

**WMO OMM**

World Meteorological Organization
Organisation météorologique mondiale
Organización Meteorológica Mundial
Всемирная метеорологическая организация
المنظمة العالمية للأرصاد الجوية
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Ref.: 11651/2024-L.D.S/CS

Our ref.: 11651/2024/S/CS

19 July 2024

Annexes: 3

Subject: Invitation to attend the Regional Workshop on "Climpact: Supporting Local Climate Action Through Climate Indices" in Lima, Peru, 23–27 September 2024

Action required: (1) Nomination of a focal point within the National Meteorological and Hydrological Service (NMHS) to participate in the Regional Workshop on Climpact (Peru) **by 25 July 2024**

(2) Provide daily historical data for precipitation, maximum temperature, and minimum temperature for base-periods (1991–2020 or 1981–2020)

Dear Sir/Madam,

In support of capacity development for climate services in National Meteorological and Hydrological Services (NMHSs), the World Meteorological Organization (WMO) Climate Services Branch has designed a training course on Climpact, a software for the calculation of sector-specific climate indices. This course was developed under the Enhancing the Climate Science Basis of the Climate Rationale of the Green Climate Fund (GCF) funded activities (2018–2021) project now referred to as *Developing the Climate Science Information for Climate Action* (WMO-No. 1287). The aim is to strengthen the capacity of stakeholders further to access, synthesize, and incorporate relevant climate science information into climate action policies, plans and investments – including National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDCs).

For the delivery of this component, WMO, with the support of the Enhancing Adaptive Capacity of Andean Communities through Climate Services (ENANDES) and ENANDES+ projects, the Climate Change Scenarios for Central America Project and the Ibero-American Conference of Directors of Meteorological and Hydrological Services (CIMHET) will organize a hands-on Regional Workshop addressing the training needs of Spanish speaking countries in WMO Regional Association (RA) III (South America) and RA IV (North America, Central America and the Caribbean).

The training course will enable specialists and staff involved in climate data to understand Climpact, a tool to characterize climate variability and trends from historical daily data (not only addressing the role observations but indicating potential and limitation of remoted sensed, modelled and reanalysis data).

The face-to-face Regional Workshop will take place from 23 to 27 September 2024 in Lima, Peru, and will attain the following learning objectives (see [Annex 3](#)):

- (1) Identify climate data for analysing sector-specific climate-related risks.

To: Permanent Representatives of: Brazil, Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Uruguay and Venezuela (Bolivarian Republic of) with WMO (limited distribution)

- (2) Describe available methods and tools for the interpretation of sector-specific climate-related risks and opportunities.
- (3) Compute and interpret sector-specific climate indices for detecting changes in climate extremes.

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The Regional Workshop is designed to be practical and highly interactive. A total of 25–30 participants, including WMO staff and technical facilitators are expected to be in attendance. The expected audience for this workshop is required to be experienced in climate data manipulation and possess a good knowledge of the basic concepts in meteorology or climatology. Within this scope, workshop participants must complete the WMO [online course](#) "Introduction to Climpact: Generating Climate Indices to Support Climate Services" and obtain a satisfactory score in the associated final assessment (see [Annex 3](#)). Upon completion of the course, WMO will issue a badge which must be sent to the workshop organizers as evidence of readiness.

Please note, that the indication of a person to serve as a focal point for coordination with workshop organizers is required. The focal point will liaise with organizers to complete several tasks in preparation for the workshop. In particular, the focal point within the NMHS must share the historical hydrometeorological data and sectoral data from specific climate-sensitive sectors for the generation of sector-specific climate indices. Under this task, the focal point will identify relevant climate and non-climatic data in a high-quality format and will provide daily time series and their metadata to the workshop organizers.

I therefore kindly invite you to:

- (1) Nominate an expert from the NMHS to be the focal point on the scientific requirements for climate data and his/her participation in the workshop. The nomination of an interested and qualified candidate should be submitted through the attached nomination form ([Annex 2](#)) **by 25 July 2024**. All applications will be jointly reviewed by the WMO Climate Services Branch and WMO Regional Office for the Americas (RAM Office). Selection for this course will be made on a competitive basis. Any applications after this date will not be considered.
- (2) Request the NMHS focal point to support the provision of high-quality daily precipitation, maximum and minimum temperature historical data to the developers of Climpact for the current standard period 1991–2020 (or at least 1981–2010). The NMHS focal point must provide wherever possible the sectoral data from priority sectors required to explore their potential relationships with climate indices ([Annex 1](#)).

