

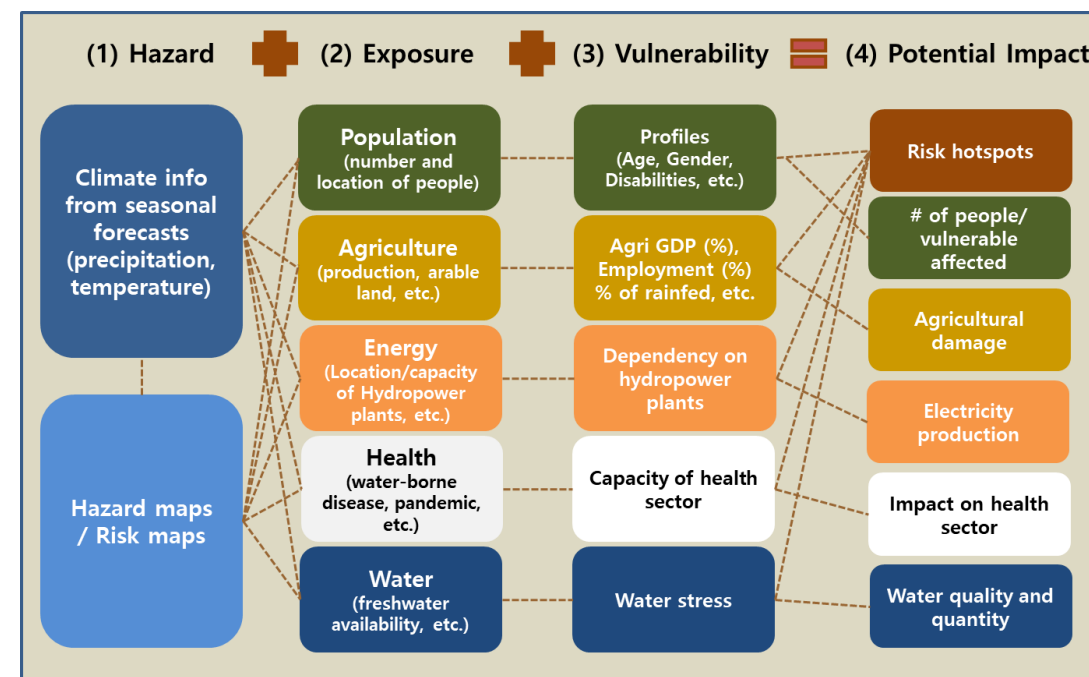
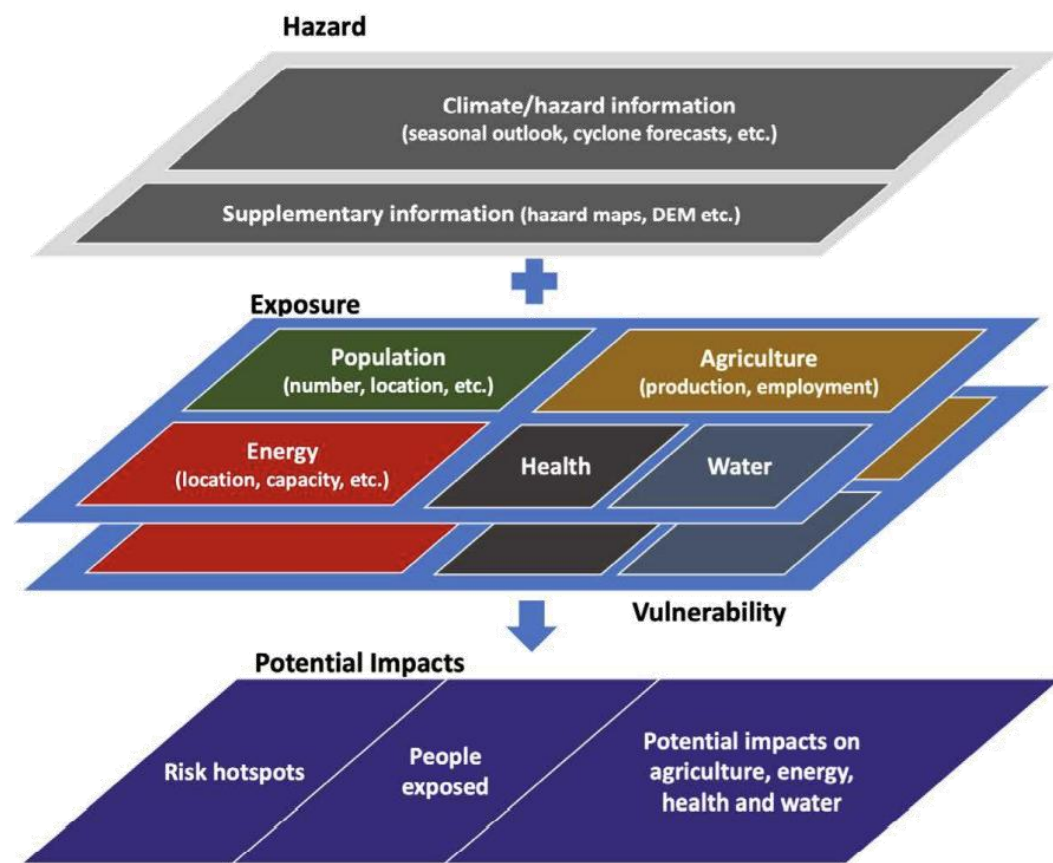
TPCF-2

Impact outlook for Third Pole region

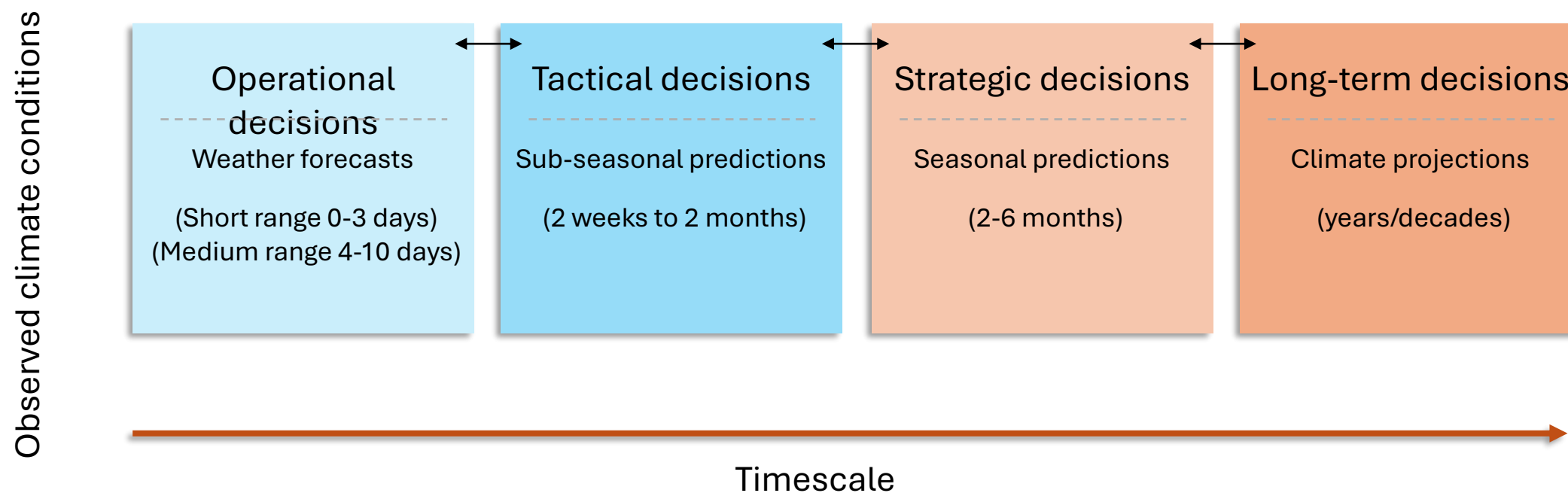
UN ESCAP

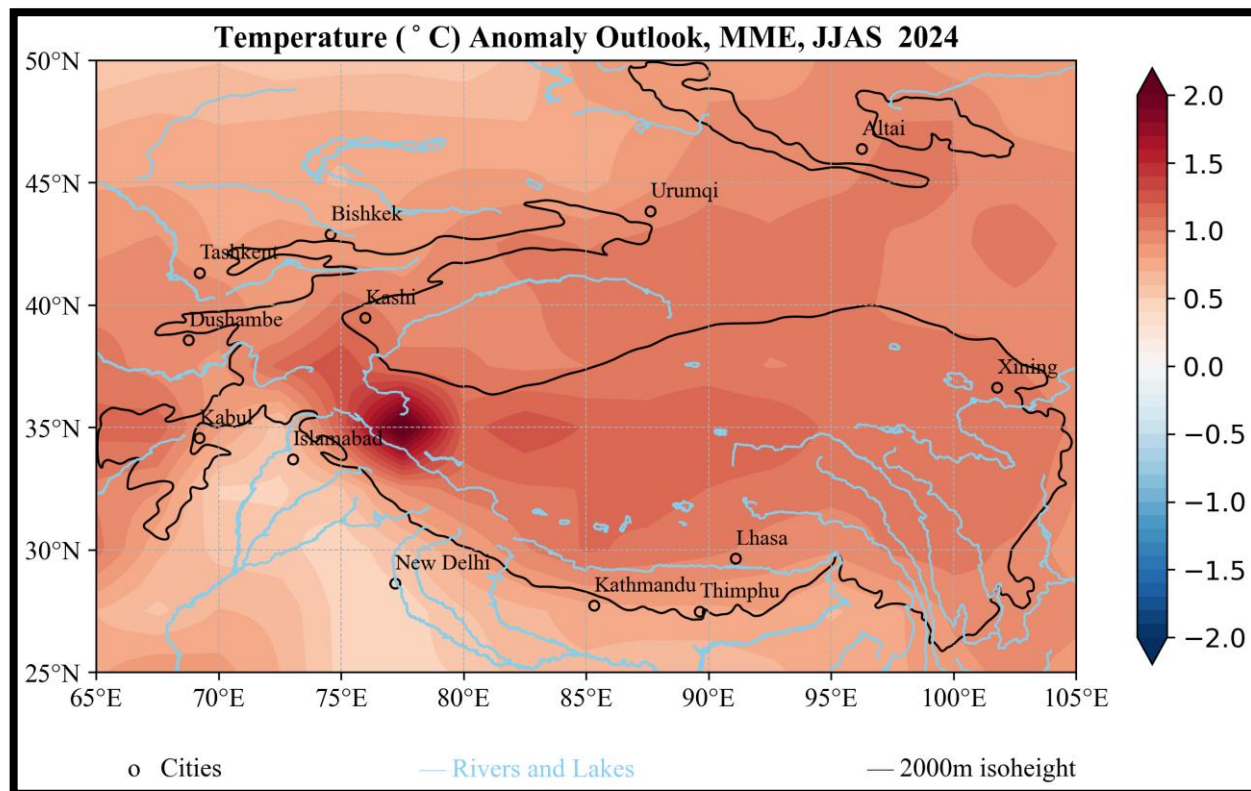
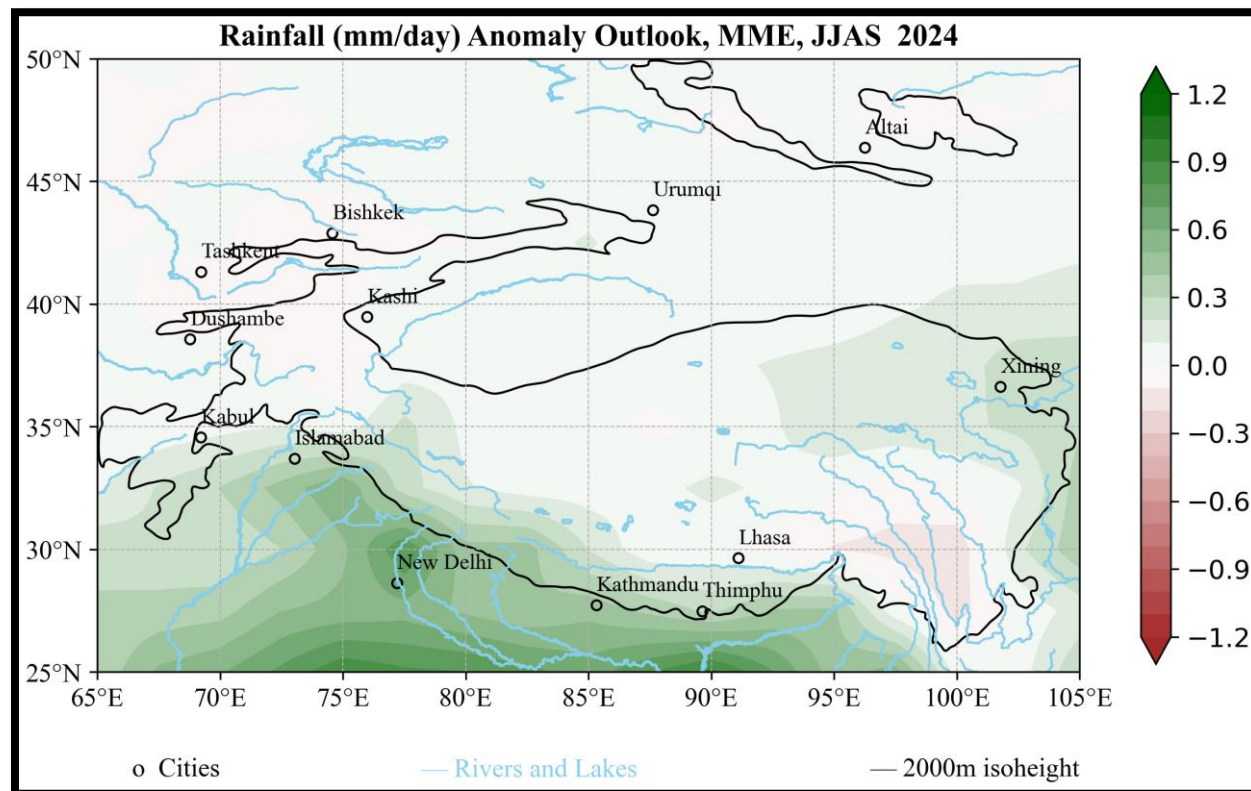
IDD Disaster Risk Reduction Section

