



Third Pole Climate Forum



TPRCC-Network Status and Services

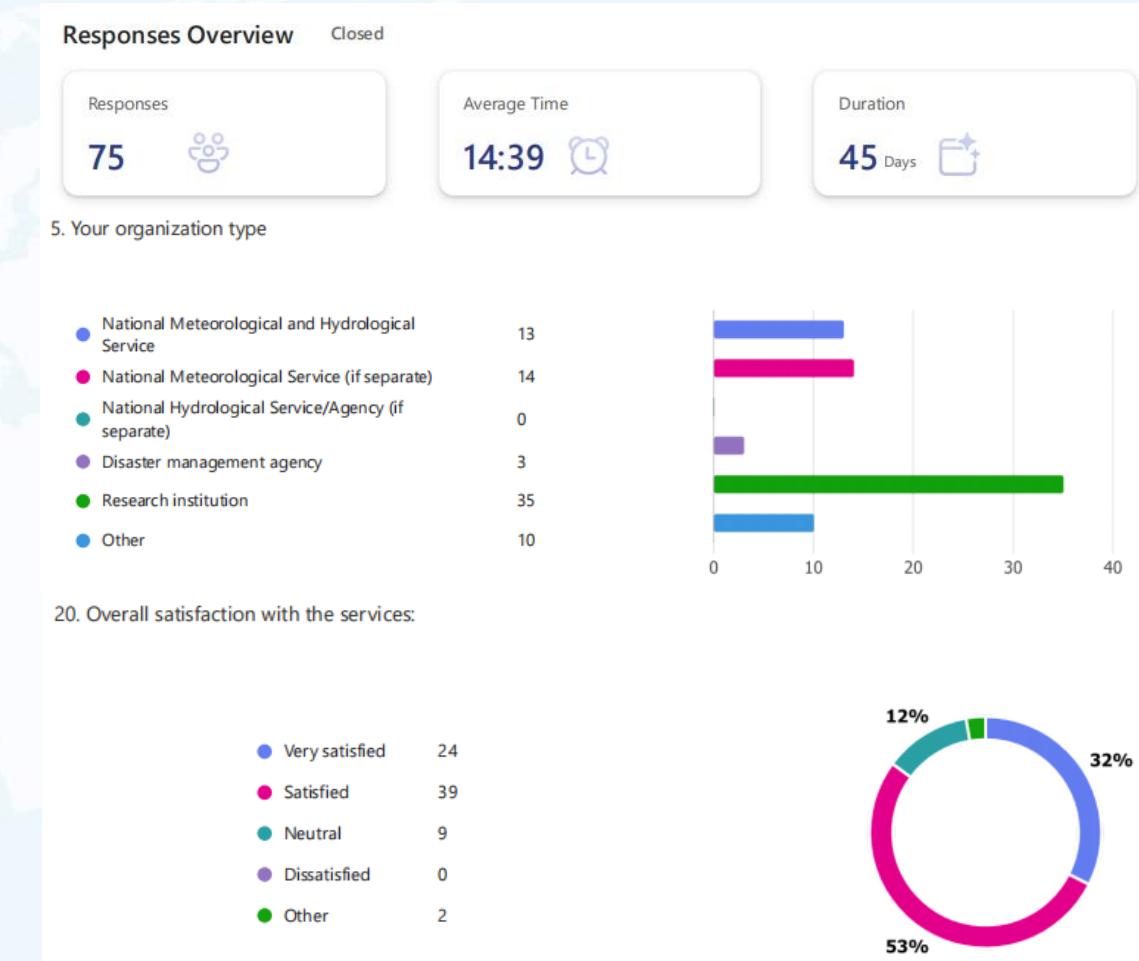
Lijuan Ma, NCC/CMA

On behalf of the TPRCC-Network

1 December 2025, TPCF-4

Activities of TPRCC-Network since TPCF-3

- Initiation of Designation Process
 - Road map of designation
 - Package for submission
 - Status Report for Designation
- Identify actions from TPCF-3 recommendations to develop functions and meet users priority requirements
- Results analysis of Users Survey conducted during TPCF-3, guiding identification of priorities





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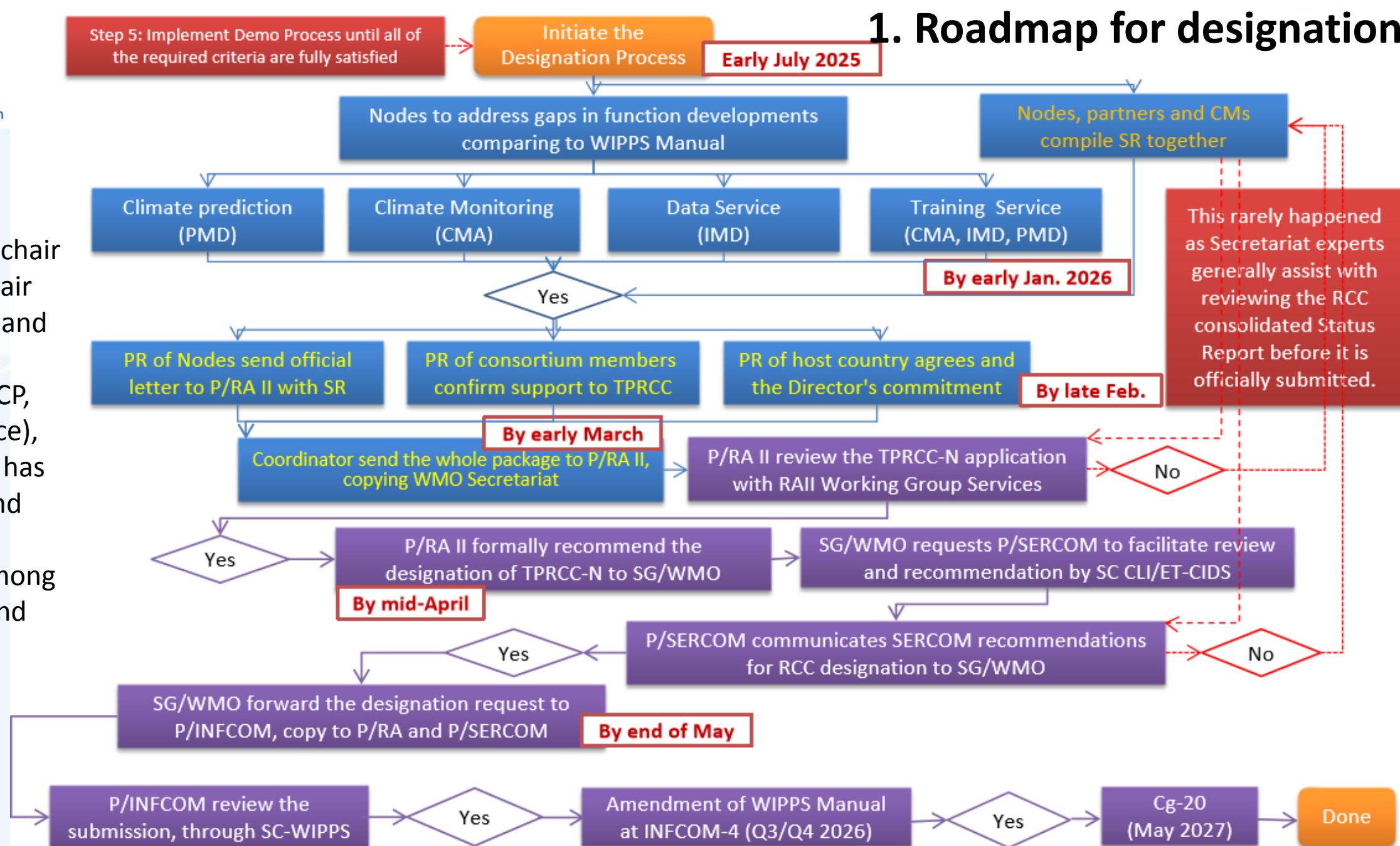
1. Roadmap for designation

