epiphytotic situations), and ecological (3 types: changes in the state of the land (soil, subsoil); change in the composition and properties of the atmosphere; change in the state of the hydrosphere).

An internal digital loss database has been maintained by the Ministry of Emergency Situations of Republic Uzbekistan since 1996 based on a web-based information system. The graphic below (Figure 1) illustrates the available statistics provided online by the Ministry of Emergency Situations[11] on the number of technogenic and natural emergency situations reported between 2014 – 2021. There were 452 registered technogenic emergencies and 260 events of natural phenomena during this period.
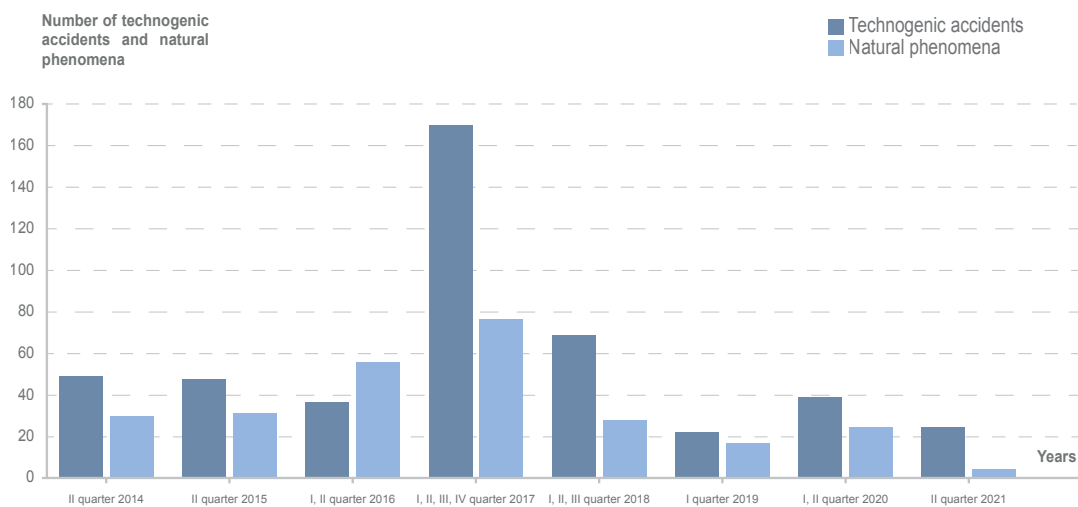

Figure 1. Number of technogenic accidents and natural phenomena 2014 - 2021, statistical data of the Ministry of Emergency Situations of the Republic of Uzbekistan[12]

The graphs provided below (Figure 2, Figure 3) illustrate the statistical data of the Ministry of Emergency Situations on the number of deaths and affected persons as a result of technogenic accidents and natural phenomena for the period 2014 - 2018. In total there were registered 829 deaths and 913 affected persons by technogenic emergencies and 340 deaths and 875 affected persons by events of natural phenomena accordingly.
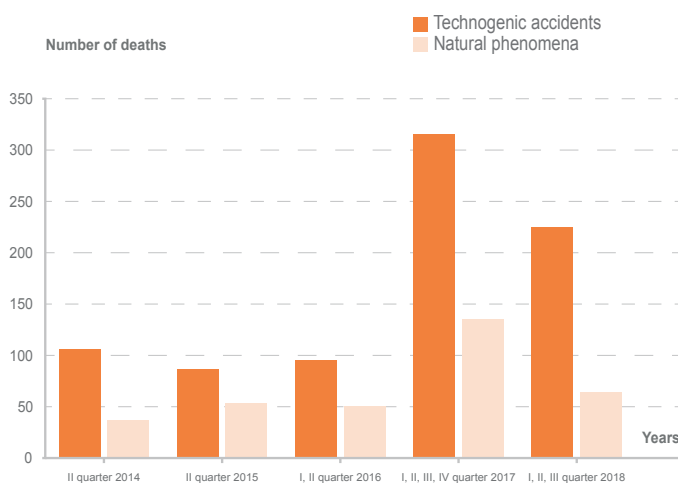