Impact-based forecasting approach



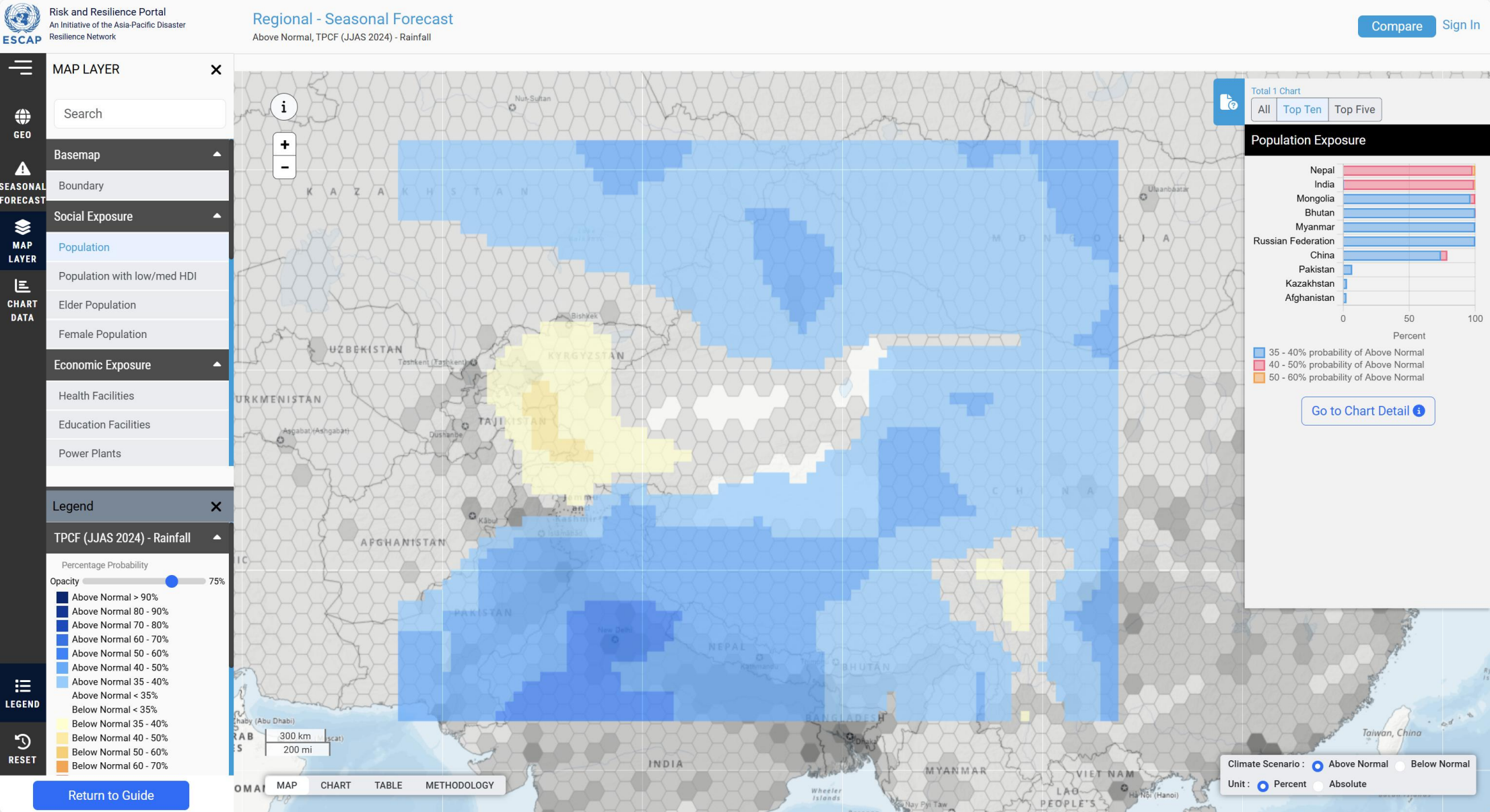
Facilitate decision-making at different time scale





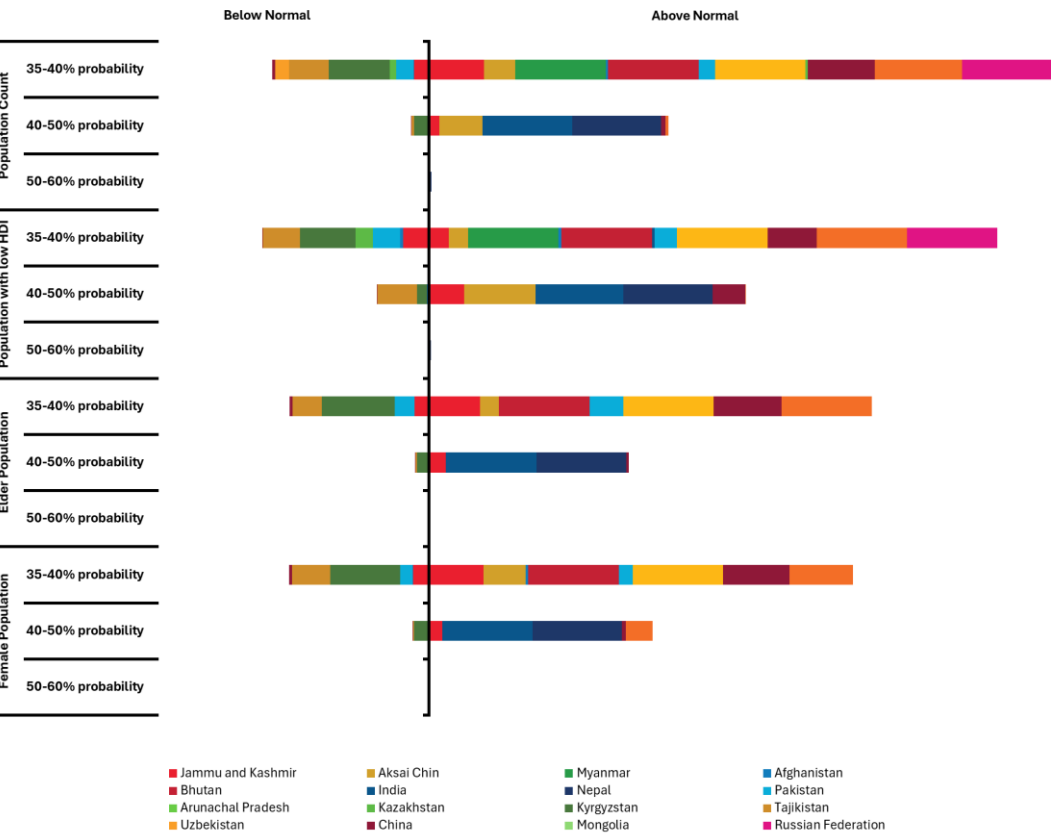
Impact outlook for Third Pole region - JJAS 2024

Social Vulnerability

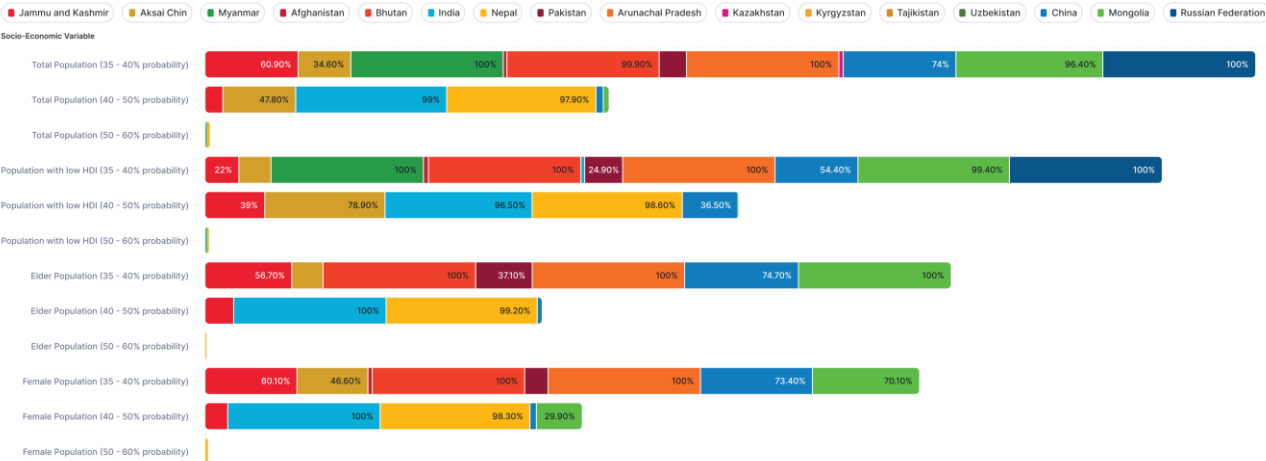


Social Vulnerability

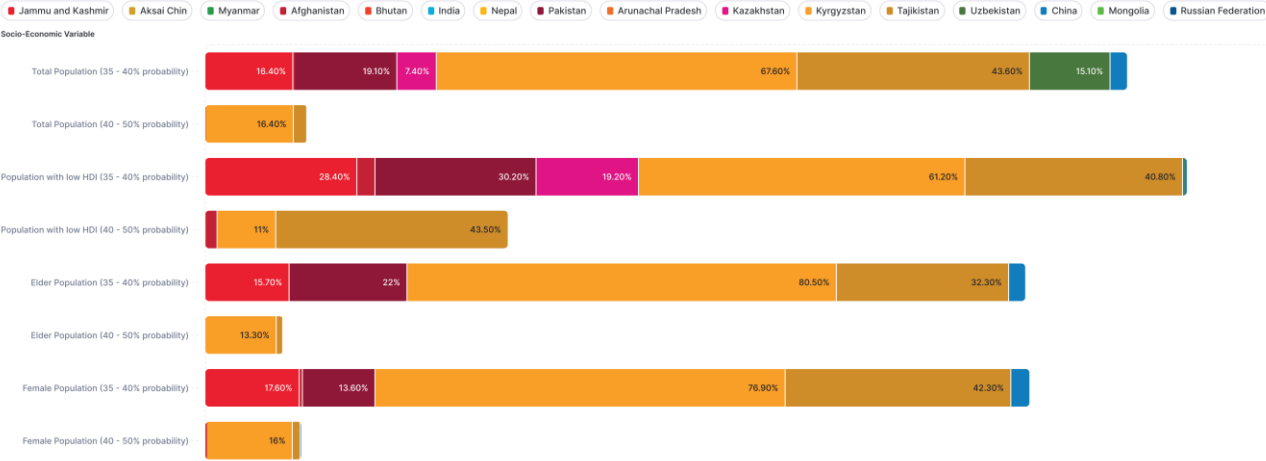
Impact Outlook : Social Vulnerability (Seasonal Rainfall - JJAS 2024)



Social Vulnerability
Above Normal Precipitation (JJAS 2024)

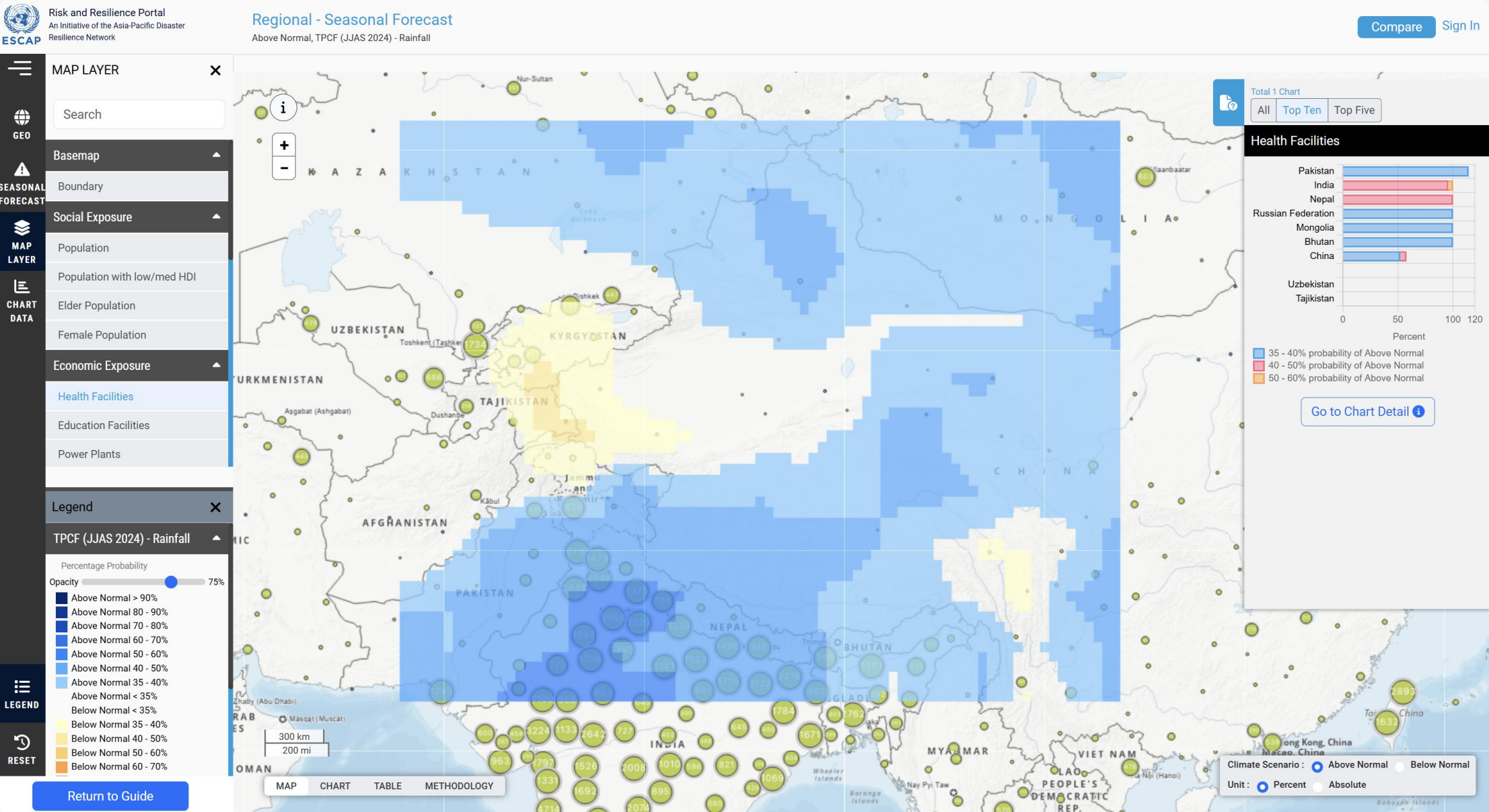


Social Vulnerability
Below Normal Precipitation (JJAS 2024)