Step 5: Implement Demo Process until all of the required criteria are fully satisfied

Initiate the Designation Process

Early July 2025

Guided by co-chair of ET-CIDS, chair of RAIWG-S, and the WMO Secretariat (RCP, DPS, RAP Office), the road map has been made and reached agreement among Nodes Lead and partners.





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Final package to be submitted to P/RA II

- 1) Consolidated **Status Report (SR)** demonstrating the ability to perform and the compliance with the mandatory functions of a WMO RCC
- 2) **PR's official letter from each Node lead** (after #1), indicating
 - a) Agree on the SR
 - b) Support the process for designation as a WMO RCC
 - c) Continue to support, which may include if applicable:
 - i. commit to regularly providing relevant contributions to the operations;
 - ii. continue to serve as the lead of the Node;
 - iii. continue to coordinate all RCC functions for the Node's domain
- 3) **From each consortium member, incl. partners** (after #1)
 - a) **Have had solid contribution at regional level**, and that is described in SR
 - b) **Official letter or email from PR of country or host country**, to confirm/commit to regularly provide relevant contributions to the Network's operations



Third P



Third Pole Regional Climate Centre Network (TPRCC-Network)

Status Report

- invite RAI interested Members and partners to identify solid contribution to TPRCC-Network at regional level in one month, and
- that is described in SR with active links for products



December 2025



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2. Actions from TPCF-3 recommendations

□ Sharing Existing Observations (6)

- High-resolution gridded data with **quality-controlled observations and (re)analysis** can be considered open data.
- Agree on a common data framework to consolidate **datasets** used for analyzing the national climate conditions within TPRCC-N.
- What would be a feasible **mechanism** for sharing these observations within TPRCC-N, particularly cryospheric data?
- Make valuable, already-existing **observations** from various **sectors** available to the TPRCC-N.
- **Types** of observation should be agreed. Only for TPRCC-N focused variables
- Consider integrating WMO **CryoNet** for cryospheric observations.

21. Suggestions for improvement on data/products and web portal

32
Responses

Latest Responses

"The application of AI models may improve objective forecast"
"none"
...

8 respondents (25%) answered data for this question.



A cloud of words representing survey responses, centered around the word 'data'. Other visible words include 'library and data', 'data relevant', 'projection products', 'data accession', 'data for the region', 'forecast', 'climate', 'products', 'comparison products', 'observational data', 'Historical data', 'TP', 'need', 'monitoring', 'TP elements', 'objective forecast', 'forecast data', 'forecast products', 'Climate', and 'cryospheric products'.

Result from TPRCC Users Survey



2.1 Efforts made at regional level

RA-II-18(I)-d04-2-RA-II-OPERATING-PLAN-2025-2027-approved_en

Annex I to draft Resolution 4.2(1)/1 (RA II-18(I))

RA II Priorities (2025–2027)

Under Goal 1: Better serve societal needs: delivering authoritative, accessible, user-oriented and fit-for-purpose information and services

(5) Operationalize the Third Pole Regional Climate Centre (TPRCC) Network; Strengthen observations and services in polar and high mountain areas.

RA II-18-J-DP-2	LTG-1/SO 1.5	Cg-19 Resolution 2 (Cg-19) Resolution 6 (Cg-19) EC-78 Resolution 4 (EC-78)	5	Promote polar and high mountain activities; Address Global and Regional Impacts of Changes in the Cryosphere; and High-level Ambitions on Cryosphere	<ul style="list-style-type: none"> (1) Consensus Statements for the Third Pole (TP) region (2) Production of consensus seasonal outlooks (3) Operational datasets and fit-for-purpose Climate Monitoring and Long-Range Forecast products available for users of the Third Pole Regional Climate Centre Network (TPRCC-Network) (4) Recommendations on addressing the gaps on cryosphere observations and data sharing (5) Seasonal Climate Bulletin for the TP region (6) Delivery of respective training programme 	<ul style="list-style-type: none"> (1) Number of participants attending the Third Pole Climate Forum (TPCF) (2) Number of models recommended for ensemble mean and dataset for verification (3) Number of products available on web portal and nodes' websites (4) Number of recommendations (5) Number of released Seasonal Climate Bulletin (6) Number of participants 	<ul style="list-style-type: none"> (1) Convene the TPCF twice a year (2025–2027) (2) Technical meetings on Long-Range Forecast (mostly virtual by TT-LRF), under the guidance of JET-TPRCC (2025–2027) (3) Organize JET-TPRCC meetings (mostly virtual) to address gaps identified between users' demands and service provisions (2025–2027) (4) Analyse Members' feedback to questionnaire on terrestrial cryosphere observations and data and summarize the recommendations into a report (2025) (5) Producing of the Seasonal Climate Bulletin for the TP region (2024–2027) (6) Combined training on method and instruments of cryosphere observations and state-of-the-art research, etc. upon request (2025–2027) 	Partially funded (in-kind, RB, XB, external)
LTG-2/SO 2.1	LTG-2/SO 2.3	Decision 6 (EC-78) EC-69 Decision 16 (EC-69) Decision 46 (EC-69) EC-70 Decision 47 (EC-70)						

RAII-18 endorsed the regional priorities

(5) Operationalize the Third Pole Regional Climate Centre (TPRCC) Network; Strengthen observations and services in polar and high mountain areas.

