



World Climate Research Programme
 c/o World Meteorological Organization
 7 bis, avenue de la Paix
 Case postale N° 2300
 CH-1211 Geneva 2 – Switzerland
 wcrp@wmo.int

JSC-44
 Submitted by: E N Rajagopal
 1 May 2023
FINAL

Request of input from core activities to the

44th Session of the WCRP Joint Scientific Committee (JSC)

8-11 May 2023

Overarching goal: Provide an update on progress with respect to science outcomes, and with respect to planning of new activities and enhanced collaborations within – and outside of - WCRP made over the last year, including any aspects that you want to bring to the attention of the JSC and the wider WCRP family.

While producing your report, it would be helpful if you can:

- *Keep the report to essentials (around 5 pages in length, if possible; appendices and links can of course be used)*
- *Address the topics listed below plus anything additional you would like to include.*

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Template:

Report to the WCRP Joint Scientific Committee

[Core Project, Lighthouse or activity Name]

1. Highlights achieved since JSC-43

- *Highlight 1*
- *Highlight 2...*

2. Planned science initiatives and major events (next 3 to 5 years)

- *Science initiative 1*
- *Science initiative 2...*

3. Active or planed collaborations with other Core Projects, Lighthouse Activities etc.

3a. Requests for the WCRP Academy to support your training activities?

- *Request 1*
- *Request 2*

4. Partnerships with projects outside WCRP

5. Issues and challenges:

- Recommendations or proposals, including any proposed changes to the structure of the Core Project, Lighthouse or other activity
- How do you see your community evolving, e.g., activities coming to an end or new ones starting?
- List any advice you request from, or questions that you have for, the JSC (including any additional funding requests you might have at this stage)

**Report to the WCRP Joint Scientific Committee
International Monsoons Project Office (IMPO)**

1. Highlights achieved since JSC-43

- ❖ IMPO has provided key support to the CLIVAR/GEWEX Monsoons Panel (MP):
 - Rigorously supported the Monsoons Panel in the preparation of its Annual Report of 2022 and its subsequent submission to the CLIVAR/GEWEX SSGs.
 - Coordinated with Monsoons Panel (MP) Co-Chairs for organizing 5 online meetings of MP. The Minutes of the Meetings (MoMs) were finalized with the suggestions from Co-chairs and members and subsequently they were forwarded to CLIVAR and GEWEX IPOs for their records.
 - Drafted the MP's recommendation proposals for the 2023 membership (for 5 vacant positions) based on CLIVAR/GEWEX nominations and submitted them with the concurrence of MP Co-chairs for the approval of the SSGs of and CLIVAR and GEWEX. Both SSGs endorsed the membership changes, and subsequently IMPO completed the formalities of appointing the new members and thanking the departing members.
 - Developed a SharePoint [Monsoons Panel Notebook](#) using Microsoft 365 OneNote on tropmet.onmicrosoft.com for updating/viewing of the activities of MP and its regional WGs from a single source. This is expected to lead to more active collaborations among MP and the WG members.
 - Finalized and submitted the MP's funding proposal (totalling to 10K CHF) for the in-person meeting of MP & WG-AFM at OSC-2023 with the concurrence of MP Co-chairs for CLIVAR & GEWEX SSGs approval and the same has been approved.

- ❖ IMPO provided key support to the Monsoon Panel's three regional Working Groups on Asian Australian Monsoons (WG-AAM), African Monsoons (WG-AFM) and American Monsoons (WG-AMM):
 - Participated in WG-AAM meetings to discuss on the activities of the group and its 3 sub-groups (Viz., Monsoon Processes and Teleconnections; R2O for monsoon seasons in SE Asia; High Impact Weather Events)
 - Actively involved in the selection process of Dr. Rondrotiana Barimalala as the new Co-chair of WG-AFM as a replacement for Dr. Claudine Wenhaji Ndomeni. Subsequently, her appointment letter was prepared and issued with the approval of MP Co-chairs.
 - Participated in the WG-AFM general meetings held to discuss the activities of their 3 sub-groups (Viz., South & East Africa, West Africa, and Central Africa).
 - Actively participated in the preparation of a review article on Climate **Modelling of Precipitation over Africa; Progress, Challenges, and Prospects** from the regional Working Group on African Monsoons (WG-AFM) and the same was submitted to the International Journal of Climatology.
 - Actively involved in the selection process of Dr. Ruth Cerezo-Mota as the new Co-chair of WG-AMM as a replacement for Dr. Tereza Cavazos. Subsequently, her appointment letter was prepared and issued with the approval of MP Co-chairs.
 - Played a proactive role in the updation of MP & WGs email lists of the CLIVAR email groups (monsoons-panel.org, mpwg-aam@clivar.org, mpwg-afm@clivar.org, mpwg-amm@clivar.org) maintained by CLIVAR IPO.