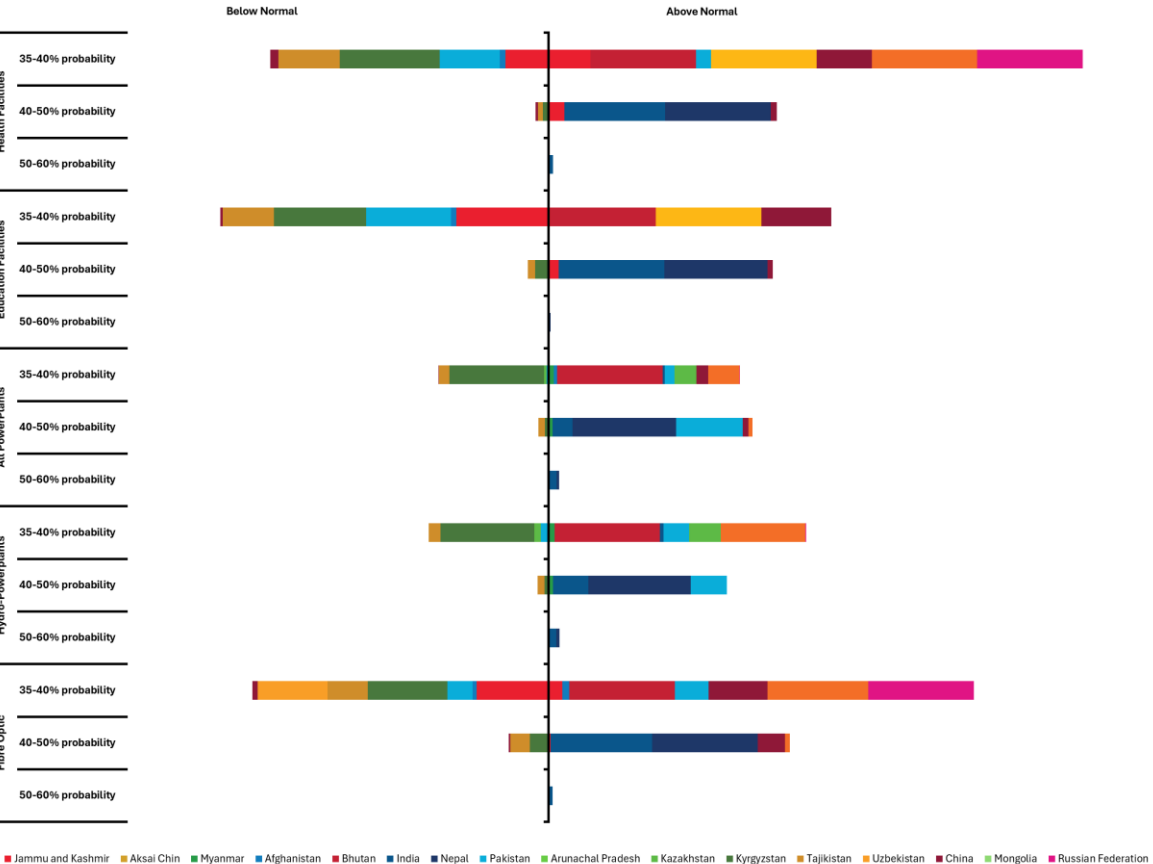
Note: The percentages reflect exposure related to the specific sections within the Third Pole region, not the entire nation. Thus, 100% means full coverage of the region involved, not the entire country.

Critical Infrastructure Exposure

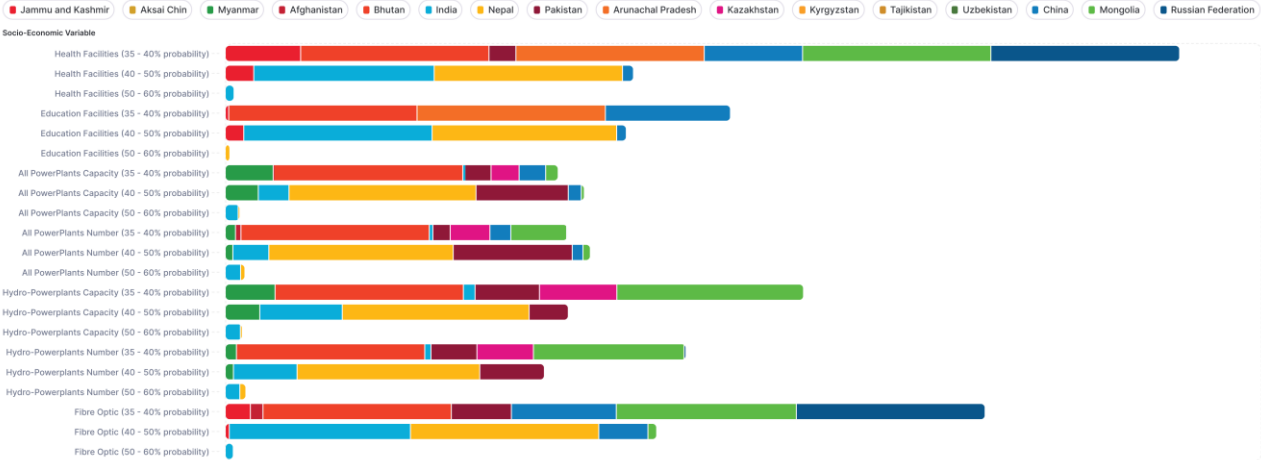


Critical Infrastructure Exposure

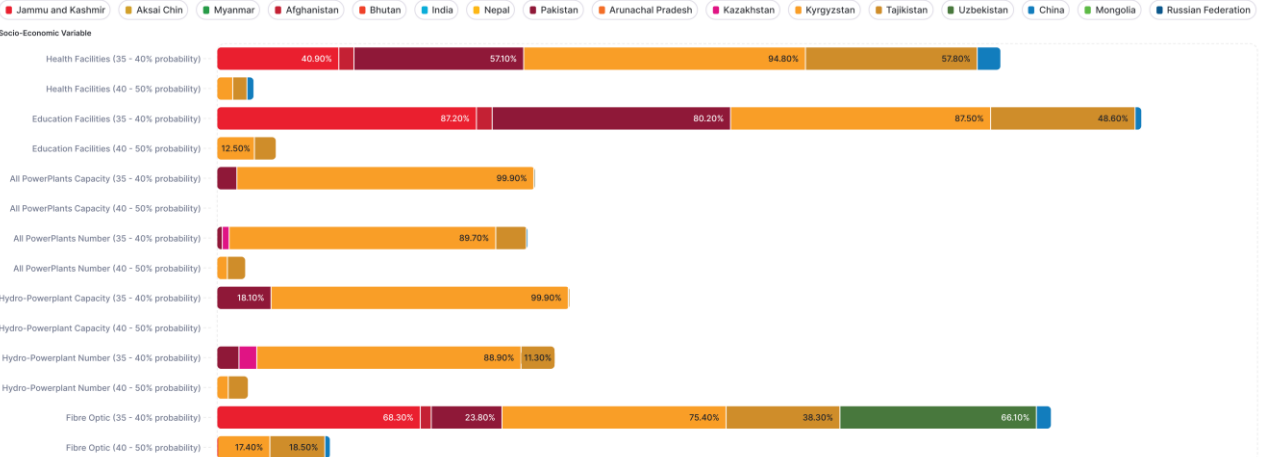
Impact Outlook : Critical Infrastructure (Seasonal Rainfall - JJAS 2024)



Critical Infrastructure Exposure
Above Normal Precipitation (JJAS 2024)

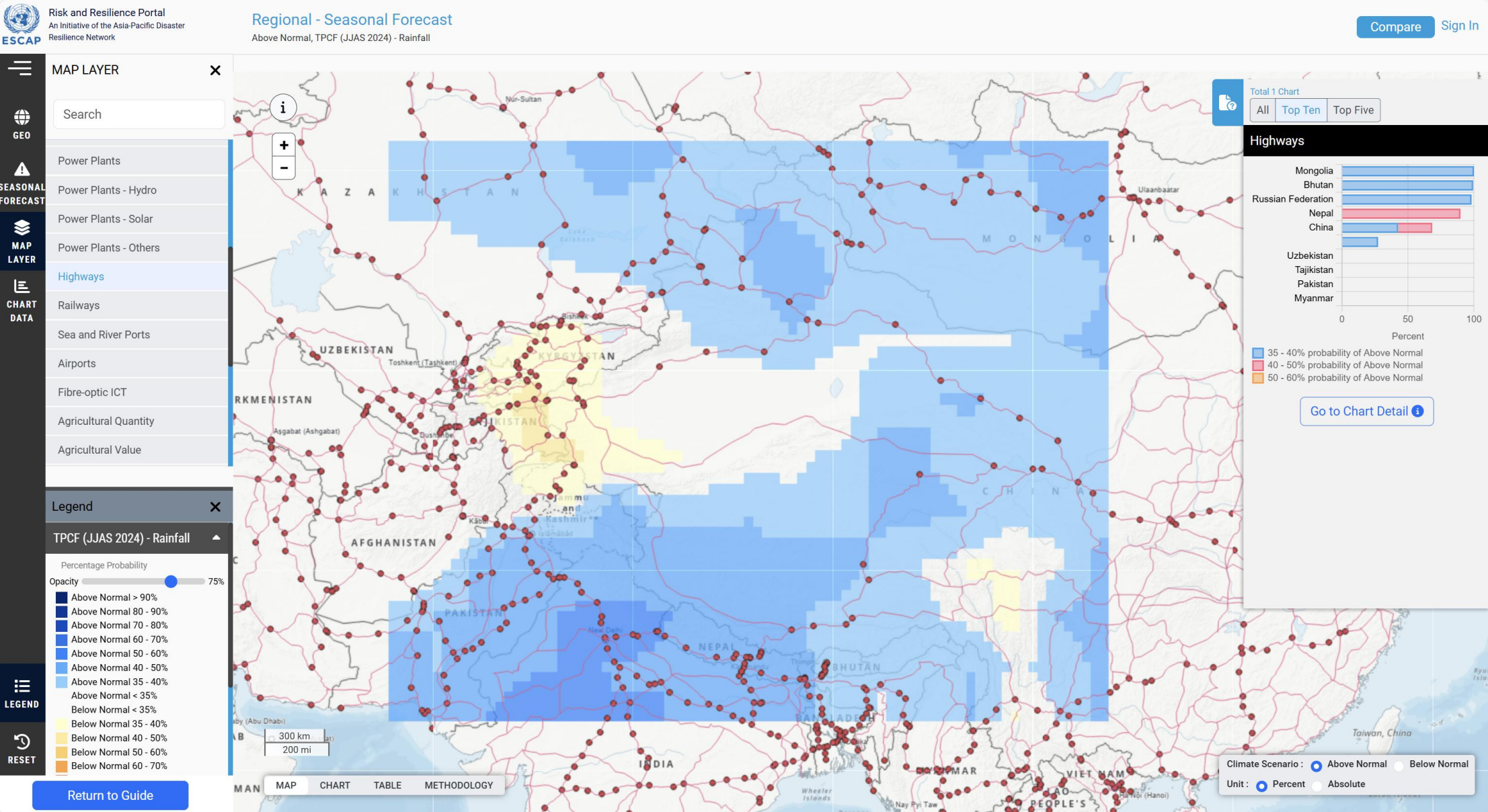


Critical Infrastructure Exposure
Below Normal Precipitation (JJAS 2024)



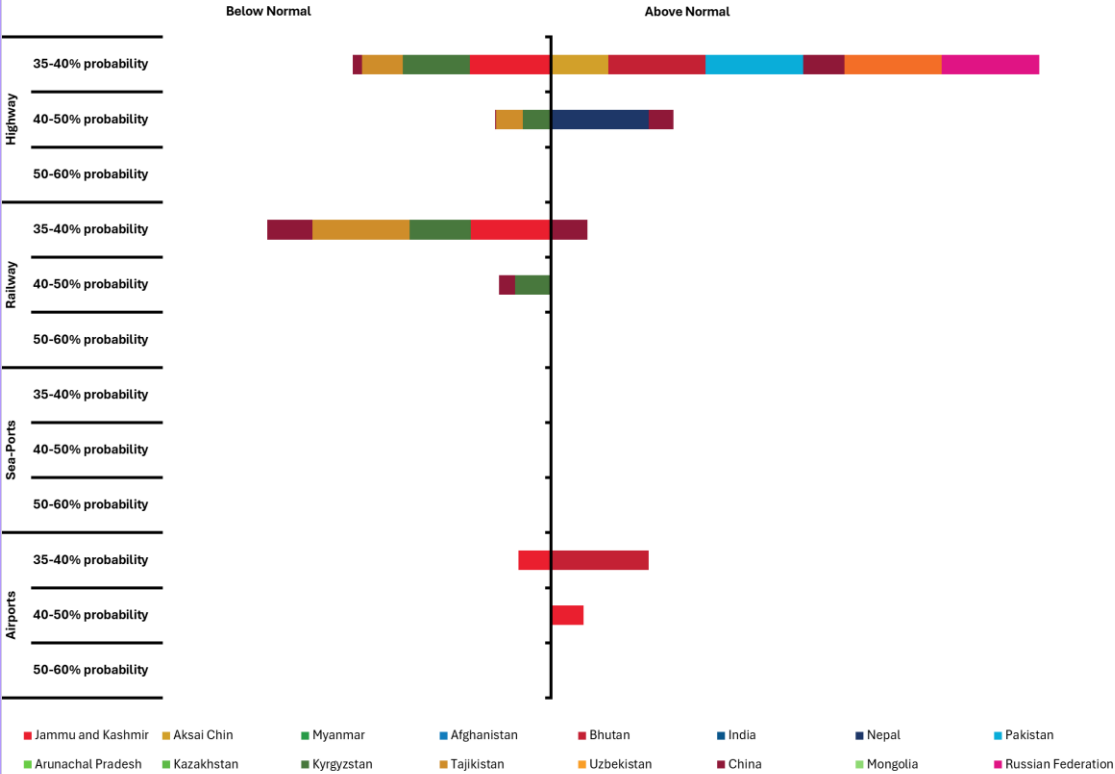
Note: The percentages reflect exposure related to the specific sections within the Third Pole region, not the entire nation. Thus, 100% means full coverage of the region involved, not the entire country.