Relevant activity was approved in the RAII Operating Plan 2025-2027

(4) Analyse Members' feedback to questionnaire on terrestrial cryosphere observations and data and summarize the recommendations into a report (2025)

RAII Joint Expert Team on Cryosphere and High Mountain Services (JET-CHMS) was established to lead the implementation.

2.2 Station-based Climate Normals

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Operational Data Services

- Climatology
 - [pre_climatology_1981_2010_month_station_tp.csv](#)
 - [pre_climatology_1991_2020_month_station_tp.csv](#)
 - [snowdepth_climatology_1991_2020_month_station_tp.csv](#)
 - [tavg_climatology_1981_2010_month_station_tp.csv](#)
 - [tavg_climatology_1991_2020_month_station_tp.csv](#)
 - [tmax_climatology_1981_2010_month_station_tp.csv](#)
 - [tmax_climatology_1991_2020_month_station_tp.csv](#)
 - [tmin_climatology_1981_2010_month_station_tp.csv](#)
 - [tmin_climatology_1991_2020_month_station_tp.csv](#)

Station-based climate normals of Tmean, Tmax, Tmin, precipitation, and snow depth are available at the [website of Northern Node](#).

Number of stations:

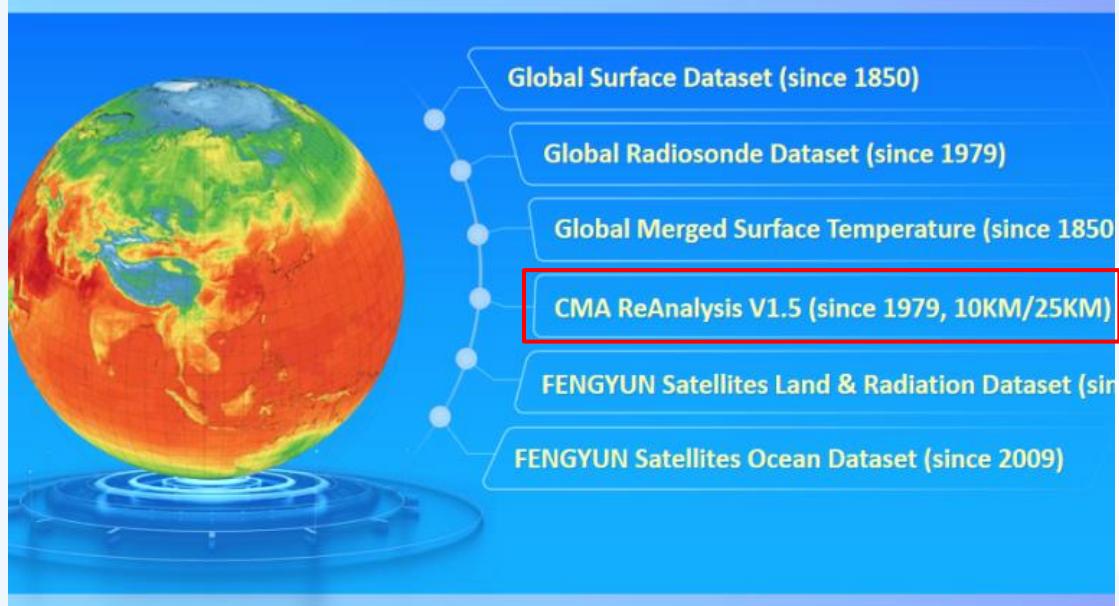
- Tmean and precipitation: ~200
- Tmax and Tmin: ~150
- Snow depth: ~100

Some Member countries and partners comit to share observations, e.g. Pakistan, TPE...