- ❖ **Activities related with WCRP:**
 - Coordinated and collected suggestions & comments on "WCRP Global Precipitation Experiment (GPEX) white paper" from Indian Experts and forwarded the same to WCRP.
 - **OSC-2023:**

- A proposal for holding a special session on Monsoons at WCRP OSC-2023 was drafted & finalized after incorporating suggestions from members of MP & WGs and the same was forwarded to WCRP for their consideration.
- Nominated Drs. Suryachandra Rao and Andrew Turner as session convenors of "Global & Regional Monsoons" and the same was accepted by the SOC of OSC-2023.
- Encouraged and coordinated the submission of **two Poster Clusters** by members of MP & WGs. The Poster Clusters accepted by OSC-2023 are [PC07: Advances in monsoon science & prediction: Theory, observations, modelling & climate services](#) and [PC08: Extreme rainfall and temperature events: Forecasting challenges and role of ensemble prediction system](#)
- Created a WhatsApp group of the convenors and a SharePoint **Monsoon Session Convenors Notebook** on tropmet.onmicrosoft.com for easy and quicker exchange of information among the group members.
- Organized and participated in the online meetings of the 4 Convenors of “Global & Regional Monsoons” session of OSC-2023.

❖ **Activities related with International Project Offices (IPOs) and WCRP Secretariat Group:**

- Actively participated in the group’s meetings held on 22nd September 2022, 17th January 2023 and 18th April 2023 and provided an update on the activity highlights & the forward look of IMPO during the corresponding reporting periods.
 - The activity highlights and the forward look was also updated in the **IPOs & WCRP Secretariat Group Notebook** maintained on gmuedu.sharepoint.com.
 - The requirement of a meeting room with online participation facility for the in-person meeting of MP & WG-AFM at OSC-2023 was projected to WCRP.
 - The last IPO & WCRP Secretariat Group online meeting was hosted by IMPO on 18th April 2023 and the meeting notes were made available online on 20th April 2023.
- Involved actively in the discussions on WCRP Travel Carbon Calculation Guidelines in the half of the group meeting on 17th January 2023. A preliminary report on the same is to be submitted before the next in-person WCRP JSC meeting being held at Brussels during 8-12 May 2023.
- IMPO Received an invitation to participate in the JSC-44 session from WCRP. However, IMPO is unable to attend the session in-person due to nonavailability of Belgium Visa appointments at VFS Mumbai.

❖ **Activities related with IMPO Newsletter “Monsoon Matters”:**

- Initiated the background works and coordination activities for publishing IMPO’s Flagship Newsletter "Monsoon Matters", to be published twice (January-June & July-December) in a calendar year, as PDF versions through IMPO's webpage. This activity was announced to all concerned in WWRP, WCRP, CLIVAR, GEWEX, Monsoons Panel, etc. seeking their approval and help in populating the inaugural and subsequent issues with monsoon related topics. It was decided that Executive Head, IMPO will be the Chief Editor of the Newsletter and Guest Editors will be identified based on the theme of the issue.
- The theme of the inaugural issue of “Monsoon Matters” was agreed upon as "Monsoons in a Warming Climate". Three Guest Editors identified for the inaugural issue are *Dr. R. Krishnan, Director IITM; Prof. Leila Carvalho, Co-Chair MP; and Dr. Akintomide Afolayan Akinsanola, Co-Chair WG-AFM.*

❖ **Participation in Meetings/Workshops/Committees/Working Groups**

- Executive Head IMPO made an online presentation (on 13th October) on “IMPO's Role in Global Monsoons Research Coordination” in the "Session 5: Showcase of good practices and Trends from HKH Region" as an invited talk at the Regional Climate Data Conference held at Dhaka during 12-13 October 2022.