Figure 2. The number of deaths from technogenic accidents and natural phenomena in 2014 - 2018, statistical data of the Ministry of Emergency Situations of the Republic of Uzbekistan
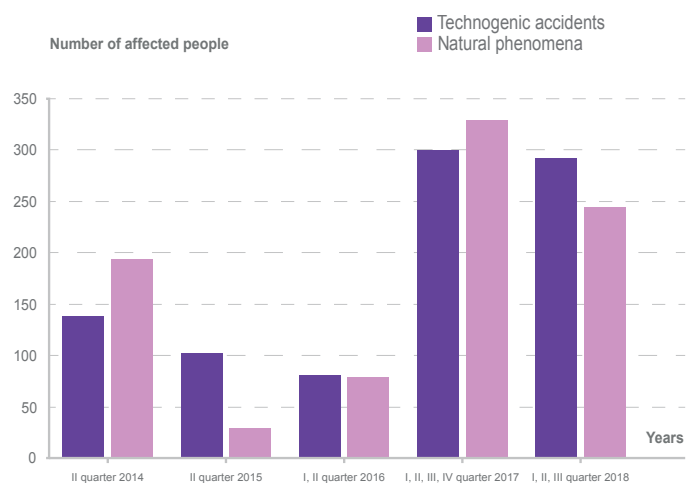

Figure 3. The number of people affected by technogenic accidents and natural phenomena in 2014 - 2018, statistical data of the Ministry of Emergency Situations of the Republic of Uzbekistan

INFORM Risk Index

Since 2021, INFORM risk index for Central Asia is maintained by the Center on Emergency Situations and Disaster Risk Reductions (CESDRR) in collaboration with UNDRR Regional Office for Europe and Central Asia and with financial support from United States Agency for International Development (USAID) Bureau for Humanitarian Assistance (BHA). The INFORM risk index for Central Asia is developed at the first administrative level (corresponding to the provinces/oblasts/regions and few independent cities) in Central Asia.

The subnational INFORM risk index 2022[13] for the Republic of Uzbekistan was defined as Low 4,1. The INFORM risk concept envisages three dimensions of risk:
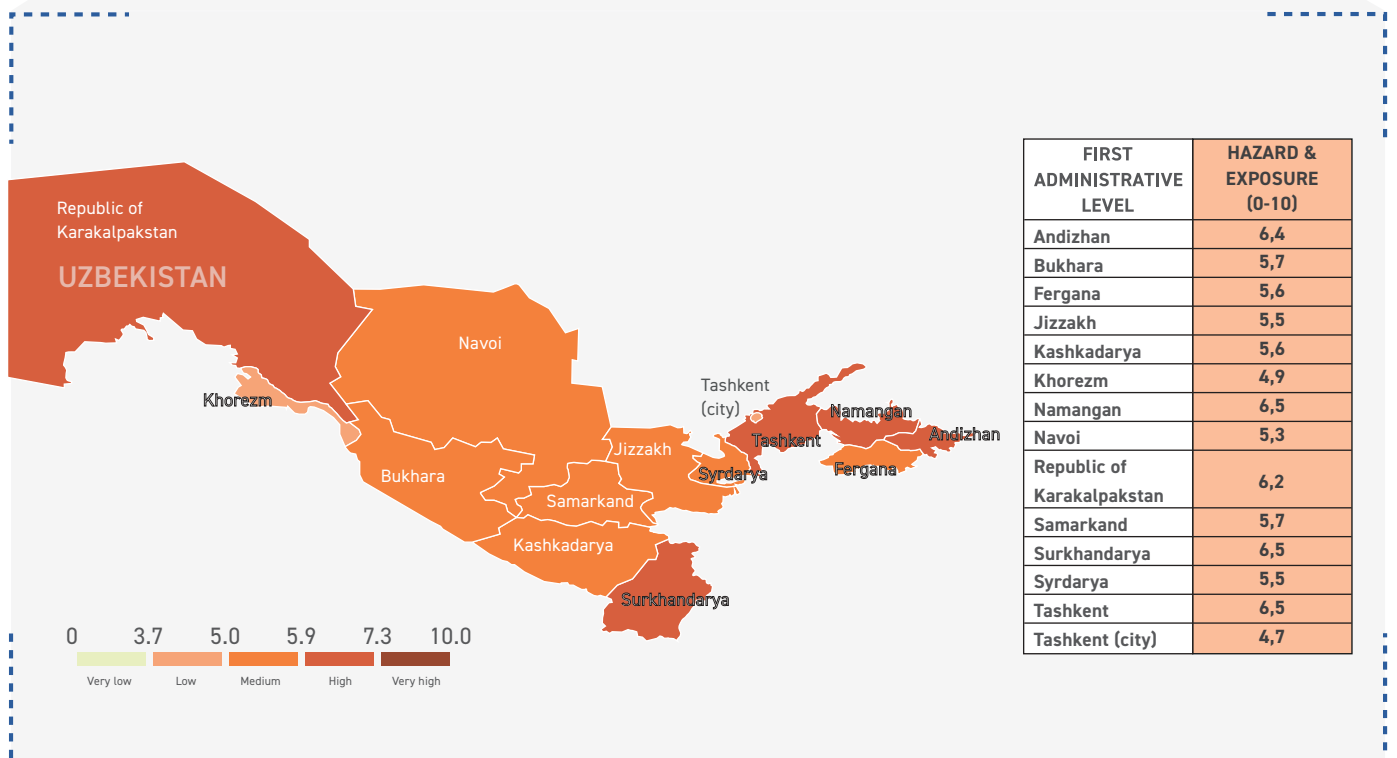
- **Hazards & Exposure** - events that could occur and the exposure to them.
- **Vulnerability** - the susceptibility of communities to those hazards.
- **Lack of coping capacity** - lack of available resources that can alleviate the impact.

