Working Group on Subseasonal to Interdecadal Prediction (WGSIP)

ESMO/WCRP

WGSIP-26 Buenos Aires

23-26 February 2026

Meeting Summary

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March 2026

1. Overview

WGSIP's goal is to facilitate collaborative research and information exchange to advance subseasonal to inter-decadal climate prediction science and services. The 26th annual meeting of WGSIP brought together the working group for a hybrid session of four days of focused exchange, coordination, and strategic planning. Through centre updates, invited speakers, working group discussions, and targeted breakout sessions the meeting reviewed progress and priorities across global modelling centres, advanced WGSIP business and aligned activities, and strengthened links with key initiatives within WMO. Particular emphasis was placed on ongoing activities in machine learning, calibration methods across timescales, sources of predictability, and ensemble information, as well as on defining priorities and next steps for the coming year.

This document provides an executive summary of the key outcomes of the WGSIP26 meeting. Original meeting notes generated by Zoom AI are also available upon request (contact ESMO).

The agenda and meeting presentations are available in the WGSIP google drive.

2. School on Climate Prediction Across Timescales

WGSIP organised the School on Climate Predictions across Timescales (23–27 Feb, University of Buenos Aires), held in parallel to the WGSIP Annual Meeting. Several WGSIP members contributed as instructors, delivering both lectures and hands-on laboratory sessions. Feedback from participating students was overwhelmingly positive.

The School brought together ~30 participants and was targeted at early-career researchers and professionals working in climate services and operational prediction. The programme combined lectures with practical laboratory exercises based on real datasets and Python notebooks. Participants also completed mini-projects and presented their results at the conclusion of the School.

The content covered a broad range of topics, including:

- Predictability, prediction, and causality across sub-seasonal to decadal timescales
- Systematic model errors, bias correction, and calibration methods
- Cross-timescale interactions and opportunities to merge predictions across timescales
- Methods for forecast verification
- Machine learning, artificial intelligence tools and emerging prediction methods
- Applications of climate predictions in societal and environmental decision-making

3. Initiation of S2SP Panel

WGSIP is constituting a Subseasonal to Seasonal Prediction (S2SP) Panel that will sit under WGSIP. The panel will focus on timescales from two weeks to two months ahead. The identified co-chairs are Yuhei Takaya (JMA) and Yaga Richter (NCAR). The panel's work will complement the more application-focused approach being taken in WWRP SAGE. The Panel's Terms of Reference have been finalised and the call for panel membership will go out in the next couple of months, before the S2S2D conference (Sept, 2026), such that the first meeting of the Panel can coincide with the conference.

4. Collaboration with ET-OCPS

WGSIP has an ongoing collaboration with ET-OCPS (Expert Team on operational climate prediction systems). Last year the need was recognised for developing short, practical guidance docs to support operational climate prediction. Caio attended the WGSIP meeting to discuss the collaboration further. We identified Jin-Ho and Marisol as the WGSIP liaisons on this collaboration. In terms of progress, the document advising on the generation of MMEs for operational climate prediction is currently being finalised. These guidance documents are key for co-development of climate services.

5. Data Access and Infrastructure

The impending closure of the IRI Data Library (30 April) was identified as a pressing issue, particularly with respect to access to NMME Phase 2 daily data. Actions were agreed to follow up with Ben Kirtman and Andy Robertson regarding data availability and the planned mini-IRI library. The possibility of hosting project datasets at CIMA (Centro de Investigaciones del Mar y la Atmósfera), with researcher access facilitated through notebooks, was raised as a potential solution.

6. Research/activity foci:

6.1 CHFP

Agreement was been reached to migrate the CHFP database from CIMA to APCC, following decisions at WGSIP-24 and WGSIP-25.

Existing CHFP data at CIMA were successfully transferred to APCC in May 2025, amounting to around 5.2 TB across more than 46,000 files. In addition, WMO ET-OCPS has obtained approval from all GPCs except Pretoria to include LC-SPMME hindcast data in the CHFP database.