- Executive Head IMPO actively participated in the Scoping Workshop on the WMO recognized entity supporting El Niño/La Niña information: Concept and Function, held at IITM during 6-8 December 2022. He also functioned as a Rapporteur in the working session on “Development and draft of provisional functions of the WMO entity supporting El Niño/La Niña information” on 8th December 2022.
- IMPO actively participated in the *IITM/IMD Stakeholders Engagement Workshop on Subseasonal Prediction* held at IITM on 30th January 2023 and Executive Head IMPO chaired the 4th Session on Disaster Management.
- IMPO actively participated in the *SASCOP-25* held online on 27th April 2023 and Executive Head IMPO chaired the 4th Session on Disaster Management.

2. *Planned science initiatives and major events:*

- An International Monsoon Summit to be organized by IMPO/IITM jointly with Monsoons Panel in late 2024/early 2025, with the support from WCRP, WWRP and WMO is under consideration.

3. *Active or planned collaborations with other Core Projects, Lighthouse Activities etc.*

- MP is engaged in interactions with SPARC on the role of atmospheric composition in processes relevant for the monsoons, including the Atmospheric Composition and Asian Monsoon (ACAM) activity of SPARC (<https://www.sparc-climate.org/activities/asian-monsoon/>).
- Improving connections with RfS especially with respect to regional monsoon studies.
- Improving connections with ESMO for precipitation observations or modelling activities etc.

3a. *Requests for the WCRP Academy to support your training activities?*

- All training activities and workshops organized by IMPO or involving IMPO can be advertised through the Academy for a better reach out.

4. *Partnerships with projects outside WCRP:*

❖ **Partnership with WWRP and Working Group on Tropical Meteorology Research (WGTMR):**

- Participated in the WWRP’s IMPO Kick-off meeting on 14th September 2022, where in allocation of WWRP funds for IMPO activities was deliberated upon. Subsequently, WWRP transferred 15K CHF initially and later an additional 35K CHF to WCRP Trust Fund for IMPO’s use.
- As a part collaboration between WGTMR and IMPO on monsoon activities, a support request was received from WGTMR Co-chair (Dr. Zhuo Wang), seeking help to connect WGTMR with stakeholders and identify the needs and gaps of S2S monsoon prediction in agriculture planning.
 - In response IMPO contacted several potential users/stakeholders in India and abroad who could help in identifying the needs and gaps in S2S monsoon prediction. A response document was prepared based on the relevant contents/attachments of the email exchanges between IMPO and potential users/stakeholders and the same was forwarded to WGTMR Co-chair.
 - Subsequently, a 2-hour online meeting of potential users/stakeholders of S2S monsoon prediction with Co-chairs of WGTMR and IMPO was successfully organized by IMPO on 28th April 2023 for identifying the needs and gaps in S2S monsoon prediction. The deliberations in the meeting will help define the objectives of a potential pilot project under consideration by WGTMR.
- Explored the possibility of participation of 1 IMPO member and 2 WGTMR members in the WWRP/WCRP S2S Summit 2023 with travel support from WWRP’s allocated funds to IMPO. The same was agreed to by WWRP.

5. Issues and challenges:

- To have a meaningful In-person meeting of the CLIVAR/GEWEX Monsoons Panel with WG-AFM which is proposed to be held during OSC-2023, Kigali more funds need to be allocated.
 - As per the recent current survey, out of the 19 members who have indicated their availability, 11 members require funding to attend the In-person meeting. The allocated 10K CHF by CLIVAR and GEWEX is grossly insufficient.
- As monsoons are of key interest to many of the WCRP sub-structures, it would be helpful to have one JSC member assigned the role of liaison to coordinate pan-WCRP interests on the monsoons and to work with IMPO to pursue them more effectively.
- WCRP's funding of 25K CHF is requested for a 3-day "International Monsoons Summit", which is proposed to be organized by IMPO/IITM jointly with CLIVAR/GEWEX Monsoons Panel and WWRP/WGTMR at Pune in late 2024/early 2025. The brief proposal on the summit which has been endorsed by the Monsoons Panel/WGs is provided in the Appendix-I.