Transport Sector Exposure

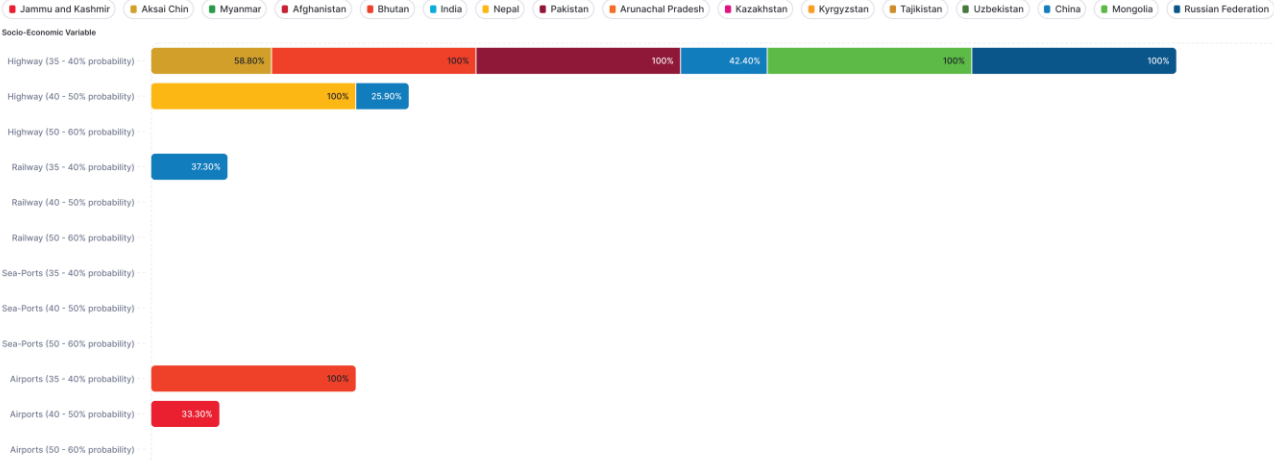


Transport Sector Exposure

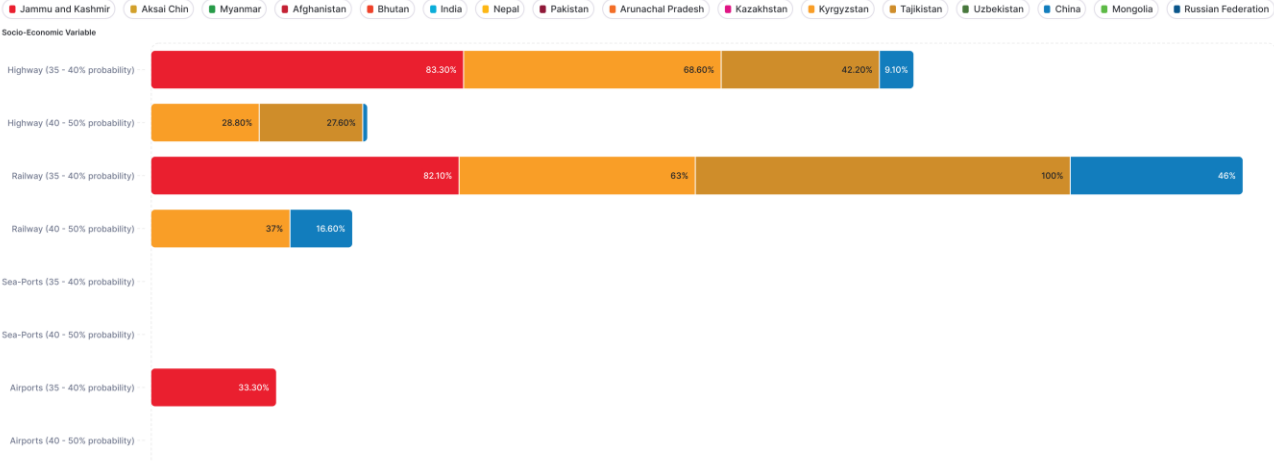
Impact Outlook : Transport Sector Exposure (Seasonal Rainfall - JJAS 2024)



Transport Sector Exposure
Above Normal Precipitation (JJAS 2024)

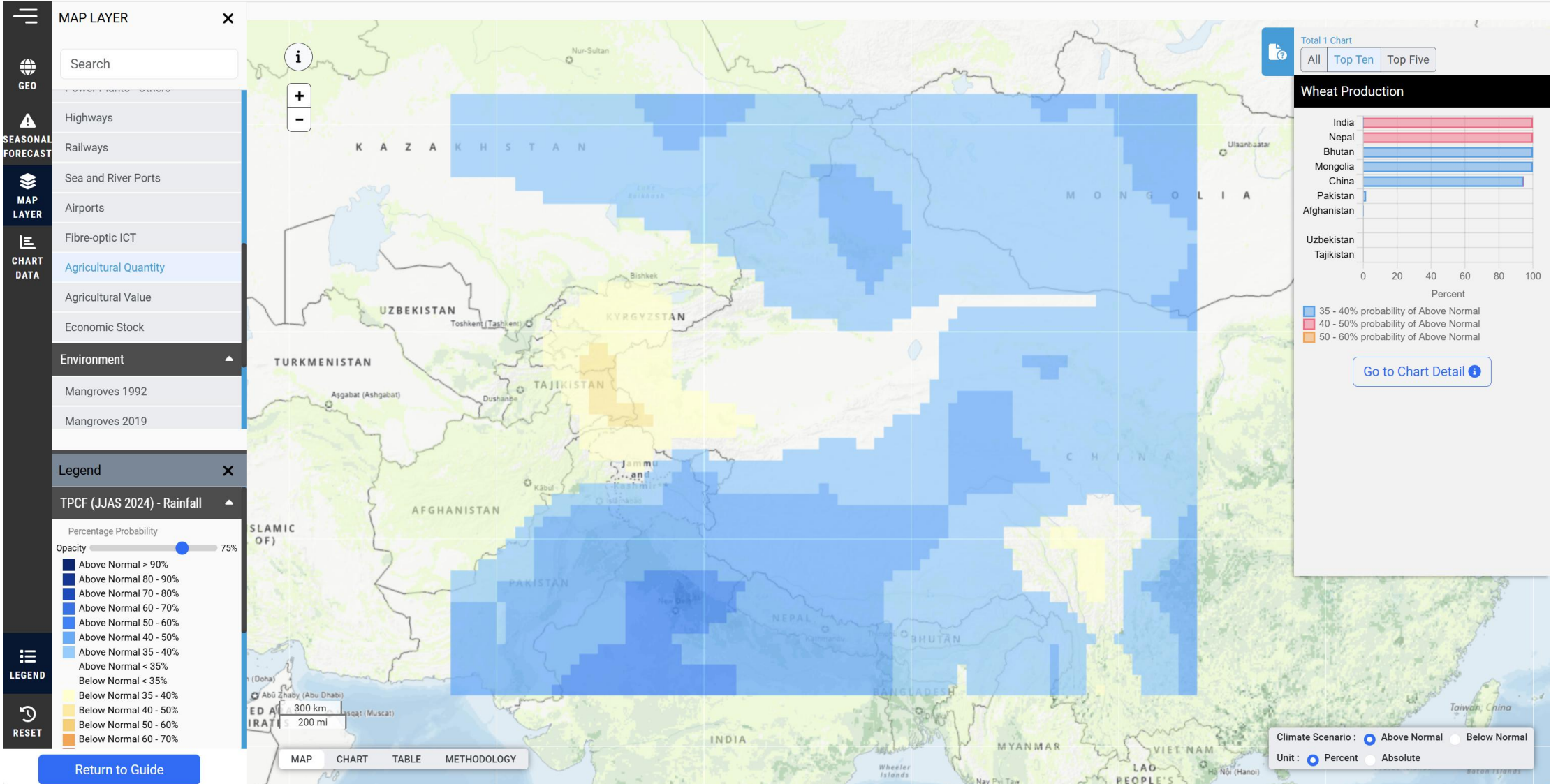


Transport Sector Exposure
Below Normal Precipitation (JJAS 2024)



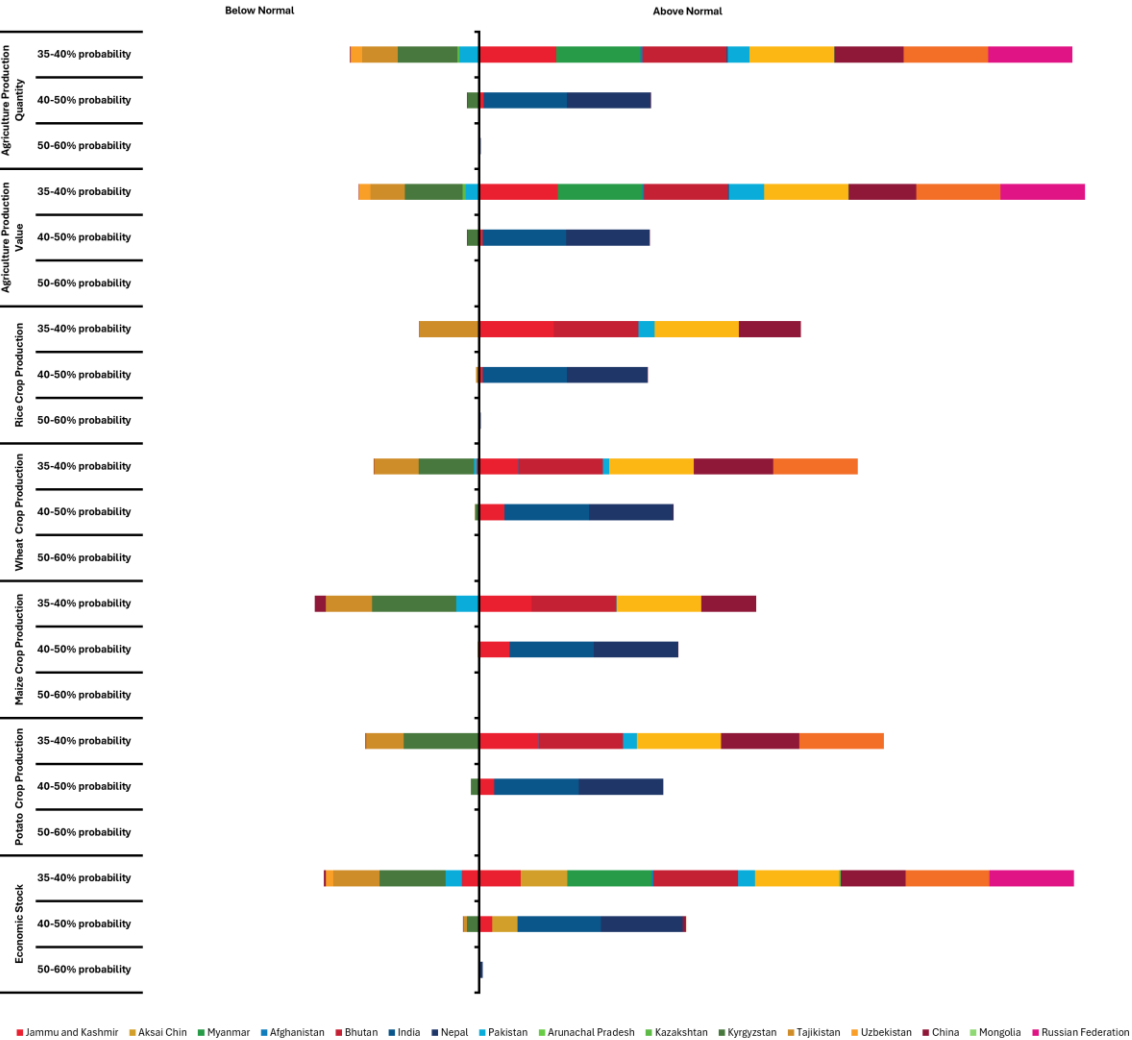
Note: The percentages reflect exposure related to the specific sections within the Third Pole region, not the entire nation. Thus, 100% means full coverage of the region involved, not the entire country.

Agriculture Sector Exposure

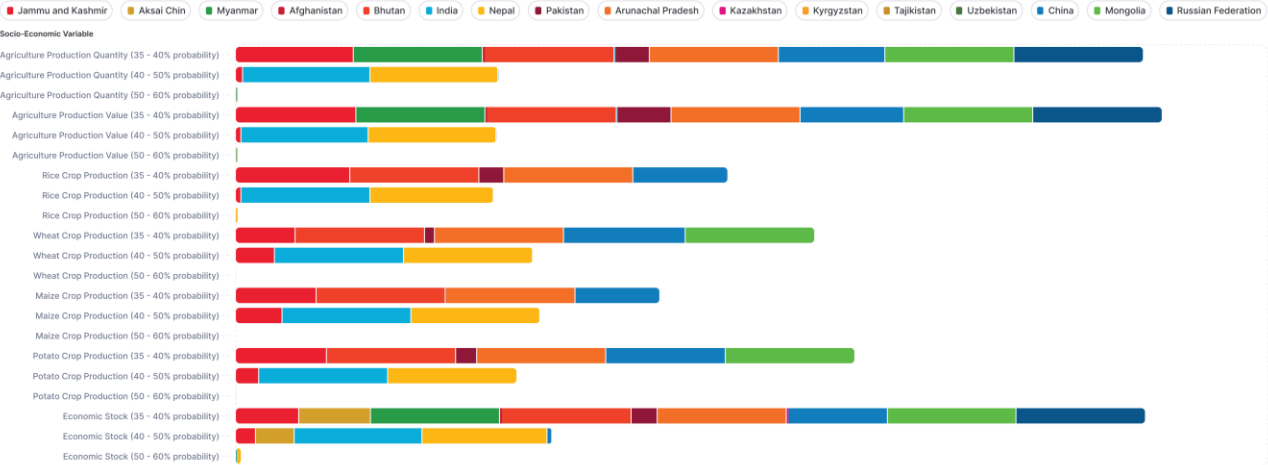


Agriculture Sector Exposure

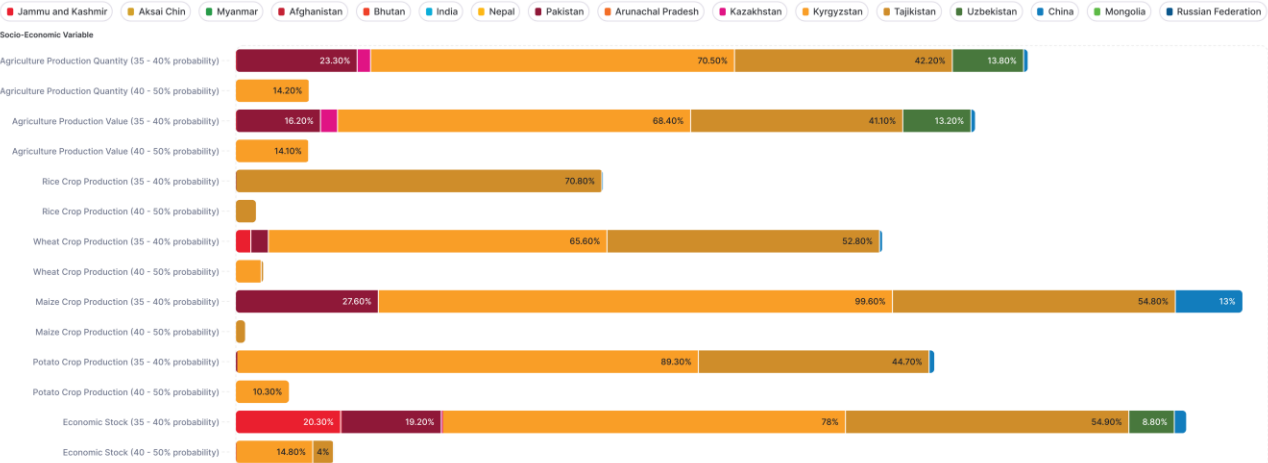
Impact Outlook : Critical Infrastructure (Seasonal Rainfall - JJAS 2024)



Agriculture Sector Exposure
Above Normal Precipitation (JJAS 2024)