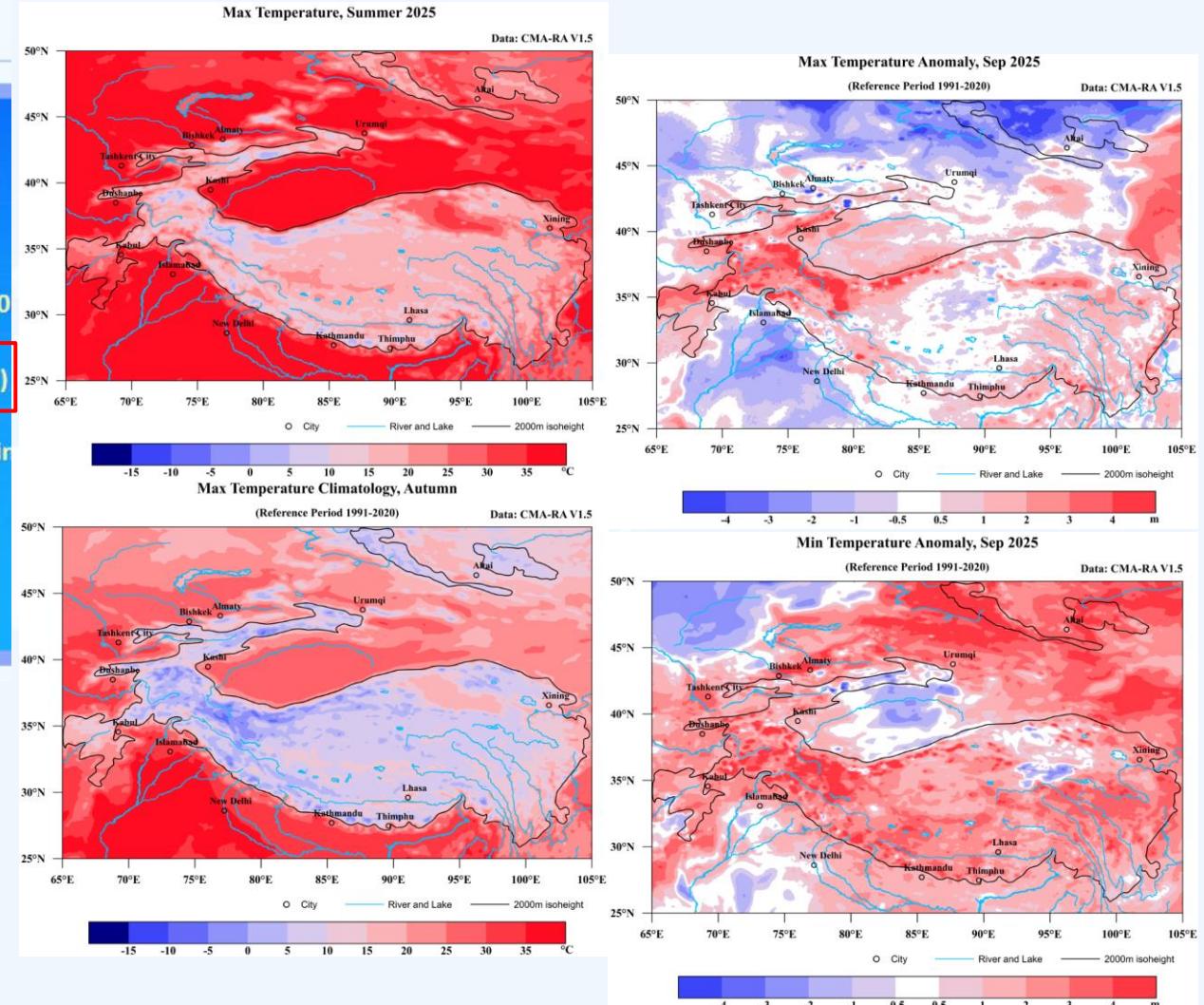
station_id,lat,lon,1,2,3,4,5,6,7,8,9,10,11,12
 35394,49.80 ,73.15 ,25.10 ,23.30 ,27.00 ,30.10 ,36.80 ,42.70 ,51.40 ,28.70 ,20.60 ,29.50 ,32.70 ,30.10
 35563,48.60 ,67.00 ,95.90 ,102.80 ,122.10 ,131.60 ,130.50 ,90.40 ,107.60 ,97.50 ,84.10 ,113.10 ,117.20 ,118.80
 35576,48.30 ,69.65 ,13.40 ,11.30 ,16.90 ,15.20 ,18.70 ,23.70 ,17.40 ,12.40 ,6.40 ,14.10 ,14.10 ,13.50
 35671,47.80 ,67.72 ,48.50 ,52.20 ,83.60 ,116.30 ,129.30 ,131.00 ,115.20 ,100.10 ,100.30 ,85.80 ,67.20 ,53.70
 35796,46.80 ,75.08 ,13.90 ,11.50 ,12.70 ,10.50 ,15.50 ,12.20 ,14.80 ,6.10 ,3.70 ,9.40 ,16.60 ,13.50
 35796,46.80 ,75.08 ,34.30 ,41.20 ,59.10 ,92.00 ,129.40 ,131.80 ,110.70 ,97.90 ,101.20 ,72.70 ,51.80 ,43.30
 36535,48.75 ,82.37 ,28.80 ,18.60 ,16.30 ,18.80 ,20.70 ,32.30 ,37.50 ,18.50 ,12.10 ,21.20 ,32.80 ,33.80
 36777,45.33 ,78.02 ,45.90 ,51.60 ,75.60 ,123.40 ,139.00 ,111.00 ,114.30 ,95.00 ,106.00 ,90.20 ,76.70 ,62.10
 36859,44.17 ,80.07 ,12.40 ,13.90 ,13.10 ,21.30 ,19.10 ,24.30 ,22.70 ,15.70 ,11.50 ,15.90 ,19.90 ,13.00
 36870,43.23 ,76.93 ,34.70 ,42.50 ,70.90 ,112.50 ,98.70 ,57.80 ,42.90 ,31.50 ,27.30 ,49.80 ,55.50 ,44.30
 36891,43.58 ,78.20 ,21.60 ,29.80 ,46.40 ,88.30 ,148.40 ,135.60 ,101.80 ,91.30 ,83.10 ,75.70 ,39.60 ,34.20
 36974,41.43 ,76.00 ,8.50 ,11.90 ,22.90 ,36.00 ,53.00 ,58.20 ,41.90 ,26.50 ,17.70 ,18.40 ,16.60 ,12.30
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 38223,43.80 ,74.40 ,41.20 ,47.60 ,76.70 ,112.50 ,133.40 ,116.50 ,130.80 ,106.60 ,98.00 ,87.50 ,65.90 ,52.30
 38313,42.72 ,69.00 ,73.40 ,72.70 ,113.80 ,120.80 ,120.10 ,88.80 ,91.10 ,88.40 ,103.80 ,88.60 ,111.90 ,77.50
 38328,42.32 ,69.70 ,76.80 ,92.30 ,82.50 ,74.10 ,57.10 ,22.80 ,7.30 ,3.60 ,43.70 ,35.20 ,75.50 ,76.90
 38338,42.20 ,70.10 ,33.80 ,29.20 ,28.00 ,31.20 ,43.60 ,69.30 ,76.00 ,71.20 ,48.20 ,51.70 ,45.90 ,41.40
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 38838,38.05 ,68.35 ,36.80 ,29.50 ,26.80 ,30.50 ,38.40 ,62.50 ,72.00 ,67.70 ,55.50 ,53.20 ,48.20 ,43.60
 38844,38.25 ,69.23 ,32.40 ,30.00 ,25.00 ,33.10 ,43.70 ,63.80 ,63.60 ,72.30 ,52.70 ,53.50 ,50.10 ,42.60
 38856,38.47 ,70.98 ,57.10 ,47.40 ,37.70 ,38.90 ,62.50 ,69.80 ,90.40 ,78.80 ,71.70 ,84.20 ,73.50 ,66.90
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 41525,34.75 ,72.90 ,11.40 ,10.20 ,13.70 ,39.30 ,58.10 ,64.30 ,34.70 ,29.10 ,30.10 ,27.10 ,15.80 ,10.70
 41530,34.02 ,71.58 ,50.30 ,71.80 ,104.80 ,90.30 ,31.40 ,47.70 ,107.30 ,99.40 ,36.30 ,44.50 ,24.40 ,18.70
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 41660,30.25 ,66.98 ,67.60 ,64.30 ,75.20 ,42.00 ,26.80 ,14.50 ,10.50 ,8.30 ,7.70 ,10.40 ,25.00 ,35.10
 41675,30.20 ,71.43 ,7.00 ,20.10 ,37.20 ,29.00 ,41.20 ,34.40 ,120.90 ,71.10 ,38.90 ,12.70 ,1.70 ,6.70
 41685,29.88 ,69.72 ,27.40 ,17.50 ,23.80 ,43.00 ,62.40 ,105.50 ,92.70 ,86.00 ,70.40 ,43.50 ,39.80 ,24.50
 41696,29.03 ,66.58 ,52.30 ,54.20 ,17.10 ,5.20 ,13.40 ,14.90 ,29.90 ,6.30 ,5.10 ,8.80 ,32.80
 41697,29.55 ,67.88 ,249.20 ,231.40 ,187.00 ,101.10 ,64.90 ,20.90 ,6.80 ,2.30 ,11.80 ,69.40 ,111.80 ,198.20
 41700,29.40 ,71.78 ,159.90 ,133.10 ,128.00 ,65.30 ,47.20 ,17.50 ,10.20 ,4.10 ,7.90 ,44.40 ,84.20 ,146.60
 41715,28.30 ,68.47 ,5.20 ,9.10 ,15.00 ,4.60 ,4.40 ,10.90 ,28.70 ,38.20 ,21.90 ,1.60 ,2.50 ,10.20
 41745,25.13 ,68.27 ,50.30 ,51.80 ,83.00 ,95.30 ,138.20 ,113.00 ,97.80 ,72.00 ,106.90 ,95.90 ,70.20 ,66.90
 41746,26.85 ,68.13 ,83.90 ,73.80 ,100.80 ,83.60 ,110.80 ,123.90 ,115.90 ,86.30 ,121.40 ,90.80 ,82.50 ,92.20
 41764,25.38 ,68.42 ,7.30 ,2.40 ,3.80 ,6.00 ,2.60 ,14.20 ,45.90 ,80.70 ,26.90 ,6.40 ,0.90 ,6.00
 41768,25.52 ,69.78 ,1.20 ,5.30 ,1.90 ,2.30 ,4.50 ,27.80 ,72.80 ,74.50 ,58.90 ,5.70 ,0.90 ,1.40