**Proposal for International Monsoons Summit
at IITM, Pune during Late 2024/Early 2025*****Purpose of the Summit:***

A summit on global and regional Monsoons would attract large participation of scientists working on the many aspects of the monsoons and the broad modelling community, as well as stakeholders from monsoon affected regions. Interest in the monsoons also cuts across the WCRP core projects CLIVAR, GEWEX, SPARC, including RfS and CORDEX, in addition to several of the Light House Activities.

This summit will provide a unique opportunity for interactions/collaborations among scientists and other stakeholders to understand monsoon variability and dynamics, including the recent changes/trends in monsoons worldwide, due to global warming. This summit will also showcase WCRP's efforts to consolidate its interests in monsoons through collaboration with the World Weather Research Programme (WWRP) and the establishment of the International Monsoons Project Office (IMPO).

This international summit fits quite well with the WCRP's new Implementation Priorities through, (i) understanding how monsoon rainfall extremes change with climate change, (ii) how current knowledge, data, and information of monsoons can best be used to quantify risk, and (iii) how the current knowledge and information on monsoons can be integrated into risk assessment frameworks.

Importance of the Summit:

Accurate and reliable monsoon predictions have significant socio-economic implications. Nonetheless, understanding monsoonal variability across a wide range of spatiotemporal scales and the development of reliable predictions remains challenging, despite many scientific and technological advances.

The main goal of this summit is to contribute in advancing our understanding of monsoon variability and enhance the present capability for monsoon prediction. For this purpose, the summit welcomes new observational and modeling studies covering regional to global scales, as well as research focusing on coupled processes modulating monsoon systems from synoptic-to-decadal scales. The intended audiences are subject experts, forecasters, researchers, stakeholders, students, members of the Monsoons Panel & its regional WGs and members of WWRP/WGTMR.

Sub-themes for the Summit:

- 1) Monsoons and oceanic processes (El Niño Southern Oscillation (ENSO), Indian Ocean Dipole (IOD), Atlantic zonal and meridional modes, western North Pacific and extra-tropical SSTs)
- 2) Processes relevant to extreme rainfall events in monsoons
- 3) Monsoons in a changing climate
- 4) Prediction of synoptic scale variability
- 5) Model Improvements (resolution, dynamics, initialization etc.)
- 6) Improvements in physical processes such as clouds, convection, boundary layer, etc.
- 7) Verification strategy for model monsoon predictions of extreme events
- 8) Sub-seasonal and seasonal prediction of the regional monsoons - improving skills with higher space-time resolutions & development of applications for Agricultural Management, Flood forecasting, Reservoir Management, Power generation etc.
- 9) Application of ensemble-based forecasts for extreme weather events
- 10) Research-to-operations (R2O) and operations-to-research (O2R) linkages

Structure of the Summit:

The proposed duration of the summit is 3 days. There will be 1 lead talk of 30 minutes and 4 shorter talks of 15 minutes in each session followed by a discussion session of 30 minutes. All talks will be invited and will be region specific so that regional aspects of all monsoons are well covered. All talks will be physically presented at the Summit venue. In addition, there will be a Poster Session in which posters from young Ph.D. Students will be invited. 3 minutes will be provided for introduction of each poster in the poster session.

IMPO/IITM along with Co-chairs of CLIVAR/GEWEX Monsoons Panel & its regional WGs and WWRP/WGTMR monsoon coordinators will convene the session and identify the speakers for the session, in close consultation with other global & regional monsoon experts.

Budget Estimate:

The preliminary budget estimate for the summit is 60K CHF. Support from WCRP is sought for 25K CHF and another 25K CHF will be sought from WMO/WWRP. A major portion of the WCRP and WWRP budget will be used to support travel of the international invited speakers/participants. The possibility of attracting other co-sponsors, within India (IITM/IMD/MoES) will also be explored. It will also be possible to avail IITM's in-kind support to use its facilities for the summit free of charge.