HAZARD & EXPOSURE INDEX

The **Hazard & Exposure** dimension at country level was defined as Medium 5,8.

The **Hazard & Exposure** index at regional level reaches its maximum in regions in Namangan 6,5, Surkhandarya 6,5, Tashkent 6,5, Andizhan 6,4, and Republic of Karakalpakstan 6,2.

FIRST ADMINISTRATIVE LEVEL	HAZARD & EXPOSURE (0-10)
Andizhan	6,4
Bukhara	5,7
Fergana	5,6
Jizzakh	5,5
Kashkadarya	5,6
Khorezm	4,9
Namangan	6,5
Navoi	5,3
Republic of Karakalpakstan	6,2
Samarkand	5,7
Surkhandarya	6,5
Syrdarya	5,5
Tashkent	6,5
Tashkent (city)	4,7

VULNERABILITY INDEX

The Vulnerability dimension is overall Low. The score is however Medium in the Surkhandarya 3,5 and Syrdarya 4,4 regions.

FIRST ADMINISTRATIVE LEVEL	VULNERABILITY
Andizhan	2,9
Bukhara	2,7
Fergana	2,7
Jizzakh	2,8
Kashkadarya	2,8
Khorezm	2,8
Namangan	2,9
Navoi	2,6
Republic of Karakalpakstan	3,0
Samarkand	2,9
Surkhandarya	3,5
Syrdarya	4,4
Tashkent	2,8
Tashkent (city)	2,9

0	2.0	3.2	4.6	6.1	10.0
	Very low	Low	Medium	High	Very high

Sughd
Lack of coping capacity: 6.2

Jalal-Abad
Lack of coping capacity: 5.9

Dushanbe
Lack of coping capacity: 6.1

DRS
Lack of coping capacity: 6.3

Khatlon
Lack of coping capacity: 6.3

GBAO
Lack of coping capacity: 6.1

200 km

LACK OF COPING CAPACITY INDEX

The Lack of Coping Capacity dimension is overall Low 4,2.