Any interested candidate from countries in WMO RA III and IV should first apply by sending a duly completed application form ([Annex 2](#)) with the relevant attachments to the WMO Climate Services Branch climatescience@wmo.int copied to the WMO focal points of the workshop Ms Ilaria Gallo (Igallo@wmo.int), Mr Amir Delju (adelju@wmo.int) and Ms Bárbara Tapia Cortés (btapia@wmo.int) **no later than by 25 July 2024**. Thereafter, the selected candidates will receive a Request for Financial Assistance (RFA) form to complete and return to WMO along with a copy of the selected candidate's passport, no later than **1 August 2024**.

Please note that while we encourage Members to cover the expenses of their participants to attend the course, WMO is prepared to support one participant from selected Members of WMO RA III and RA IV.

I take this opportunity to assure you of my unwavering commitment to capacity development related activities in support of climate services and thank you for your continued cooperation in this endeavour.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Ko Barrett', with a long horizontal flourish extending to the right.

Ms Ko Barrett
for the Secretary-General

DATA REQUIREMENTS FOR THE REGIONAL TRAINING WORKSHOP ON CLIMPACT

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1. High-quality climate datasets will need to include:

- For each station, a text file containing each of the original daily time series of precipitation, maximum temperature, and minimum temperature (see point 2 below).
- Metadata for the observation site including its location (latitude, longitude, elevation) and details on any relevant changes (calibration dates, changes of operators, changes in the surrounding environment, changes of instruments).
- A clean version of the original time series, where quality issues have been addressed prior to the training workshop. WMO Experts will provide technical assistance to preliminary assess, and quality assure the datasets required for the climate indices calculation during the training workshop.

2. Historical climate data necessary to produce Sector-specific Climate Indexes for the current standard period 1991–2020 (or the previous one 1981–2010):

1. Daily precipitation
2. Daily maximum temperature
3. Daily minimum temperature

Daily observations should be provided for as long as possible back in time, and they must be accompanied with **metadata** (*location of the station: latitude, longitude, altitude; documentation of any change in instruments, period of record, location or conditions of the observation site*).

For a detailed description of high-quality climate datasets and the required file format please [see online](#).

3. Sectoral data (if available) needed to calculate/analyse correlations with climate indexes

Sectoral or non-climatic data refer to annual/seasonal/monthly figures related to geophysical, ecological, socioeconomic, governance, or infrastructure characteristics from climate-sensitive sectors (health, water, agriculture, energy, disasters, or any other of priority such as forestry, fisheries, building, tourism) that could be correlated with climate indices to explore how climate might impact a specific sector. These could be, for example:

1. Land use
2. Crop yield records
3. Livestock mortality
4. Biodiversity loss
5. Rate of soil erosion
6. Forest fire incidence
7. Number of cases of diseases
8. Mortality/morbidity rates
9. Water volumes
10. Water demand/water offer
11. Urban density

12. Price variations
13. Insurance records
14. Unemployment rate
15. Livelihood dependency
16. Any other sectoral data to be provided by sector specialists

4. Additional data for the identification of climate-related risks

In addition, as part of the data collection effort, the following data (not compulsory, but desirable) might help in identifying other climate-related risks:

1. Average daily temperature
 2. Maximum intensity of rain in 1 hour
 3. Evaporation and evapotranspiration
 4. Daily flow and monitoring method (RVF)
 5. Upstream catchment area
 6. River flow data
 7. Level of the sea (CVM)
 8. Use / ground cover
 9. Agro-ecological zones.
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APPLICATION FORM

WMO REGIONAL WORKSHOP

"CLIMPACT: SUPPORTING LOCAL CLIMATE ACTION THROUGH CLIMATE INDICES"

23–27 September 2024

Lima, Peru

Ref.: 11651/2024-L.II S/CS

A. PERSONAL	
1. First name	
2. Surname	
3. Country	
4. Date of birth (DD/MM/YYYY)	
5. Gender	M / F
6. Passport number	
7. Do you have a disability	Yes / No
If yes, please specify	
8. Permanent home address	
(number, street, postal code, town)	
9. Telephone (mobile)	
10. Email	
11. Professional contact	
Name	
Telephone (office)	
Professional links	
12. Would you request financial assistance to participate at the course? Yes / No	

B. GENERAL			
1. Give details of working experience in meteorology and or climatology			
Name of organization	Starting and end date	Brief description of role and responsibilities	Reason for leaving

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2. Write a brief statement setting out clearly why you have chosen this course and how you intend to use it after graduation			

I declare that to the best of my knowledge all the information on this form is true and correct.