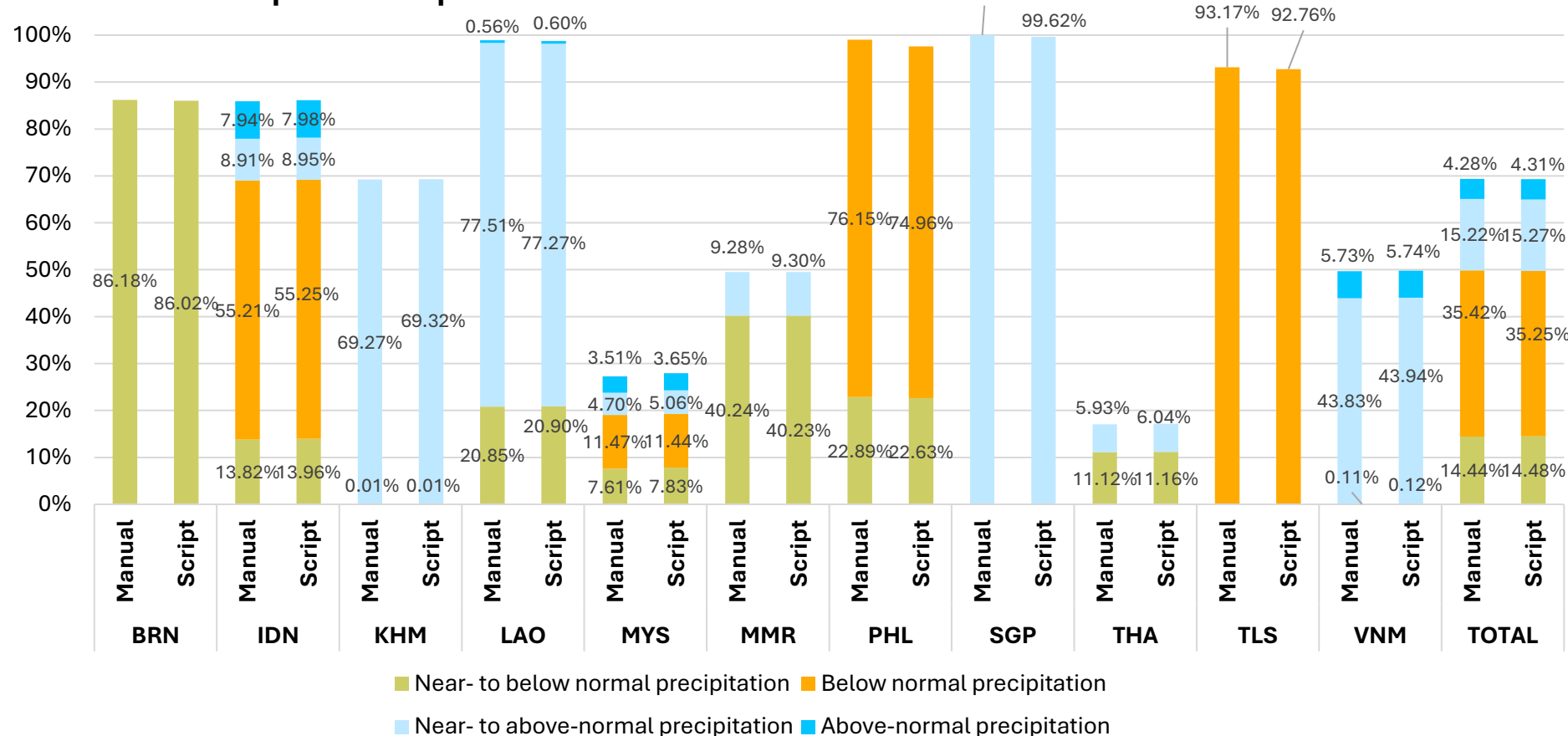
Agriculture Sector Exposure
Below Normal Precipitation (JJAS 2024)



Note: The percentages reflect exposure related to the specific sections within the Third Pole region, not the entire nation. Thus, 100% means full coverage of the region involved, not the entire country.

Verification of the IBF percent exposure from automation tool with the manual calculations on QGIS

Population exposure obtained from manual calculation and automation tool



Percent difference of population exposure obtained from automation tool and manual calculations for each precipitation category in each country,

- ranges from **-1.45% to 0.18%** for the **below-normal precipitation**.
- ranges from **0.38% to 0.5%** in each country for the **above-normal precipitation**.

Result Verification with On-Ground Results

Source: OCHA

Link: [Myanmar: Flood Situation Report, 16 September 2024 | OCHA](#)



OCHA SEARCH WHERE WE WORK WHAT WE DO WHO WE ARE OUR PRIORITIES LATEST

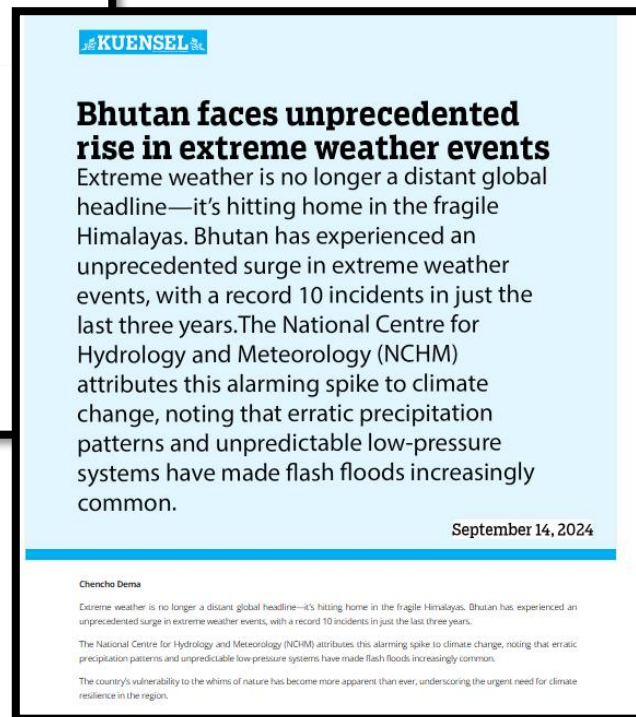
HOME / LATEST / PUBLICATIONS

Myanmar: Flood Situation Report, 16 September 2024

This update is based on information from humanitarian partners and available media reports as of 16 September. The situation is fluid, and estimated figures are subject to change.

Highlights

- Heavy rains from Typhoon Yagi's remnants have resulted in significant flooding and damage in various parts of Myanmar. The flood impacted 59 townships in nine regions and states, including the state's capital, Nay Pyi Taw, Bago, Kayah, Kayin, Magway, Mandalay, Mon, and eastern and southern Shan.
- While data verification is challenging, estimated 631,000 people might have been affected by flooding across the country. Multiple sources indicate that hundreds of people have died, with many more missing.
- So far, most areas remain submerged, and evacuation and emergency assistance are ongoing. Despite challenges, humanitarian partners have started reporting on the impact and planning for response wherever possible.



KUENSEL

Bhutan faces unprecedented rise in extreme weather events

Extreme weather is no longer a distant global headline—it's hitting home in the fragile Himalayas. Bhutan has experienced an unprecedented surge in extreme weather events, with a record 10 incidents in just the last three years. The National Centre for Hydrology and Meteorology (NCHM) attributes this alarming spike to climate change, noting that erratic precipitation patterns and unpredictable low-pressure systems have made flash floods increasingly common.

September 14, 2024

Chencho Dema

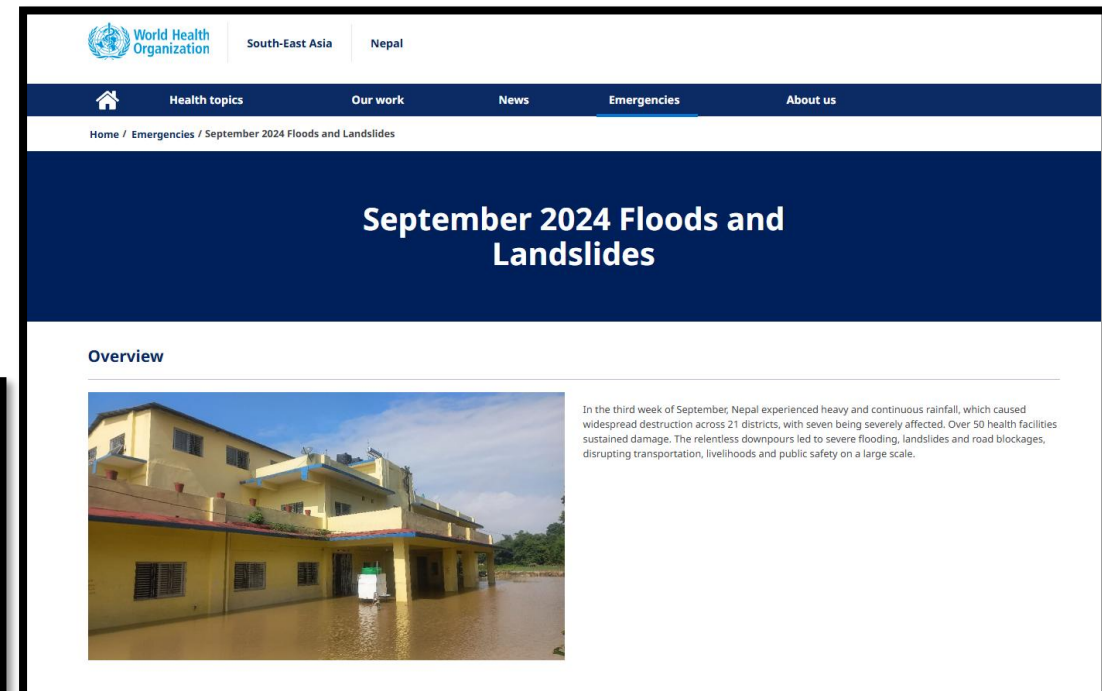
Extreme weather is no longer a distant global headline—it's hitting home in the fragile Himalayas. Bhutan has experienced an unprecedented surge in extreme weather events, with a record 10 incidents in just the last three years.

The National Centre for Hydrology and Meteorology (NCHM) attributes this alarming spike to climate change, noting that erratic precipitation patterns and unpredictable low-pressure systems have made flash floods increasingly common.

The country's vulnerability to the whims of nature has become more apparent than ever, underscoring the urgent need for climate resilience in the region.

Source: KUENSEL

Link: [Bhutan faces unprecedented rise in extreme weather events | Kuensel Online](#)




World Health Organization South-East Asia Nepal

Home / Emergencies / September 2024 Floods and Landslides

September 2024 Floods and Landslides

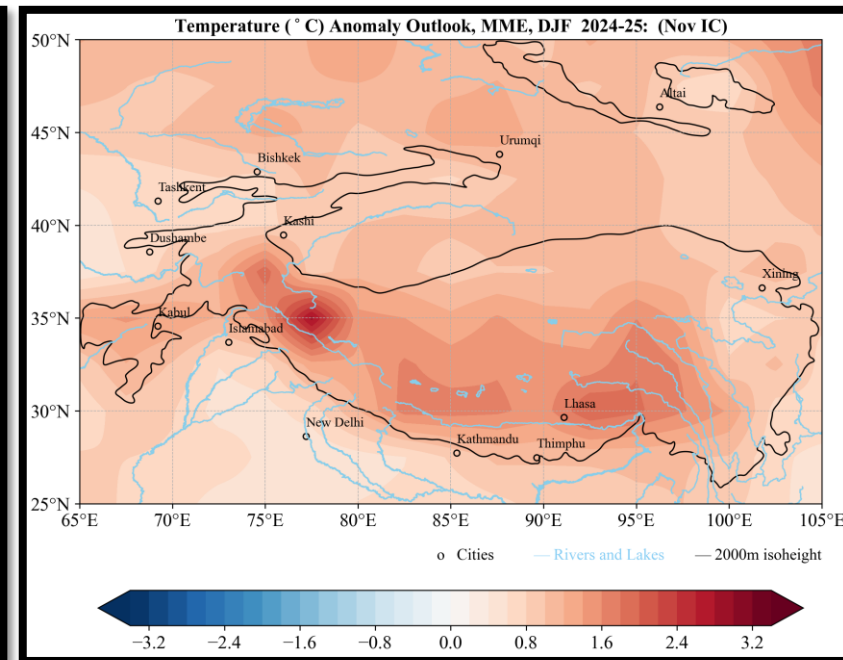
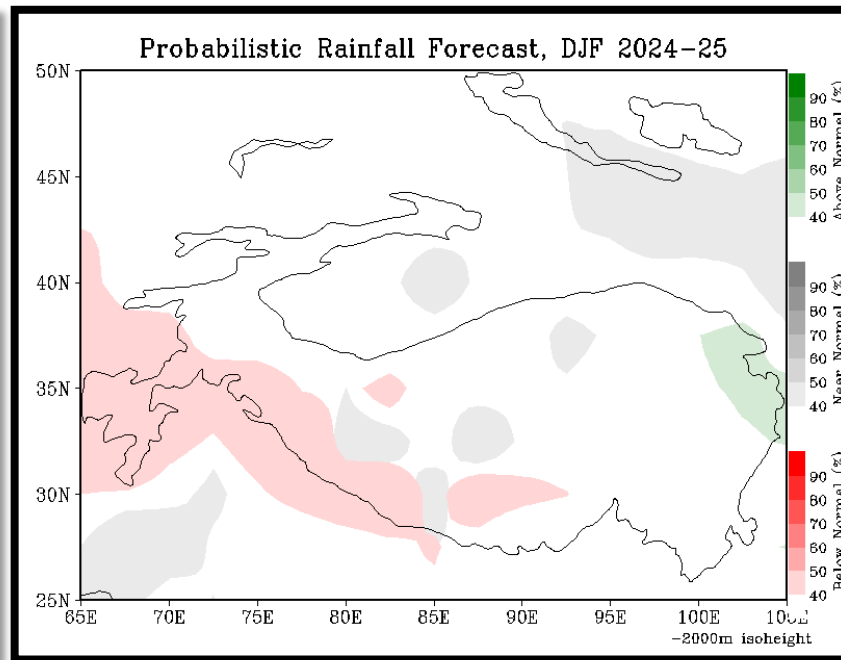
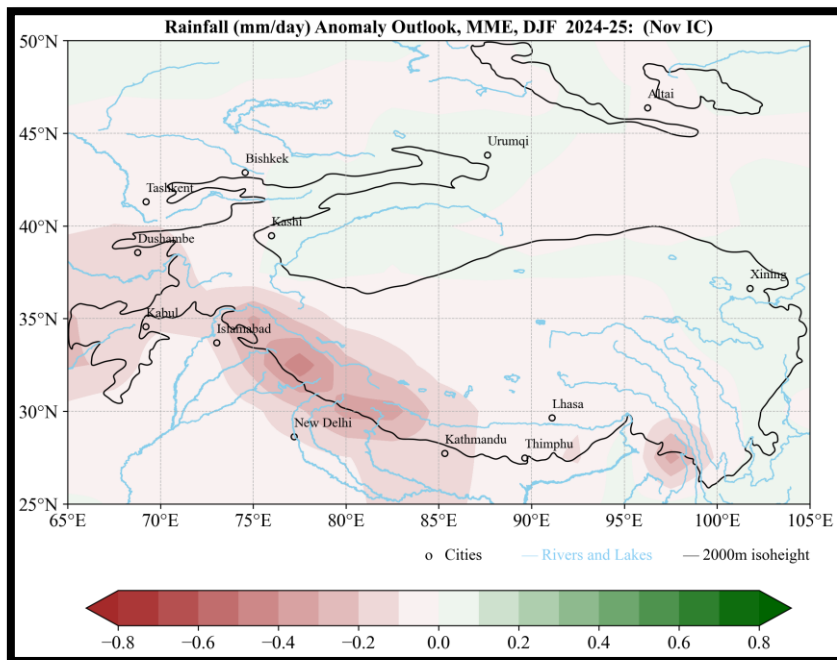
Overview



In the third week of September, Nepal experienced heavy and continuous rainfall, which caused widespread destruction across 21 districts, with seven being severely affected. Over 50 health facilities sustained damage. The relentless downpours led to severe flooding, landslides and road blockages, disrupting transportation, livelihoods and public safety on a large scale.