Republic of Karakalpakstan

UZBEKISTAN

FIRST ADMINISTRATIVE LEVEL	LACK OF COPING CAPACITY
Andizhan	6,3
Bukhara	6,3
Fergana	6,3
Jizzakh	6,3
Kashkadarya	6,3
Khorezm	6,3
Namangan	6,3
Navoi	6,3
Republic of Karakalpakstan	6,3
Samarkand	6,3
Surkhandarya	6,3
Syrdarya	6,3
Tashkent	6,3
Tashkent (city)	6,3

0	3.9	4.7	5.8	7.0	10.0
	Very low	Low	Medium	High	Very high
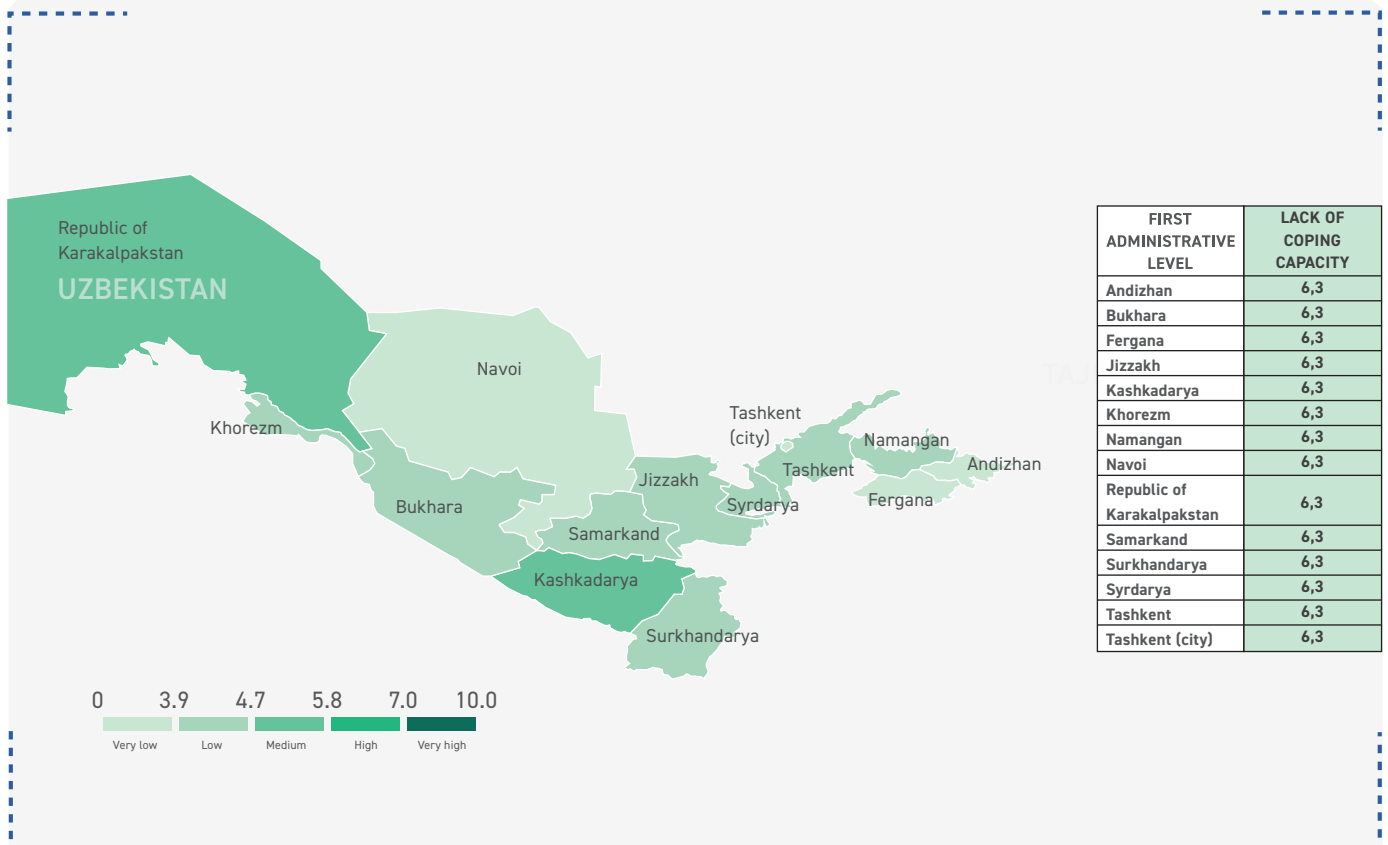
"ThinkHazard!" hazards likelihood

The ThinkHazard! web-based tool is developed and maintained by the Global Facility for Disaster Reduction and Recovery (GFDRR) providing a general view of hazards, for a given location to promote disaster and climate resilience. The tool highlights the likelihood of different natural hazards affecting an area (very low, low, medium, and high)[14] and is based on published hazard data, provided by a range of private, academic, and public organizations[15].