Signature

Date

C. PERMANENT REPRESENTATIVE ENDORSEMENT

Signature

Date

Notes and instructions

- Please read these notes and instructions carefully before completing this application form. Be sure to read every section and that the information you provide is accurate.
1. Applications received after the date of **25 July 2024** will not be considered;
 2. Applications received without the endorsement of the Permanent Representative will not be considered;
 3. Incomplete application forms will not be considered;
 4. Closing dates for the application dates are published and will be strictly adhered to;
 5. A copy of the passport must be included in the application;
 6. Successful candidates will be contacted by email. Please ensure that your contact details are correct and clearly written.
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COURSE DESCRIPTION

The WMO Regional Workshop on "Climpact: Supporting Local Climate Action Through Climate Indices" is a short course that is organized by the WMO Climate Services Branch in collaboration with the WMO Regional Office for the Americas and the WMO Representative for North and Central America and the Caribbean, and with the kind support of the WMO Regional Training Centre for Peru. The course will take place in Lima, Peru.

The in-person course is organized to explore how to generate sector-specific climate information relevant to climate-sensitive sectors through the use of the Climpact software package. This open-source software package, developed and maintained by the University of New South Wales, under the auspices of the WMO Technical Commissions and other partners, is used to calculate climate indices from daily precipitation and temperature data to identify better changes in the climate extremes detected from daily data as well as the climate variability and trends. Climpact indices can also be obtained from other sources apart from instrumental data (remote sensed data, reanalysis or models) and can also be calculated for future projections.

The course aims to address to the training needs of Spanish speaking countries in the WMO Regions III (South America) and IV (North America, Central America and the Caribbean) on the topic of sector-specific climate indices and their role in climate services. The training course will enable specialists and staff from National Meteorological and Hydrological Services (NMHSs) involved in climate data to have an in-depth understanding of climate indices and detect changes in the climate extremes concerning climate variability and trends.

Course format

This will be an in-person course. It will run from 23 to 27 September 2024 and will be delivered in the classroom.

The students must show satisfactory attendance, progress and timely and satisfactory completion of online tasks/quizzes as per submission deadlines. They are recommended to bring their own laptop.

Expected learning outcomes

By the end of the course, the students will have successfully achieved the following outcomes:

1. Identify climate data analysis for sector-specific climate-related risks;
2. Describe available methods and tools for the interpretation of sector-specific climate indices, the related risks and opportunities;
3. Compute sector-specific climate indices for detecting changes in the climate extremes from daily data.

Specific topics covered will be:

- Climate data completeness and continuity, and WMO standards and good practices;
- Quality control of climate time series using Climpact and local expertise;
- Testing homogeneity of climate time series;
- Climate change and sector-specific climate indices calculation;
- Trend analysis and assessment of climate variability;
- Correlating climate indices with sectoral data;
- Climate indices communication and application.

Competencies attained and certificates issued

After successful completion of the course, the candidates will receive a certificate stating the underpinning skills that support the high-quality and standardized development of climate indices for specific applications.

Target audience

Specialists and staff with experience in climate data manipulation from climate departments and units of NMHSs from WMO RA III and RA IV.

Instructors

Trainers from WMO will be the instructors of the course. Additional content experts will be brought in for specific portions/subjects of the course.

Working language

The course will be conducted in Spanish. No translation into other languages is offered.

Entry requirements

- Experience in handling Climate Data and basic to intermediate knowledge of climatology
- Experience in producing and analysing climate data and information
- Basic experience with the preparation of scientific analysis for various climate applications
- Knowledge of data analysis tools
- All this needs to be verified by proof of curriculum vitae (CV) and qualifications

Work experience: Relevant work experience in climate services is preferred.

Useful resources in preparing for the course

A laptop or desktop computer with Microsoft Office or equivalent (Word processor, PowerPoint Presentation etc.) that has a good memory capacity and storage (an external storage is advised). A laptop would be preferable as it can be used during the face-to-face phase.

Procedure for application

The application must include:

- A letter of motivation in Spanish, limited to 200 words
- A CV
- Relevant certified qualifications
- Nomination letter from the relevant Permanent Representative
- Certification of Completion of the course "[Introduction to Climpact: Generating Climate Indices to Support Climate Services](#)" (mandatory)

All applications will be handled according to the protection of private information requirements.

Application for consideration should be sent to: climatescience@wmo.int and copy to Ms Ilaria Gallo (Igallo@wmo.int), Mr Amir Delju (adelju@wmo.int) and Ms Bárbara Tapia Cortés (btapia@wmo.int)

Clearly mark the subject of the email as: **Regional Workshop on Climpact – LAC**

Deadline for application: **25 July 2024**

Deadline for submission of the Request for Financial Assistance (RFA) form with a copy of the admission letter and passport: **1 August 2024**

Only successful applications will be notified by email by WMO.