2.3 Tmax, Tmin by CMA ReAnalysis v1.5

Catalogue of CMA Global Climate Datasets



Based on CRA1.5 (10km) data sets, monthly/seasonal/annual Tmax and Tmin, as well as corresponding climatology and anomalies, have been newly produced and are available at the [website of Northern Node](#).





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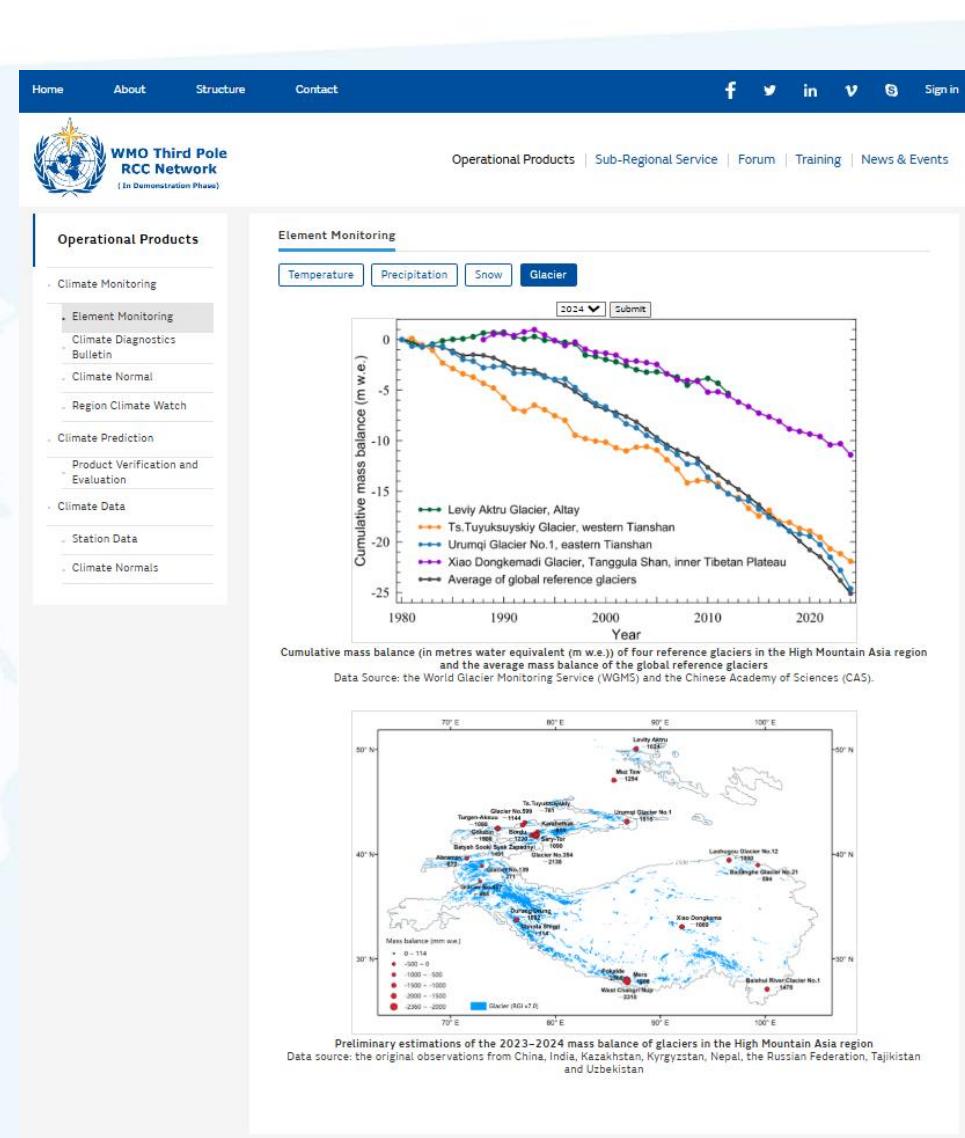
□ Glacier Monitoring (3)

- Use resources from the World Glacier Monitoring Service (WGMS) for global-scale glacier monitoring to provide comprehensive background information.
- Summarize and share WGMS content with presenters.
- A TPRCC-N node will present this material at the beginning of the relevant session.



2.4 Glacier mass balance products since 2020 has been released on TPRCC web portal, based on glacier data from WGMS and CAS .

https://www.rccra2.org/tp-rcc/home/channel/channel_id/43?product=Glacier



□ Snow Prediction and Evaluation (1)

- Request GPC-SP Montreal to provide more information regarding snow prediction evaluation.