The high level of the likelihood was defined for following hazards[16]: river flood, urban flood, earthquake, landslide, water scarcity, extreme heat, and wildfire. There is very low likelihood for cyclone.

HIGH

RIVER FLOOD
The potentially damaging and life-threatening river floods are expected to occur at least once in the next 10 years. The present hazard level may increase in the future due to the effects of climate change.
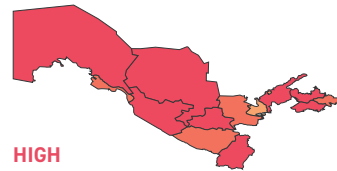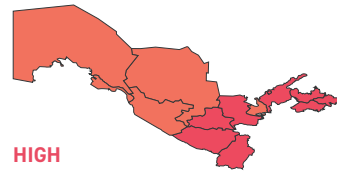
HIGH

URBAN FLOOD
The potentially damaging and life threatening urban floods are expected to occur at least once in the next 10 years. The present hazard level may increase in the future due to the effects of climate change.
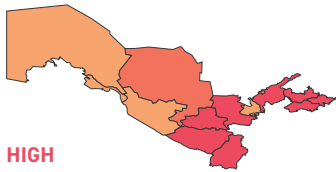
HIGH

WATER SCARCITY
The droughts are expected to occur on average every 5 years. The present hazard level may increase in the future due to the effects of climate change.

HIGH

EARTHQUAKE
There is more than a 20% chance of potentially damaging earthquake shaking in your project area in the next 50 years.

HIGH

LANDSLIDE
The rainfall patterns, terrain slope, geology, soil, land cover and (potentially) earthquakes make localized landslides a frequent hazard phenomenon. Climate change is likely to alter slope and bedrock stability through changes in precipitation and/or temperature.

HIGH

EXTREME HEAT
The prolonged exposure to extreme heat, resulting in heat stress, is expected to occur at least once in the next 5 years.

HIGH

WILDFIRE
There is a greater than 50% chance of weather condition that could support a significant wildfire that is likely to result in losses of both life and property in any given year. In areas affected by wildfires, the fire season is likely to increase in duration, and include a greater number of days of fire spread due to longer periods without rain during fire seasons. Climate projections indicate on an increase in the severity of fire.

VERY LOW

CYCLONE
There is a less than 1% chance of potentially damaging cyclone strong winds in the area in the next 10 years.

Legend:

HIGH
Severe damage expected within project\ or human lifetime, mitigation measures essential.

MEDIUM
Damaging effects expected within project or human lifetime, consider mitigation measures.

LOW
Less likely, but damaging events still possible, prudence in critical locations.

VERY LOW
Unlikely damaging effects, but potential still exists.

NO DATA AVAILABLE
No dataset for chosen location in ThinkHazard.

Conclusions

The Government of Uzbekistan has established a Technical Working Group consisting of 15 specialists from the Ministry of Emergency Situations to collaborate with UNDRR in developing the national system for managing data on losses caused by disasters. The country has been equipped to operate with DesInventar Sendai.

The DesInventar Sendai system, if adopted in future as an official tool for disaster loss data accounting, will support to strength the existing capacity of relevant national ministries and agencies in systematic collection and analysis of information on disasters that will lead to more specific measures for disaster risk reduction in the country.

The presented risk overview is based exclusively on the public information provided online by the Sendai Framework Monitor system, INFORM Risk index, UNDRR, CESDRR, and "ThinkHazard!" (GFDRR) platform.

References

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12. Ministry of Emergency Situations of the Republic of Uzbekistan, Comparative diagrams of past events: https://fvv.uz/ru/comparative

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