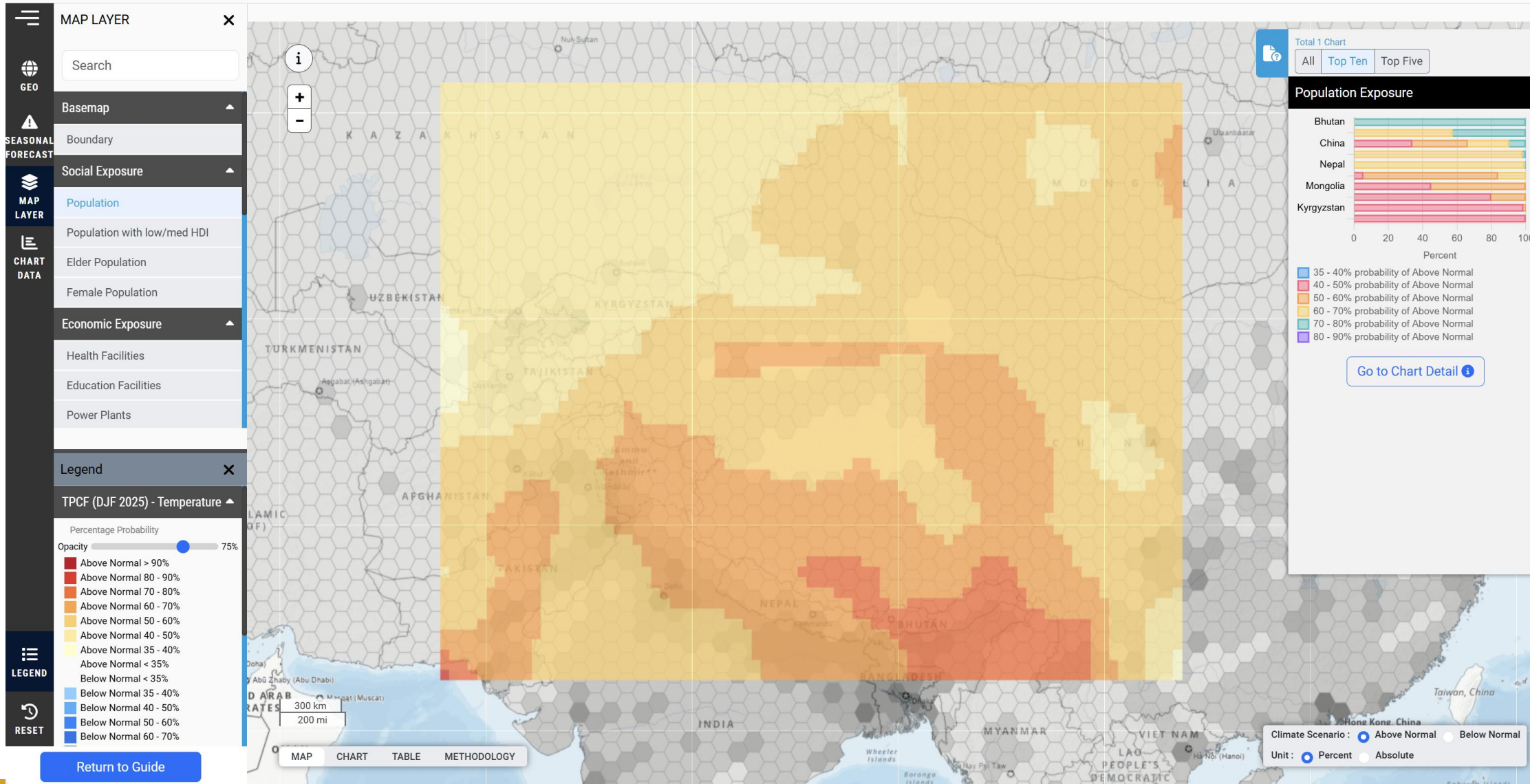
Source: WHO

Link: [September 2024 Floods and Landslides](#)



Impact outlook for Third Pole region - DJF 2024-25

Social Vulnerability



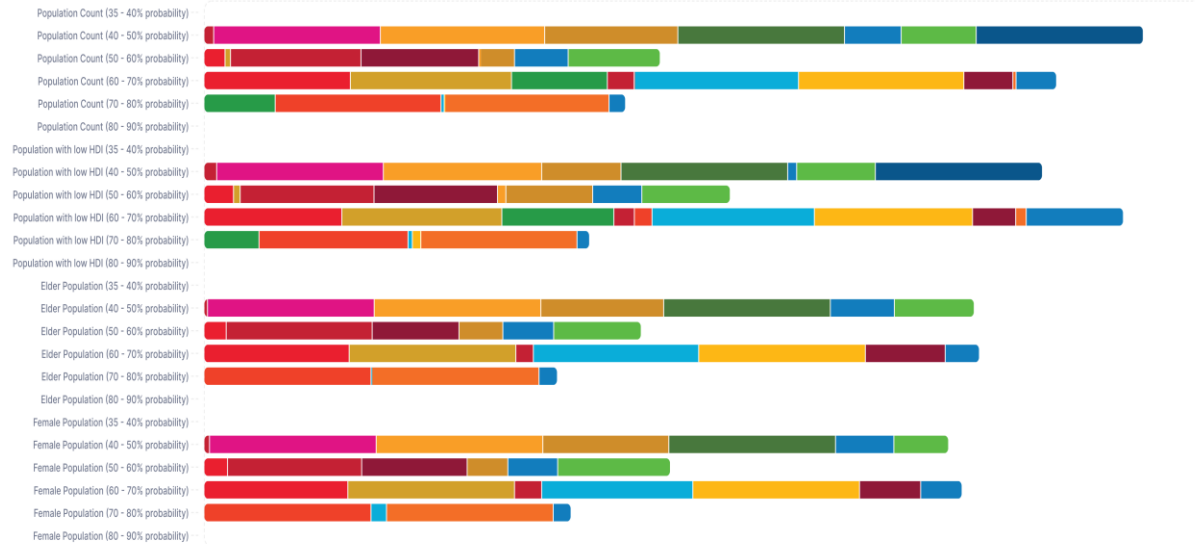
Social Vulnerability

Social Vulnerability

Above Normal Temperature (DJF 2025)

Jammu and Kashmir Aksai Chin Myanmar Afghanistan Bhutan India Nepal Pakistan Arunachal Pradesh Kazakhstan Kyrgyzstan Tajikistan Uzbekistan China Mongolia Russian Federation

Socio-Economic Variable

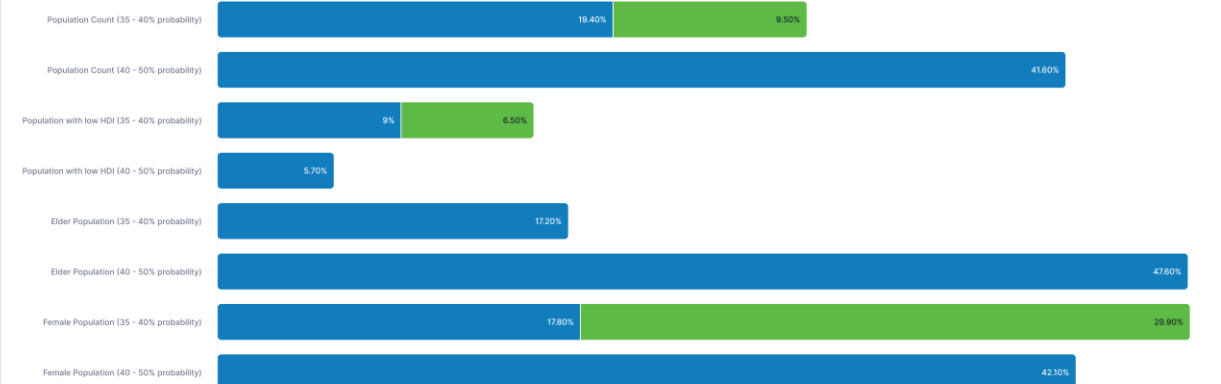


Social Vulnerability

Above Normal Rainfall (DJF 2025)

Jammu and Kashmir Aksai Chin Myanmar Afghanistan Bhutan India Nepal Pakistan Arunachal Pradesh Kazakhstan Kyrgyzstan Tajikistan Uzbekistan China Mongolia Russian Federation

Socio-Economic Variable

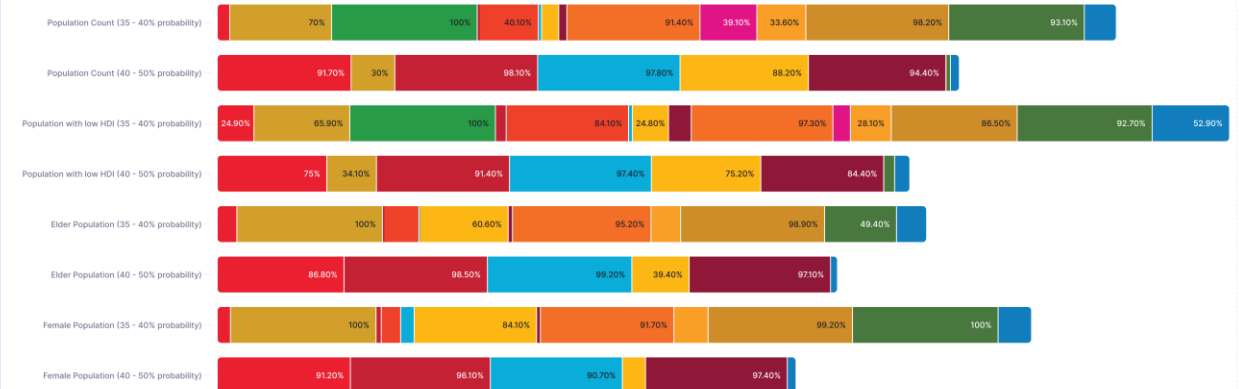


Social Vulnerability

Below Normal Rainfall (DJF 2025)

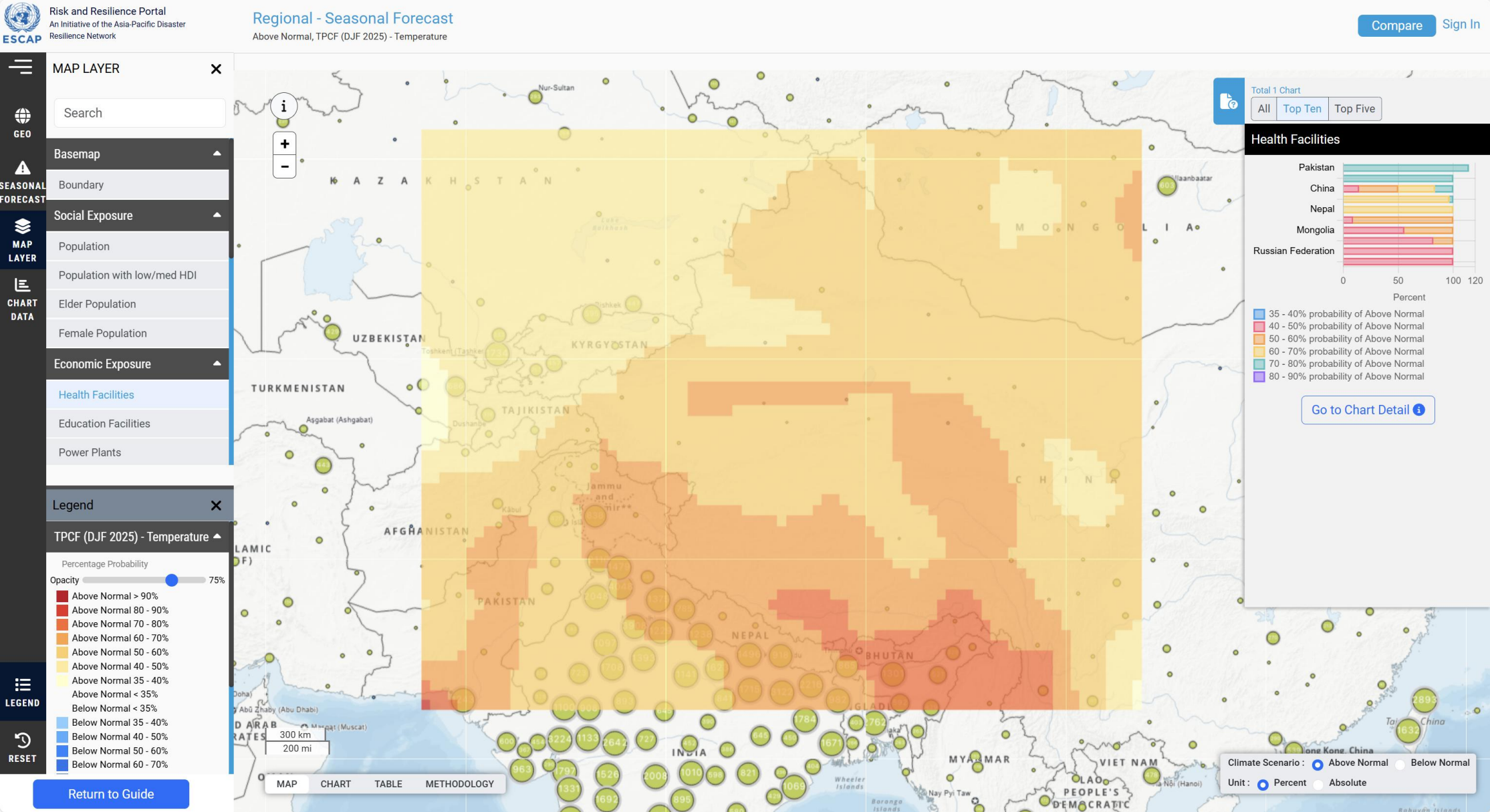
Jammu and Kashmir Aksai Chin Myanmar Afghanistan Bhutan India Nepal Pakistan Arunachal Pradesh Kazakhstan Kyrgyzstan Tajikistan Uzbekistan China Mongolia Russian Federation