□ Support GLOF Warnings (2)

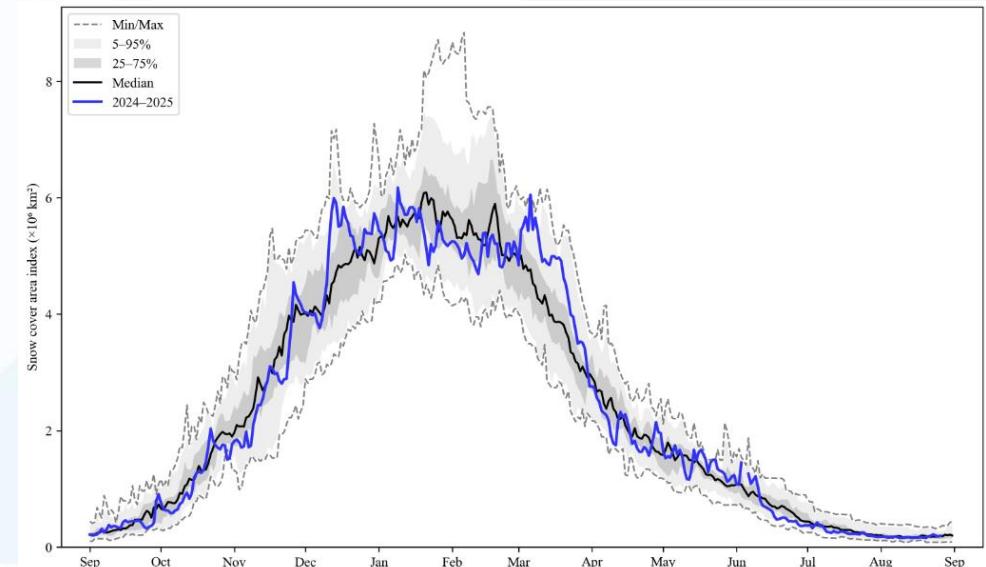
- Integrate GLOF into the WMO Hazard Event Catalogue – already in the Catalogue as Flood with specifically identification of GLOF.
- Include high-risk glacial lakes in seasonal outlooks using relevant variables



2.5 Joint WIPPS-GCW workshop on Snow Prediction and Evaluation — TPRCC focused session

2.6 To support snow evaluation, **more snow cover products are producing.**

2.7 RA II JET-CHMS plans to implement the **construction of HIE database.**





Third Pole Climate Forum



TPRCC-Network Seasonal Climate Bulletin

highlights; air temperature, precipitation, snow cover; High-Impact climate events



Seasonal Climate Bulletin in the Third Pole Region
Summer (JJA) 2025
Issued: 20 September 2025



Highlights

- Most of the Third Pole (TP) region recorded above normal surface air temperature (SAT), while the SAT in the southern and southwestern TP sub-region was near or below normal. The lower-than-normal SAT observed in the southwestern TP region and higher-than-normal SAT in the western TPCR¹ persisted throughout the summer.
- Summer precipitation in the TP region exhibited strikingly abnormal and uneven distribution characteristics. The precipitation in some areas of the southwestern TP region and parts of the southwest TPCR exceeded the normal amount by twice. Conversely, some areas in the western and northern TP region experienced a 20%–50% precipitation deficit relative to the normal level, with specific areas in the western regions reporting a precipitation deficiency of over 80%.
- The snow cover extent (SCE) over the TP region in summer was concentrated in high-elevation areas. For the season, substantial spatial heterogeneity and marked intra-seasonal variability were observed, with SCE in July ranking the fifth least since 2004.
- Due to the unusually early and intense South Asian monsoon this summer, several countries in the TP region has been affected significantly by floods, landslides, and debris flows resulting from monsoon precipitation. Although the monsoon advanced into Nepal on 29 May, rainfall deficits persisted six weeks later, leading to a severe water crisis and drought conditions in the southern part of the country. Throughout the summer, the southeastern Central Asia and the northern Pakistan have been affected by intense heatwaves.

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¹ TPCR refers to the region with altitude above 2000 m within the TPRCC-Network domain, i.e. the region within black contour in Figures 1-6.

than normal, which differs from the pattern in other summer months. Notably, the lower-than-normal SAT observed in the southwestern TPCR and the higher-than-normal SAT in the western TPCR persisted throughout the summer (Figure 2).

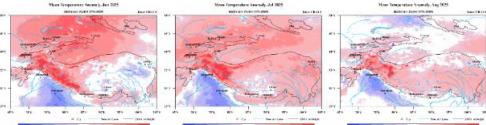


Figure 2 Monthly mean surface air temperature anomalies (relative to 1991-2020) in June (left), July (middle) and August (right) of 2025.
Data source: CRAI.5

1.2 Precipitation

For the season, the distribution of precipitation anomalies reveals a “below-normal, above-normal, below-normal” pattern from southeast to northwest of the region (Figure 3). The precipitation in some

TPRCC-Network Seasonal Climate Bulletin
Summer/2025

areas of the southwestern TP region and parts of the southwest TPCR exceeded the normal amount by twice. Conversely, some areas in the western and northern TP region, as well as central section along the southern periphery, experienced precipitation deficits of 20%–50% relative to the normal level, with specific areas in the western regions recording a precipitation deficiency of over 80%.

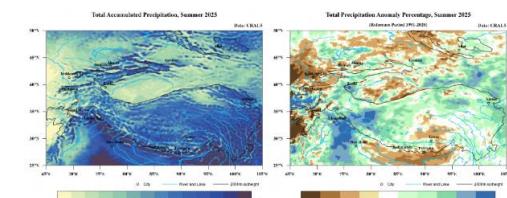


Figure 3 Seasonal precipitation totals (left) and anomalies by percentage in summer (JJA) 2025 (relative to 1991-2020, right).
Data source: CRAI.5

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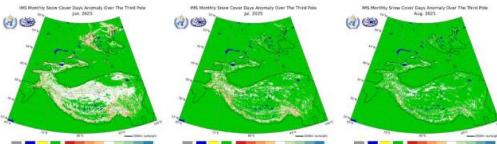


Figure 6 same as Figure 5, but for June (left), July (middle) and August (right) of 2025.
Data source: IAMS/NSIDC

2. High-impact Climate Events

2.1 Unusual early and intense summer monsoon

After an early onset in Kerala on 24 May 2025, the South Asian monsoon progressed rapidly through southern and western India. The southwest monsoon covered the entire India nearly two weeks ahead of schedule. Heavy rainfall from late May continued into early June, causing widespread flooding and landslides in the northeastern and eastern India. At least 50 people were killed and nearly 15000 hectares of crops were damaged across the region, according to a report by a humanitarian coalition Sphere India. In August, India continued to be affected by heavy rain and floods again. On 14 August, violent cloudburst struck Kishtwar district, triggering flash floods and concomitant mudslides. The event destroyed residential structures, roadways, and community infrastructure, resulting in 61 fatalities and 300 injuries.

