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Institute of Himalayan Risk Reduction

# Anticipatory Action (AA) Tool *for* Heat & Cold Waves *in* Nepal

Heat waves and Cold wave hazards are under-realized in Nepal as it lacks spectacular and sudden violence like other hazards. AA Tool for Heat and Cold Waves is a smart and innovative way to respond to the potential crisis of Heat and cold waves backed up by the forecast information. With the availability of the IVCA information from the ground, trend analysis and forecast information; effective humanitarian assistance and interventions can be carried out prior to the onset of any predictable shock.

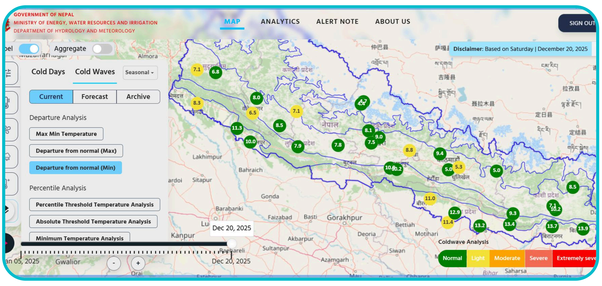
**The developed tool has four major components:**

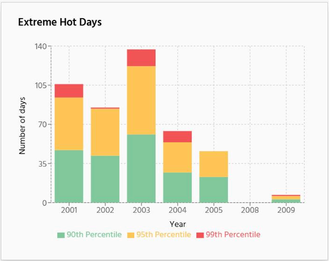
**i) Spatial and Temporal Trend Analysis of Historical events**

**ii) Current, Forecast & Archive section for Heat and Cold Wave Events**

**iii) Percentile and Absolute threshold temperature for different regions**

**iv) Map Visualization (station-wise data and district-level aggregated insights)**



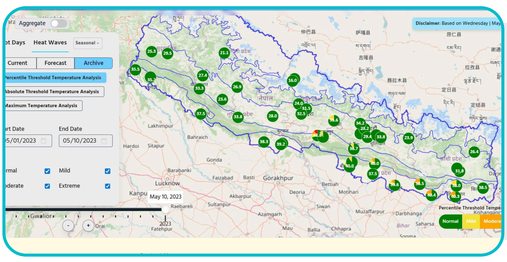




## Features

Tool capable of performing Historical Trend Analysis of Heat/ Cold waves at any DHM stations

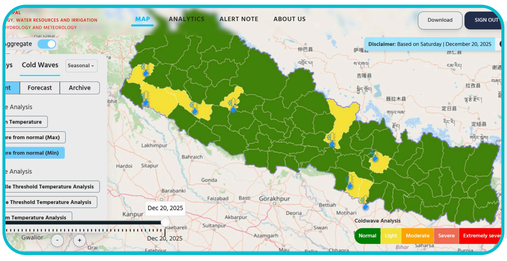
Sub-Province and station-wise absolute threshold calculation, providing a region-specific forecast

Alert Note Feature Sub-province wise heatwave alert based on risk level

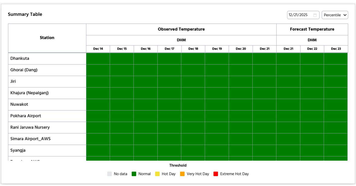


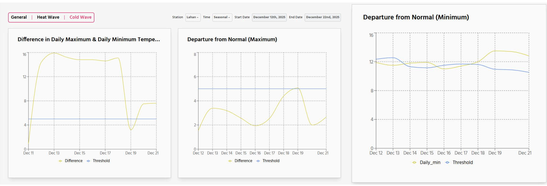
Current, Forecast & Archive Feature for Hot days & Heat waves

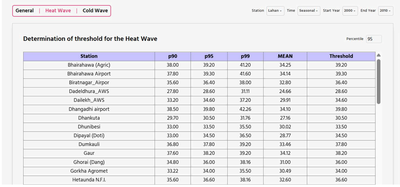
Cold days analysis based on percentile analysis



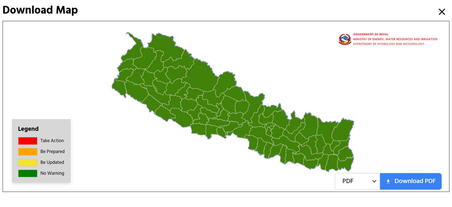
District-wise Cold wave alert issued by DHM




| Station | p90 | p95 | p99 | MEAN | Threshold |
|---|---|---|---|---|---|
| Bharahawa (Agric) | 38.00 | 39.20 | 41.20 | 34.25 | 39.20 |
| Bharahawa Airport | 37.80 | 39.30 | 41.60 | 34.14 | 39.30 |
| Bhairagar_Airpor | 35.60 | 36.40 | 38.00 | 32.80 | 36.40 |
| Dadeldhura_AWS | 27.80 | 28.60 | 31.11 | 24.66 | 28.60 |
| Dailekh_AWS | 33.20 | 34.60 | 37.20 | 29.91 | 34.60 |
| Dhangadhi airport | 38.50 | 39.80 | 42.26 | 34.50 | 39.80 |
| Dhankuta | 29.70 | 30.50 | 31.76 | 27.16 | 30.50 |
| Dhunibesi | 33.00 | 33.50 | 35.50 | 30.02 | 33.50 |
| Dipayal (Doti) | 33.00 | 34.50 | 36.50 | 28.77 | 34.50 |
| Dumkauli | 36.80 | 37.80 | 39.20 | 33.46 | 37.80 |
| Gaur | 37.60 | 38.20 | 39.20 | 34.12 | 38.20 |
| Ghorai (Dang) | 34.80 | 36.00 | 38.16 | 31.00 | 36.00 |
| Gorkha Agromet | 33.22 | 34.00 | 35.50 | 30.49 | 34.00 |
| Hetaunda N.F.I. | 35.60 | 36.60 | 38.16 | 32.60 | 36.60 |




## About the Anticipatory Action (AA) tool

The toolkit for Anticipatory Action of Heat & Cold Waves in Nepal has been developed for the Department of Hydrology and Meteorology under the support of START Network, CARE Nepal and Institute of Himalayan Risk Reduction (IHRR).