Socio-Economic Variable



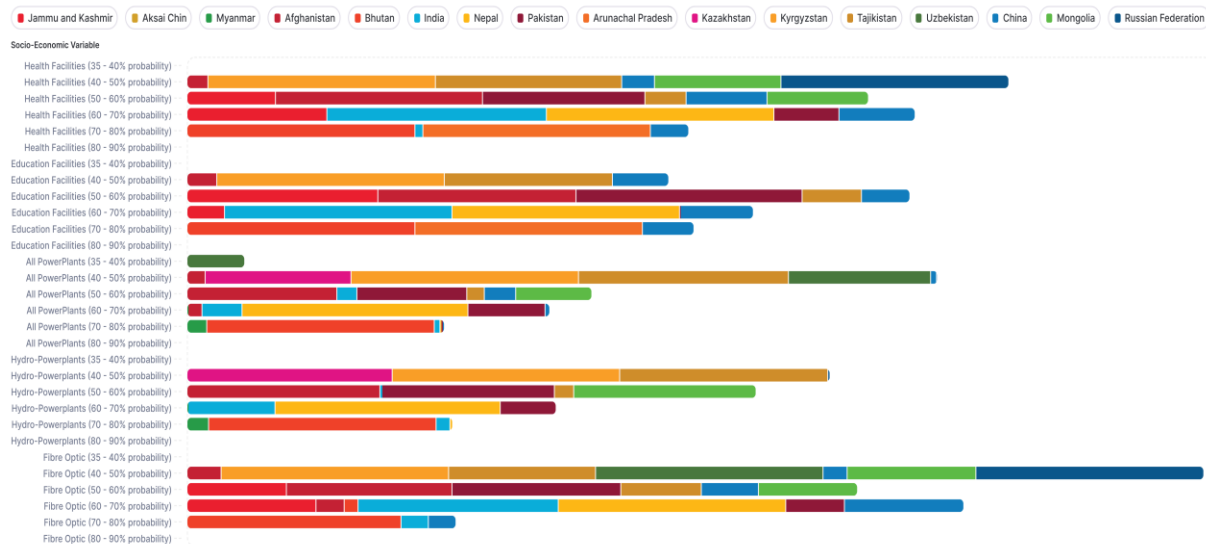
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Critical Infrastructure Exposure

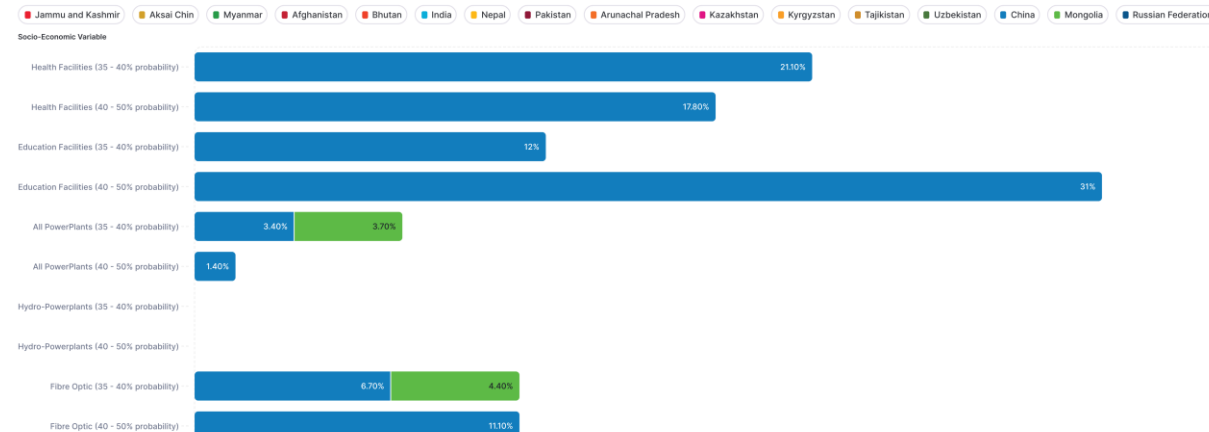


Critical Infrastructure Exposure

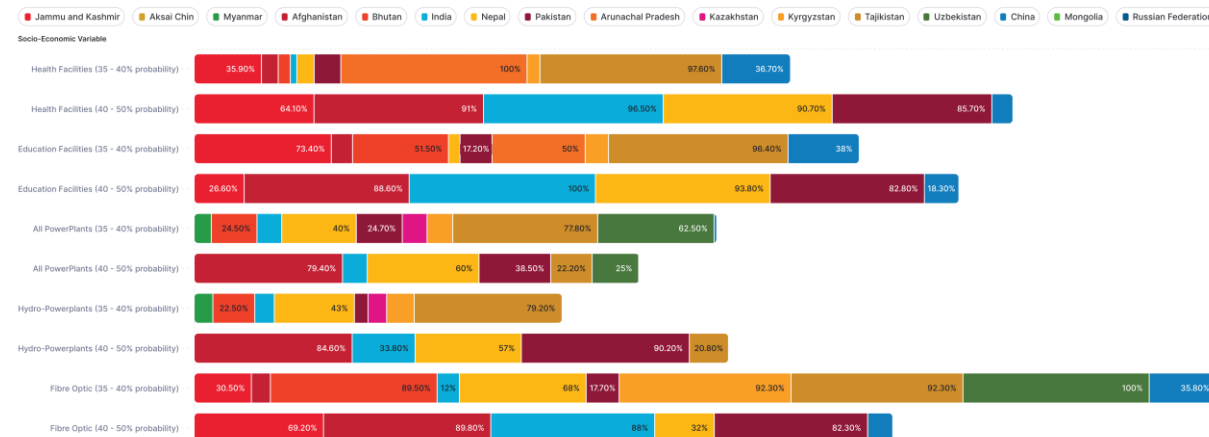
Critical Infrastructure Exposure Above Normal Temperature (DJF 2025)



Critical Infrastructure Exposure Above Normal Rainfall (DJF 2025)

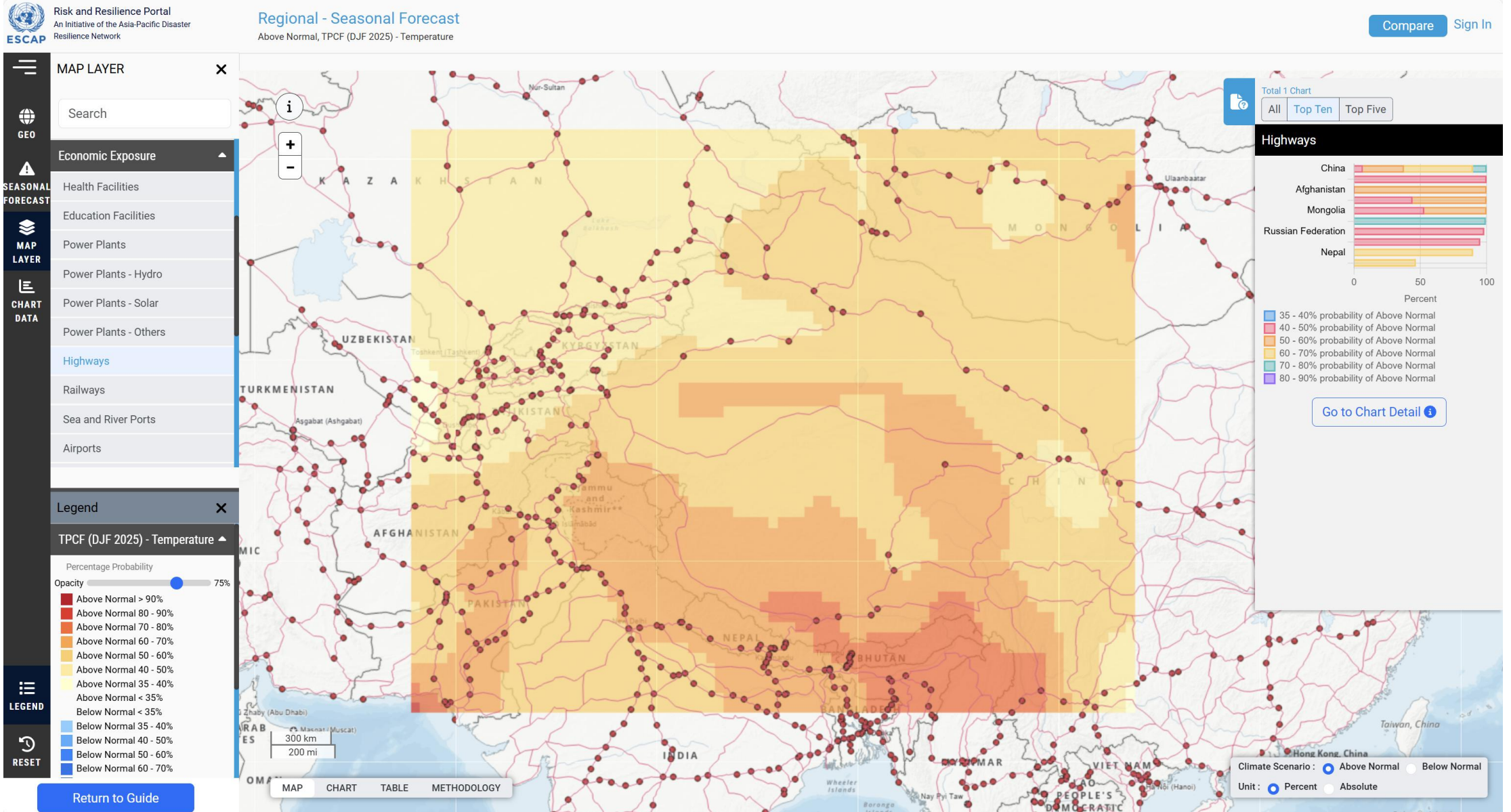


Critical Infrastructure Exposure Below Normal Rainfall (DJF 2025)



Note: The percentages reflect exposure related to the specific sections within the Third Pole region, not the entire nation. Thus, 100% means full coverage of the region involved, not the entire country.

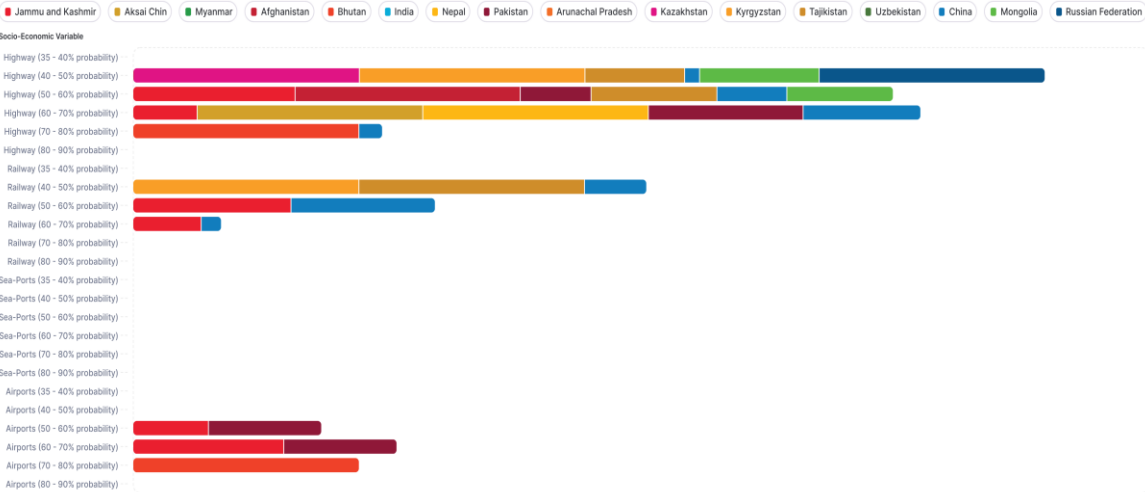
Transport Sector Exposure



Transport Sector Exposure

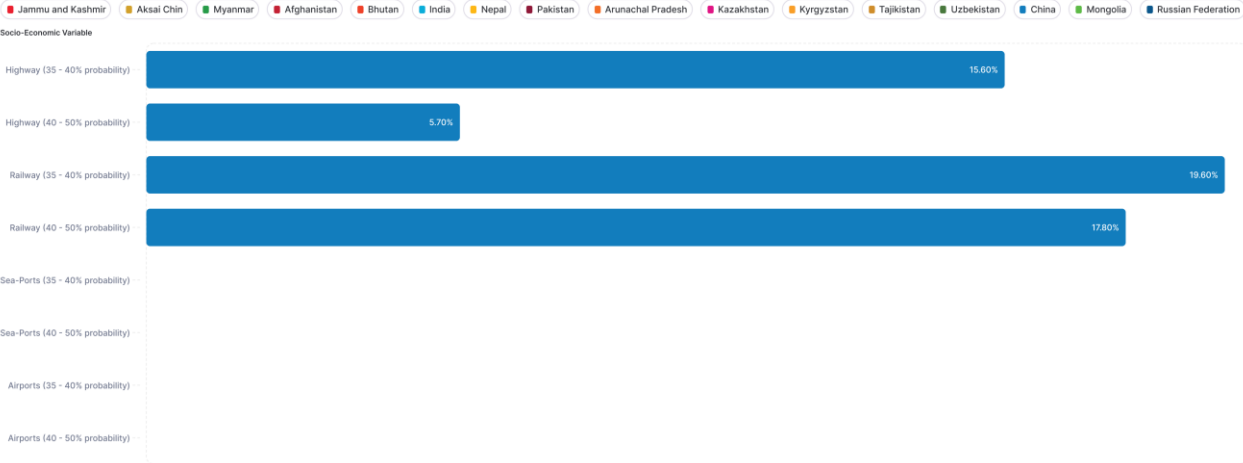
Transport Sector Exposure

Above Normal Temperature (DJF 2025)



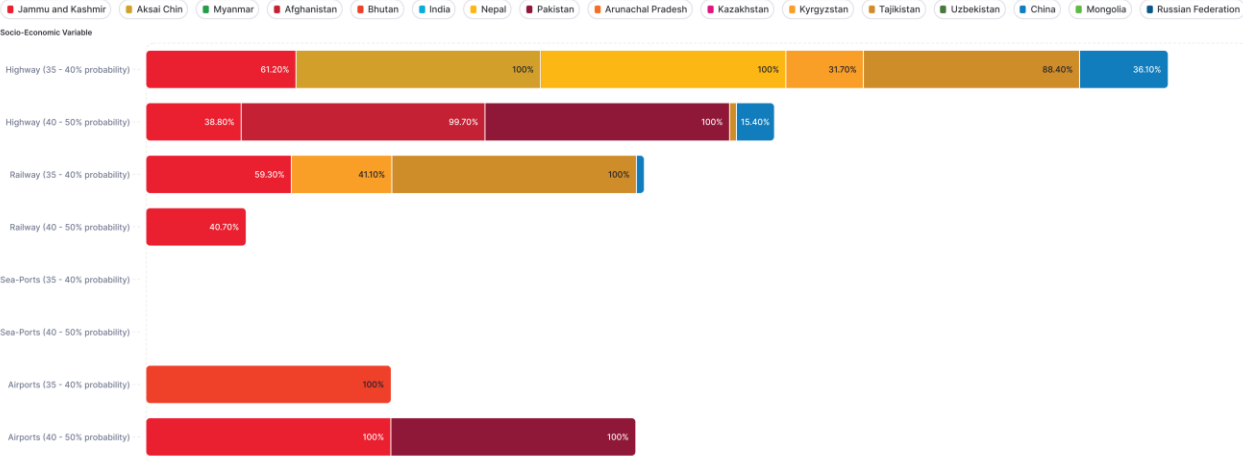
Transport Sector Exposure

Above Normal Rainfall (DJF 2025)