Between late June and mid-August 2025, Pakistan endured one of the most destructive monsoon seasons in recent decades. Heavy monsoon rains since 26 June persisting into early July triggered flash floods across Pakistan, particularly affecting Balochistan, Khyber Pakhtunkhwa, Punjab, and Sindh provinces. Due to flash floods, 79 people lost their lives and 140 others were injured nationwide. Heavy rainfall damaged at least 189 homes and resulted in the loss of around 100 head of livestock. Over 15 to 19 August, a flash flood event across Khyber Pakhtunkhwa province resulted in 469 fatalities, 280 injured people, and more than 2100 damaged houses. A flood event in Sindh province over 19 to 20 August caused 52 fatalities, 52 injured people, and 87 damaged houses. Since the beginning of the monsoon season, as of 27 August, 804 fatalities, 1088 injuries, 1680 destroyed houses and 5785 damaged houses have been reported by the National Disaster Management Authority (NDMA) across the country.

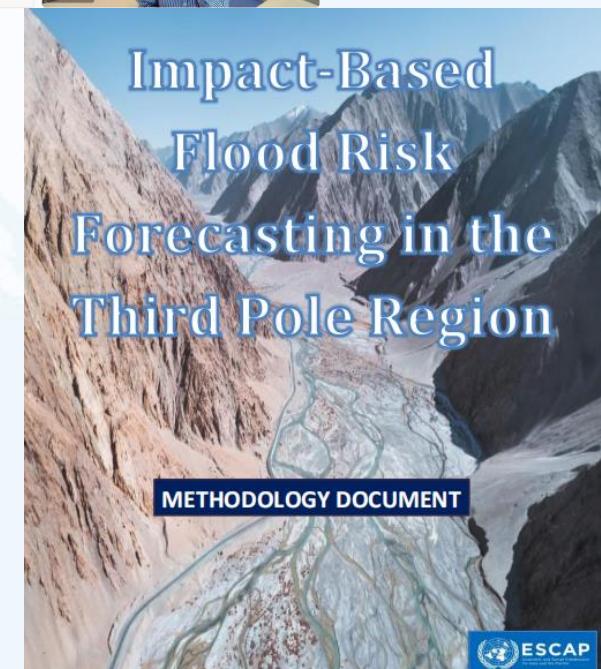
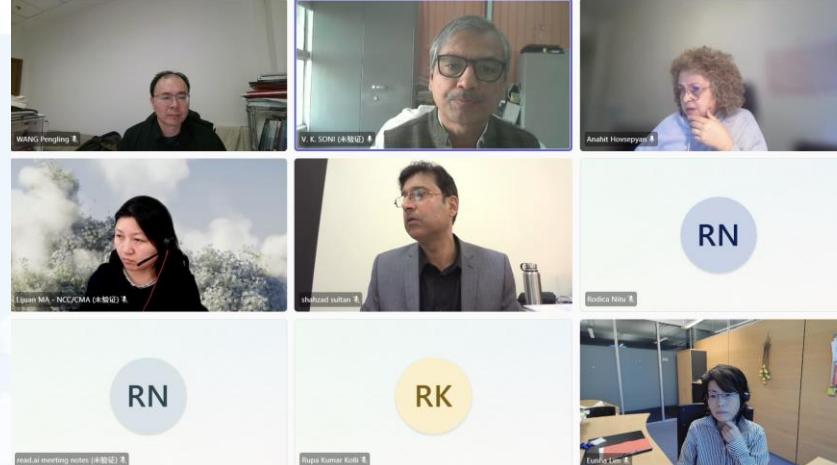
Release on the 20th of every 3 months at TPRCC web portal: <https://www.rccra2.org/tp-rcc/>

Sustainability of TPCF (10)

- Capacity building should be considered, e.g. integrate training sessions into TPCF to enhance data (obs + prediction) discoverability and usability?
- Well-defined session themes are required.
- To engage more users
-



- 2.8 Regular convening of **TPCF orgnizing committee**
- 2.9 **Training session** to be incorporated in TPCF
- 2.10 TT-CP **standardized the approach** of generating seasonal outlook
- 2.11 Develop **IBF** to serve sector users





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Climate Prediction Climate monitoring Climate data

Network Nodes

Northern TP Node Southern TP Node Western TP Node

Partners

GCW TPE ICIWOD GEIEX MRAI ESCAP

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Scoping and Planning Domain Concept Consortium Members Organisational Structure

The website is under construction. It is a beta version now. We appreciate your valuable comments.

