



MINISTRY OF ENVIRONMENT  
AND TOURISM



# Global Warming of 1.5 °C - Do We Still Have Time- Outreach Event on IPCC Work and Findings, Ulaanbaatar, Mongolia

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*Dzud* disaster:

(based on IPCC/SREX/2012)

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# *dzud*

- The Mongolian term *dzud* denotes unusually extreme weather condition that result in the death of a significant number of livestock over large areas of the country. Thus, the term implies both exposure to such combinations of extreme weather conditions but also the impacts thereof.

# *Dzud*

- *Dzud* is a compound hazard occurring in cold dry climate, and encompasses drought, heavy snowfall, extreme cold, and windstorms. It can last all year round and can cause mass livestock mortality and dramatic socioeconomic impacts including unemployment, poverty, and mass migration from rural to urban areas, giving rise to heavy pressure on infrastructure and social and ecosystem services

# Livestock in Mongolia

- Livestock have been the main stay of Mongolian agriculture and the basis of its economy and culture for millennia . This sector is likely to continue to be the single most important sector of the economy in terms of employment

# *dzuds* occurrence in Mongolia

- 1944-1945,
- 1954-1955,
- 1956-1957,
- 1967-1968,
- 1976-1977,
- 1986-1987,
- 1993-1994,
- 1996-1997
- ...

- The *dzud* of 1944-1945 was a record for the 20th century with mortality of one-third of Mongolia's total livestock.
- The 2009-2010 *dzud* caused similarly high animal mortality.

- Dzud disasters occurred in 1999-2002 and 2009-2010, causing social and economic impacts.
- These disasters occurred as a result of environmental and human-induced factors. The environmental factors included drought resulting in very limited pasture grass and hay with additional damage to pasture by rodents and insects .

# Contribution of Climatic factors

- Climatic factors contributing to both *dzuds* were summer drought followed by extreme cold and snowfall in winter.
- Summer drought was a more significant contributor to the 1999-2000 *dzud* while winter cold was more extreme in the 2009-2010 *dzud*.



# Disaster Risk Reduction options

- localized seasonal climate prediction
- Improvement of early warning
- Risk-insuring systems and policy

# Disaster Risk Reduction options

- Adaptation occurs through increased mobility of herders in search of better pasture for their animals in *dzud* disasters.

# Disaster Risk Reduction options

- Livelihood diversification to create resilient livelihoods for herders has also been seen as being effective for building climate resilience.

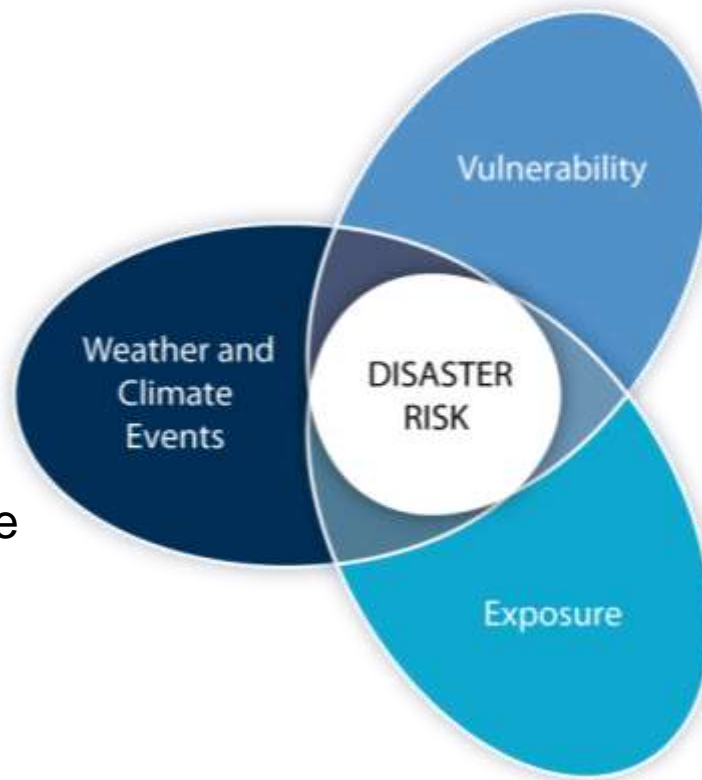
Heat wave
Drought
Warming trend
Mean wind decrease
Severe storms
Radiation decrease at surface
Dry trend
Cold spell
Wet trend
Frost
Dust and sandstorm
Wildfire
River flood
Pluvial flood
Lake and sea ice reduction
Ocean and lake acidification
Permafrost thawing
Landslides
Snow reduction
Heavy snow
Ice storm
Snow avalanche
solar radiation changes –this is a big concern in India
Air pollution
Hail storms
Atmospheric CO2 decrease
CO2 benefits across Asia (relevant for agriculture and ecosystems) and ocean acidification for coastal areas
Sea level rise
Coastal flood
Coastal erosion

# Dzud related hazards in AR6

Increasing vulnerability, exposure, or severity and frequency of climate events increases **disaster risk**

***Disaster Risk:***

the likelihood of severe alterations in the normal functioning of a community or society due to weather or climate events interacting with vulnerable social conditions



***Vulnerability:***

the predisposition of a person or group to be adversely affected

*Disaster risk management and climate change adaptation can influence the degree to which **extreme events translate into impacts** and **disasters***

Ideas and opinions

For AR6