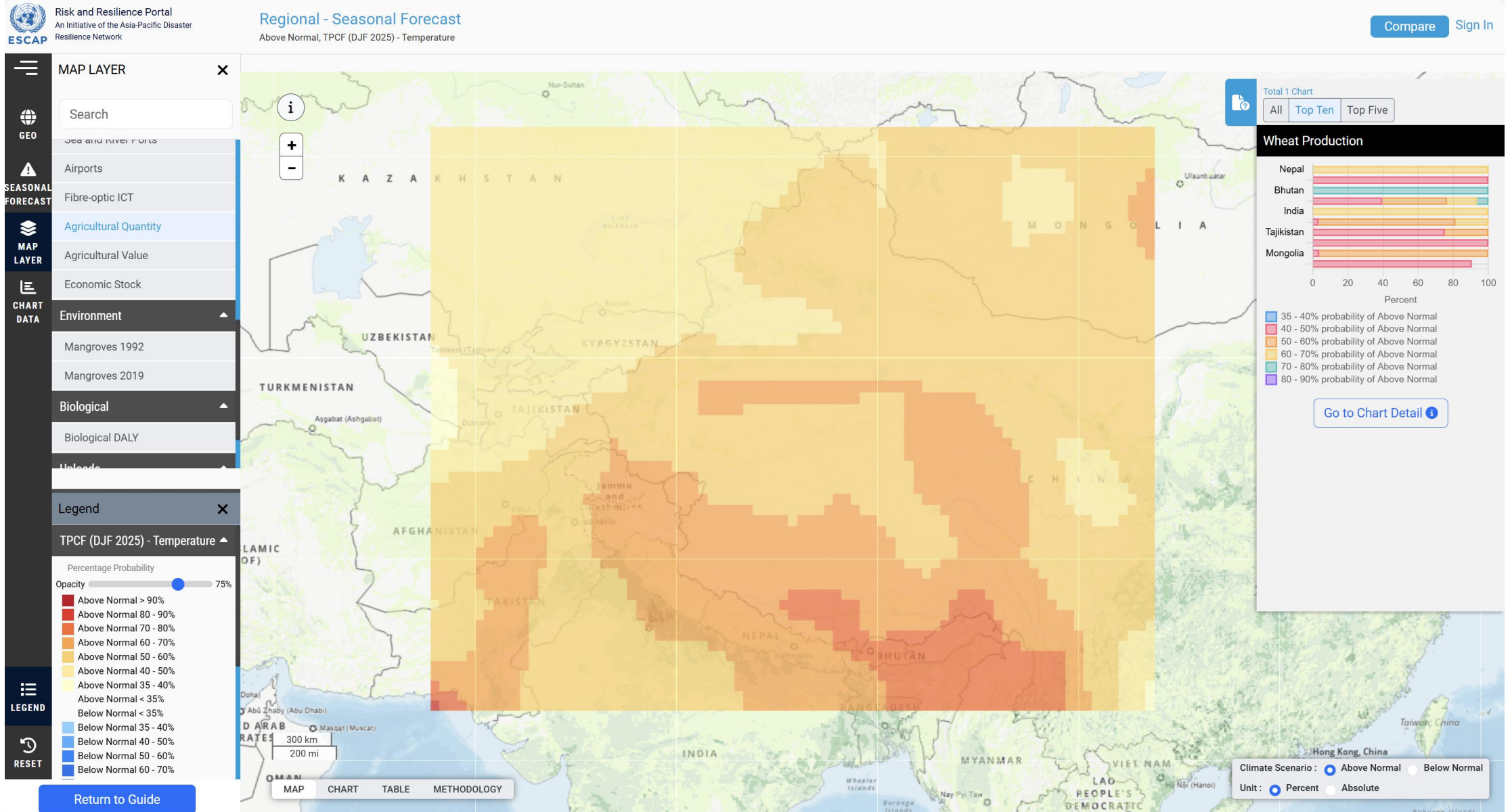
Transport Sector Exposure

Below Normal Rainfall (DJF 2025)



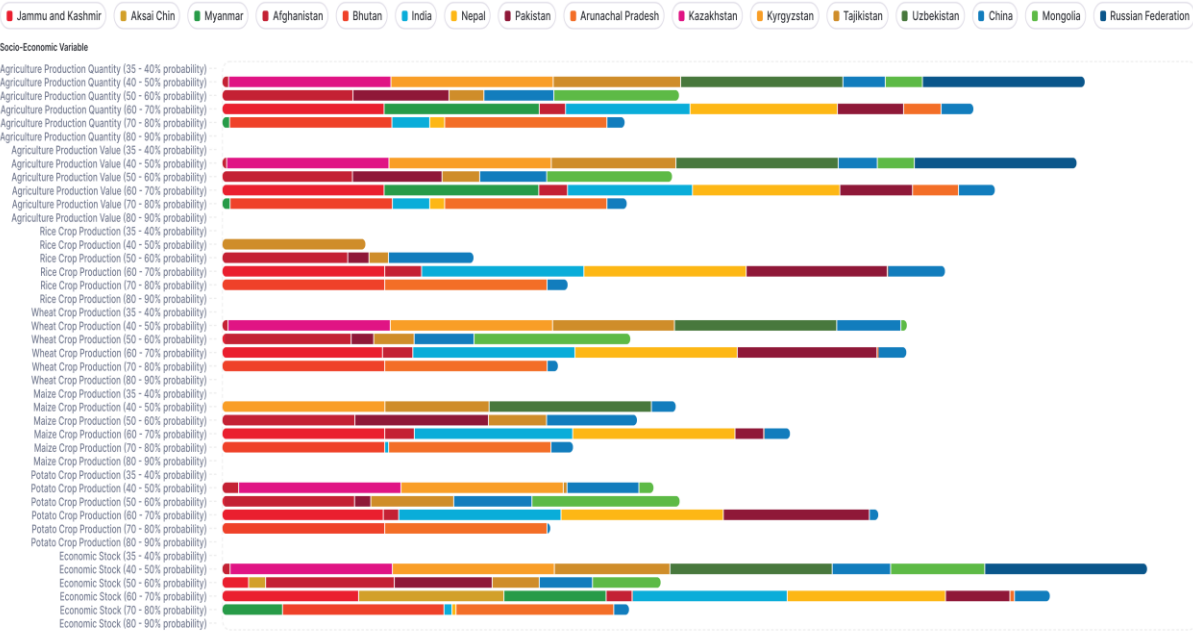
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Agriculture Sector Exposure

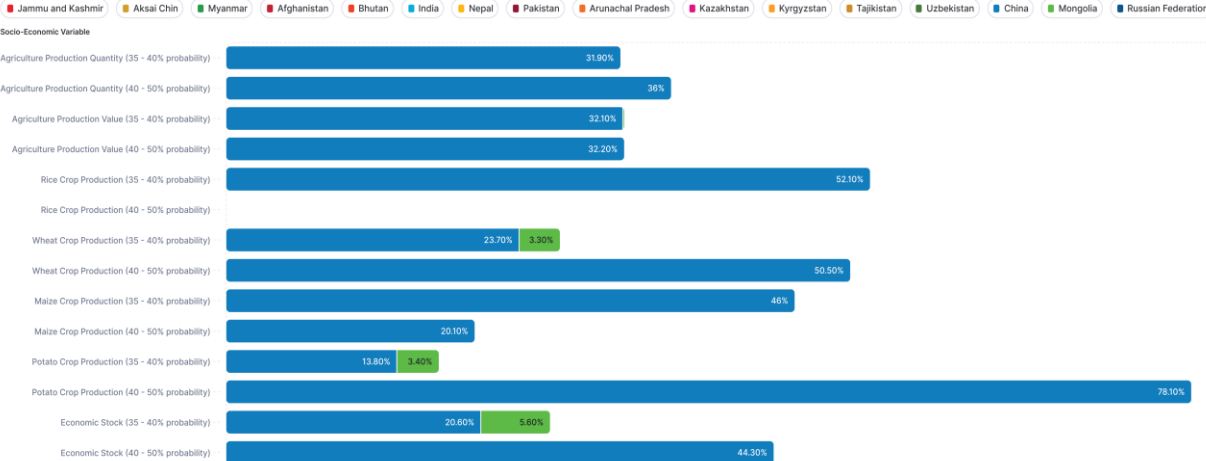


Agriculture Sector Exposure

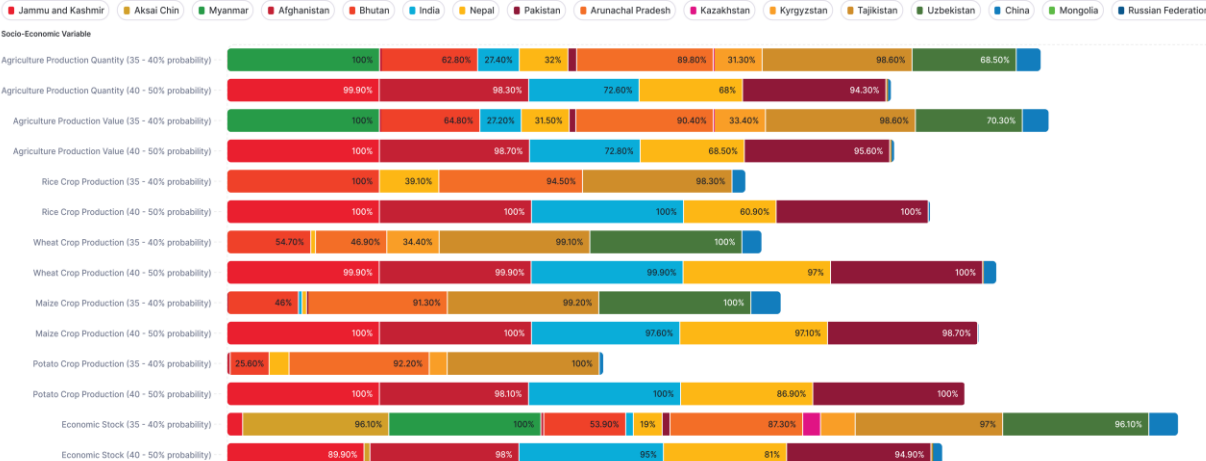
Agriculture Sector Exposure
Above Normal Temperature (DJF 2025)



Agriculture Sector Exposure
Above Normal Rainfall (DJF 2025)



Agriculture Sector Exposure
Below Normal Rainfall (DJF 2025)



Note: The percentages reflect exposure related to the specific sections within the Third Pole region, not the entire nation. Thus, 100% means full coverage of the region involved, not the entire country.

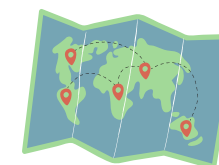
IBF automation tool on ESCAP RRP

INPUT*



- Population data
- Infrastructure data
- Hazard data
- Boundary data

OUTPUT



- Exposure and intensity zone of hazards
- Map & exportable table



GEOSPATIAL PYTHON AUTOMATION SCRIPT

GEOSPATIAL PRE-PROCESSING



- Setting CRS
- Setting resolution
- Classifying hazard (based on intensities, create different hazard intensity zones)

PROCESS IDENTIFICATION



- Auto recognize type of infrastructure / population data

GEOSPATIAL EXPOSURE ANALYSIS



- Calculate exposure to infrastructure and population
- Overlay & count exposure

*Georeferenced raster data

IBF E-learning training module on ESCAP RRP

Asia-Pacific Risk & Resilience Portal 2.0

Bridging the science policy gap for informed action

Data Explorer

700+
Datasets

100+
Policy documents

Home > Trainings > 1.1 The Evolution of Forecasting

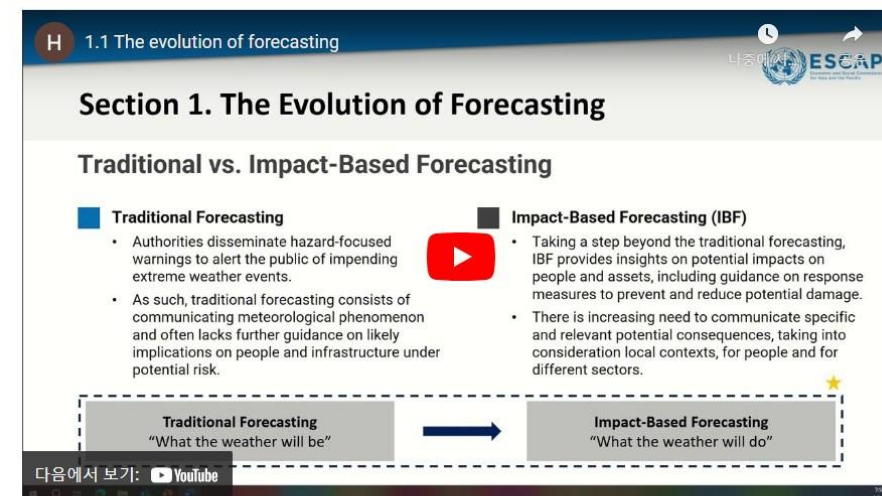
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 - 1.2 Understanding Impact-Based Forecasting
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- Module 2
 - 2.1 Introduction to QGIS
 - Section 2.2
 - 2.2.1 QGIS Installation
 - 2.2.2 Basic Concepts
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- Module 3
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 - 3.2 Testing models
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1.1 The Evolution of Forecasting

VIEW EDIT OUTLINE DELETE REVISIONS

The Evolution of Forecasting



The screenshot shows the user interface of the IBF E-learning training module. At the top, there is a header with the ESCAP logo and the text "1.1 The evolution of forecasting". Below this, the main content area is titled "Section 1. The Evolution of Forecasting". Underneath, there is a sub-section titled "Traditional vs. Impact-Based Forecasting". This section contains two columns: "Traditional Forecasting" and "Impact-Based Forecasting (IBF)". The "Traditional Forecasting" column lists two bullet points: "Authorities disseminate hazard-focused warnings to alert the public of impending extreme weather events." and "As such, traditional forecasting consists of communicating meteorological phenomenon and often lacks further guidance on likely implications on people and infrastructure under potential risk." The "Impact-Based Forecasting (IBF)" column lists two bullet points: "Taking a step beyond the traditional forecasting, IBF provides insights on potential impacts on people and assets, including guidance on response measures to prevent and reduce potential damage." and "There is increasing need to communicate specific and relevant potential consequences, taking into consideration local contexts, for people and for different sectors." Below these columns, there is a diagram showing a transition from "Traditional Forecasting" to "Impact-Based Forecasting". The "Traditional Forecasting" box contains the text "What the weather will be" and the "Impact-Based Forecasting" box contains the text "What the weather will do". At the bottom of the screenshot, there is a video player with the text "다음에서 보기: YouTube" and a play button icon.

Supplementary material:

[Module 1 material](#)

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