<http://www.rccra2.org/tp-rcc/>

国家气候中心 National Climate Center



3. Functional optimization of web portal

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Element Monitoring

Temperature Precipitation Snow Glacier

monthly seasonal annual

Year: 2025 Month: 10 Search

Mean Temperature, Oct 2025

Data: CRA1.5

50°N 45°N

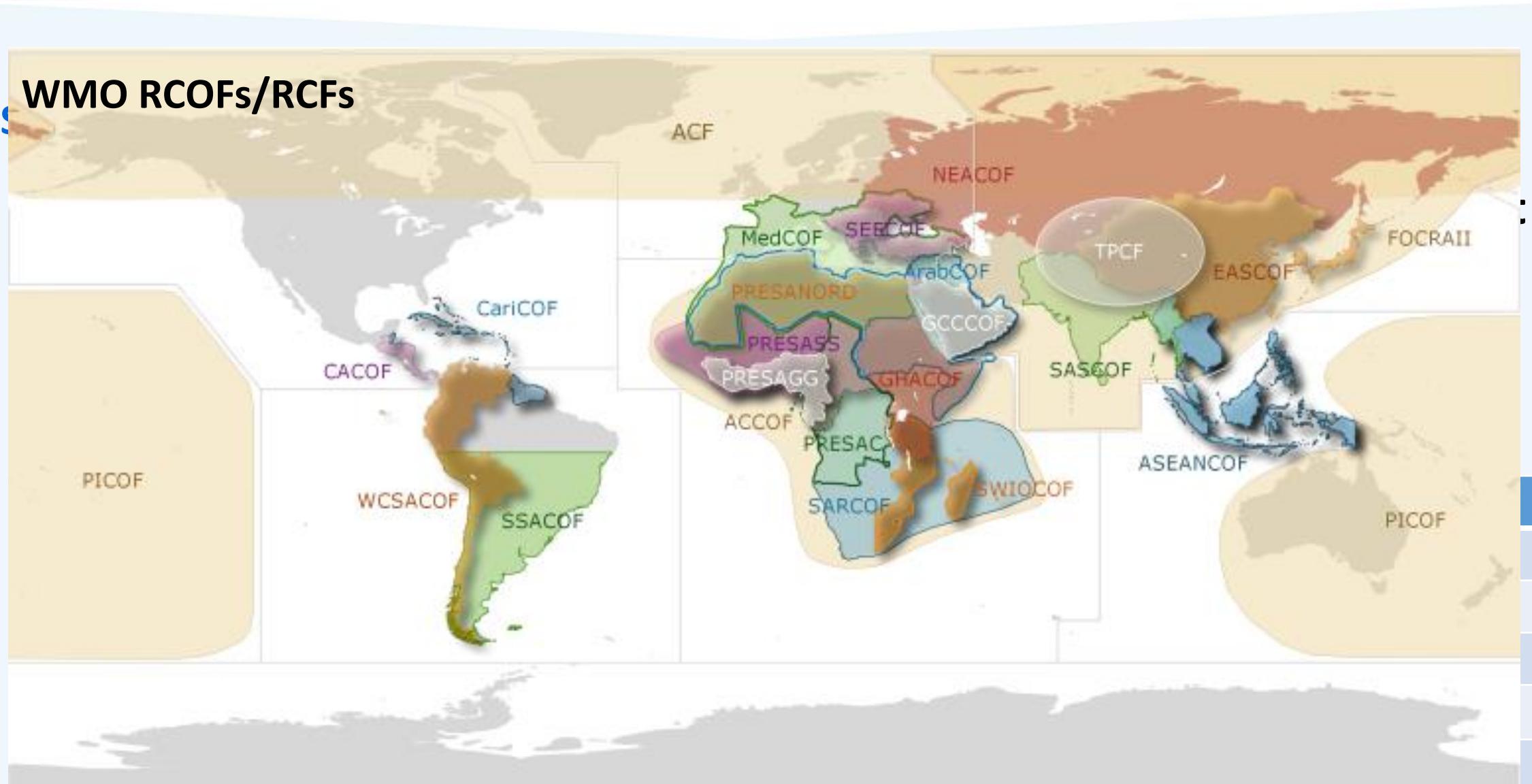
Alai Urumqi Bishkek Almaty Kashin Xining Lhasa Islamabad

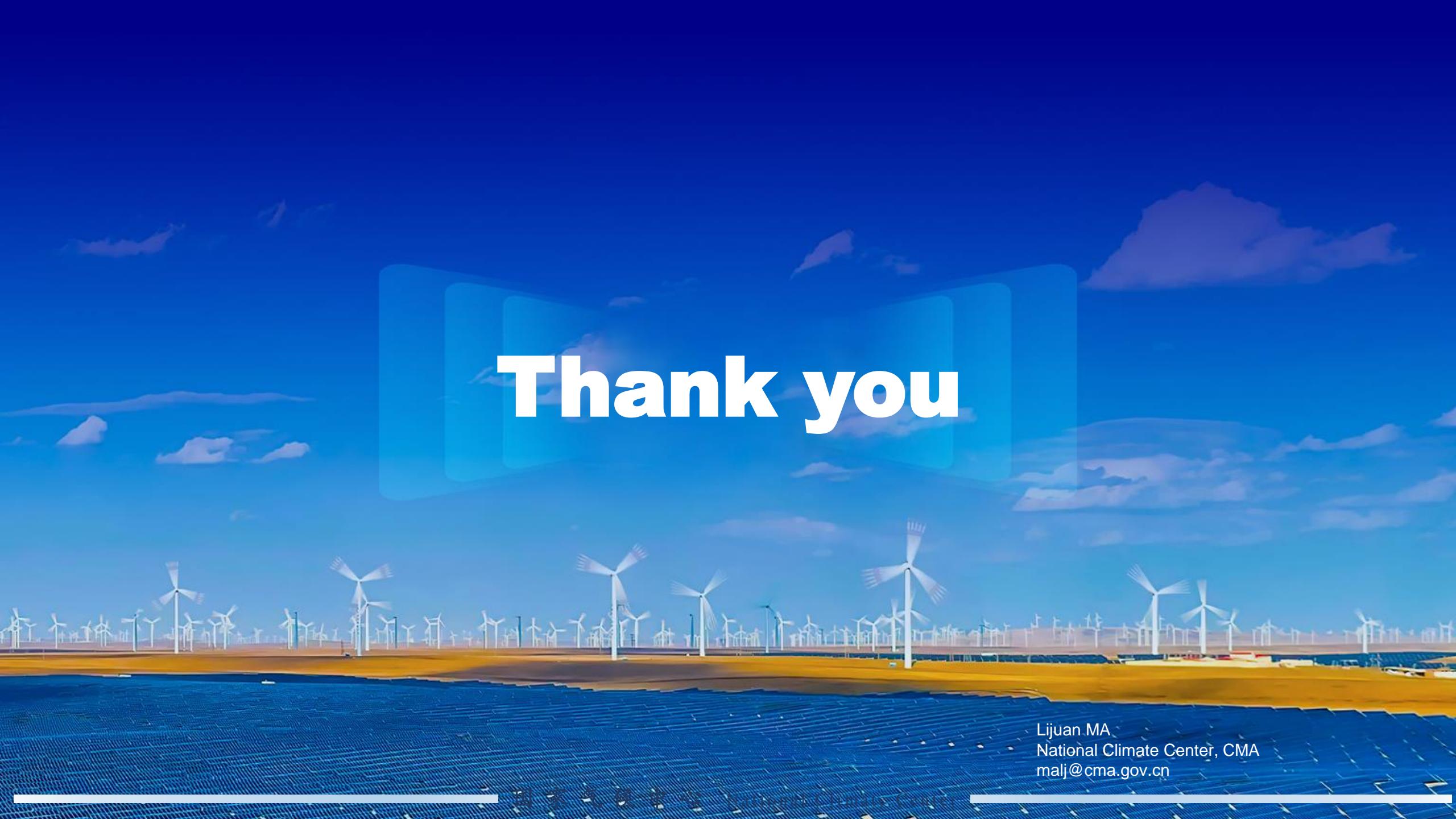
The number of visits in 2025

■ Korea ■ USA ■ India ■ Germany ■ French ■ Singapore ■ Pakistan ■ UK ■ Switzerland ■ Kazakhstan ■ Finland ■ Brazil ■ Ireland

The number of visits to the web portal reached 31,000 from Jan. to Oct. 2025, representing a nearly double increase compared to the previous year.

4. Sustainable mechanism of TPCF





Thank you

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