Development of the new data service at APCC is currently underway. CHFP data will be delivered through the APCC website via the Climate Service Toolkit (CLIK), with a structure that includes an overview page describing the dataset and metadata, alongside a data download page. The original CHFP data structure from CIMA will be preserved, and LC-SPMME hindcast data will be copied to the CLIK server in formats including GRIB, GRIB2 and NetCDF, with the intention of providing the most recent available hindcast versions. Page content and layout are to be developed and shared with WGSIP members by May for feedback, with the data service expected to be technically ready by June. An official launch will follow once WGSIP provides its formal approval.

6.2 ML models for sub-seasonal and seasonal prediction

One of the key research foci going forwards will be on ML, specifically on the evaluation of ML models for sub-seasonal/seasonal prediction. The main aims are to:

- Explore the potential of ML models for sub-seasonal and seasonal prediction
- Engage with the broader ESMO and WMO communities
- Build and support a scientific community
- Synthesize and share knowledge

Expected outcomes are improved understanding, synthesis of emerging findings, enhanced community engagement and active collaboration.

As part of initial activities,

- a new webinar series exploring ML prediction for sub-seasonal to interdecadal timescales has been established. The series has attracted strong engagement (50–80 participants per session) and is set to continue this year. The group discussed strategies to broaden the speaker pool — including early career researchers and work-in-progress presentations. WGSIP members have been encouraged to contribute ideas of speakers and host seminars.
- a public Zotera library of relevant ML publications has been developed;
- and a sub-project in the international WP-MIP project has been established – which focuses on forecasts out to week 2.

Future plans include a collaborative evaluation of the performance of the ML models that submitted forecasts to the S2S Weather Quest competition (once the competition has ended), engagement with the Joint Working Group on Forecast Verification Research (JWGFVR) on appropriate verification strategies. Plans were confirmed to establish a dedicated website within

the ESMO platform to consolidate ML resources, webinar recordings, and the literature library within the next few months.

6.3 Sources of Predictability

The group reviewed existing predictability initiatives across timescales and discussed the need to sharpen their scope and define concrete deliverables. Potential collaborations with WCRP partners was explored, alongside demand-driven approaches to climate information. The team agreed to identify seasons of interest for coordinated model experiments and to produce a review or newsletter article advertising S2S initiatives including SBAT, LS4P-E, SNAP-C, and related activities.

6.4 Ensemble information across timescales (including user-demand-driven focus)

A substantive discussion took place on post-processing and calibration approaches spanning sub-seasonal, seasonal, and longer timescales. The group noted a gap in the literature on methods that operate consistently across these scales. Agreed actions include conducting a formal literature review, creating a shared Zotero reference library, establishing a WGSIP GitHub repository to fork and compare open-source calibration tools, developing an intercomparison protocol, and producing a short good-practices document and ultimately a research paper on the topic. Merging and bridging approaches across timescales were also identified as a parallel workstream.

7. Governance and Membership

- Andrea will be stepping down from WGSIP membership.
- Yuhei and Yaga will be co-chairs of the S2SP Panel.
- Ángel announced his intention to step down from the WGSIP co-chair role following his transition to the private sector, with the exact timing of the handover (mid-year or end-of-year) to be confirmed. Questions were also raised regarding WG membership of private-sector employees and the applicability of conflict-of-interest policies. This will need to be clarified through formal channels.

8. Summary of Future Plans and Priorities

- Launch S2S Panel
- S2S2D Conference (Reading, Sept 2026)
- CHFP dataset move from CIMA to APCCC and to include LC-SPMME hindcasts
- Continued engagement with ET-OCPS on guidance documents
- Progress on research activities, including formalising the group structure around the three themes of Machine Learning, Predictability, and Calibration/Ensemble Information
- Updating the WGSIP web space to reflect current and completed activities

A few highlight pictures from the WGSIP School on Climate Prediction Across Timescales





