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COLDWAVES in NEPAL

What is Coldwave?

- ✓ A cold wave refers to a period of unusually low temperatures, marked by a sharp decline in surface air temperature (including maximum, minimum, and daily averages) across a wide area (WMO, 2020).
- ✓ Cold waves may occur alongside or be preceded by severe winter events such as blizzards or ice storms.
- ✓ In Nepal, the Terai region is particularly vulnerable to cold waves, primarily due to the influence of western low-pressure systems during winter.
- ✓ These events pose a serious threat to communities in 23 Terai districts, affecting lives and livelihoods each year (PreventionWeb, 2022).

Conditions that Trigger Coldwave

Currently, there is no standard system in Nepal to identify the potential occurrence of a cold wave and no triggers to initiate a response, which has led to poor preparedness and delayed support for affected people.

Image Reference:

https://myrepublica.nagariknetwork.com/news/cold-wave-grips-madhesh-disrupting-daily-life-6775170d63f3a.html

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a) Readiness Phase

- ✓ DHM weather station records daily average max/min temperature < 10th percentile (based on last 20 years of data).
- ✓ Weather forecast predicts a further decrease in temperature over the next 3 consecutive days.

b) Activation Phase

- ✓ DHM weather station records daily average max/min temperature < 5th percentile (based on last 20 years of data).
- ✓ Weather forecast predicts a continued temperature decrease for the next 2 consecutive days.

Once the activation trigger is met, early actions are implemented to protect vulnerable populations and reduce impacts.

Coldwave in Nepal

- ✓ Occurs annually in Nepal's Terai lowlands, typically from mid-December to mid-January.
- ✓ Driven by human-induced air pollution: thick smog trapped over the plains, combined with westerly winds, causes a sharp drop in temperature.
- ✓ From 2000–2013, cold waves resulted in 797 human deaths, damaged 22,000 hectares of crops, and caused the death of 732 cattle.

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- ✓ The 2007 cold wave was one of the worst, causing nearly 50 fatalities in Terai districts (Siraha, Rautahat, Bara, Mahottari), with Siraha alone reporting 17 deaths.
- ✓ Between 2019–2022, cold waves caused 46 deaths across 23 Terai districts, mainly due to hypothermia.

Impact of Coldwaves in Nepal

- ✓ Increased mortality and illness, particularly cardiovascular and respiratory diseases (e.g., pneumonia, arthritis, rheumatism).
- ✓ Reduced winter crop production and agricultural losses.
- ✓ Closure of schools and disruption of public services.
- ✓ Flight cancellations and delays due to low visibility.
- ✓ Decline in market activity and economic slowdown.
- ✓ Disproportionate impact on marginalized communities (e.g., Musahar, Chamar, Dom).
- ✓ Loss of income opportunities for daily wage earners such as rickshaw pullers, cart drivers, and laborers.

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Ways to Increase Adaptation Against Coldwaves in Nepal?

- ✓ Implementation of Cold Wave Early Action Protocol (EAP)
- ✓ Development of continuous Weather Monitoring and Alert System
- ✓ Pre-Arrangement of Vendor and Supply Agreements related to food, clothes and other winterization kits (including tarpaulins, blankets, warm clothes, and other items)
- ✓ Capacity Building and Community Awareness of local people
- ✓ Development of Local SOPs and Coordination Mechanisms

What To Do During Coldwaves of Nepal?

- ✓ Stay indoors and avoid unnecessary travel.
- ✓ Keep dry; change wet clothes immediately.
- ✓ Use mittens instead of gloves for better warmth.
- ✓ Follow weather updates on radio, TV, or newspapers.
- ✓ Drink warm fluids regularly.
- ✓ Care for the elderly and children.
- ✓ Store enough water in case pipes freeze.
- ✓ Watch for frostbite signs like numbness or pale skin.
- ✓ Warm frostbitten areas gently in warm water.

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