



Minutes of CLIVAR/GEWEX Monsoons Panel Meeting

MEETING INFORMATION

Meeting Number	2025-4	Meeting Title	CLIVAR/GEWEX Monsoons Panel Meeting
Objective/Purpose	Discuss on the Agenda Items and progress on action items		
Time & Date	30 July 2025 13-14:30 UTC	Venue	Microsoft Teams Video Conference

MEETING DETAILS

Chairperson(s)	Thea Turkington (MP Co-Chair)	Rapporteur	E.N. Rajagopal
Attendees	MP: Thea Turkington, Vasubandhu Misra, Samson Hagos, Hui Su, Hanh Nguyen, Satyaban Ratna, Fengfei Song, Hiroshi Takahashi IMPO: E.N. Rajagopal, Susmitha Joseph		
Absentees	MP: Leila Carvalho, Suryachandra Rao A., Annalisa Cherchi, Rondrotiana Barimalala, Jhan-Carlo Espinoza, Luis Brito-Castillo IMPO: Rupakumar Kolli		

ACTIONS

Deadline	Action	Responsible
Ongoing	Continue to build connections with other panels and Light House Activities (LHA) of WCRP and make strong linkages with partner projects.	MP members & Co-Chairs
Ongoing	MP members to participate in WG meetings of their interest and collaborate on any activity.	MP members & Co-Chairs
As and when required by MP	WGs to provide PPT slides of their scientific results for projecting in MP's presentations in CLIVAR/GEWEX SSG and WCRP JSC meetings	WGs, MP Co-chairs & IMPO
Next MP meeting	Members to present their views on the proposed MP's new Observational cum Modelling project planned to be submitted to CLIVAR/GEWEX/WCRP for approval/funding	MP members
Ongoing	Members to actively get involved in GPEX and its Working Groups' activities by providing ideas for the experiment and supporting in the augmentation of existing precipitation datasets.	MP and all WGs

AGENDA AND KEY OUTCOMES

Agenda Point	Description
1	<p>Opening Remarks (Thea):</p> <ul style="list-style-type: none"> Thea (Co-Chair) welcomed all the members to the meeting. She introduced herself as the newly appointed Co-chair of MP. She mentioned that she was looking forward to doing more and contributing to collaboration across our Monsoons region. She also added that WCRP, CLIVAR and GEWEX are increasingly interested in making research have impacts. As her background is more towards the operations, perspective of making all the great research done by members leading to helping people on the ground will become possible. Screenshots of the in-progress online meeting can be found in Appendix-I.
2	<p>Updates from the Regional Working Groups:</p> <p>❖ WG on Asian-Australian Monsoons [WG-AAM]: - (Thea)</p> <p>Activity Highlights:</p> <ul style="list-style-type: none"> Next AAM meeting planned for 7 August (no AAM meeting since last MP meeting) Thea Turkington has (temporarily) taken over from Tieh Yong as co-chair for AAM, although is seeking input from AAM members to take over. This will be discussed at the next meeting. Welcome suggestions from MP members for identifying a Co-chair for AAM. Three of the MP members (Thea, Hui Su and Hanh Nguyen) have been meeting at the Asia Oceania Geosciences Conference (AOGS) in Singapore. Three years previously WG-AAM organised a session on Asian-Australian Monsoons (AAM), but this time it was decided not to go ahead with an AAM session, because there was already a very big monsoon session and WG-AAM did not have anything specific that they wanted to really focus on within this AOGS. <p>Comments from members:</p> <ul style="list-style-type: none"> <i>Hanh Nguyen:</i> Tim Cowan presented a paper on Australian monsoon onset. He could be a potential candidate for the WG-AAM Co-chairship. <i>Hanh Nguyen:</i> Organised two sessions on rainfall extremes and variability in AOGS. They covered all time scales of rainfall, extreme variability, and present and future climates. The sessions were well received by the delegates. <i>Hui Su:</i> The session on Extreme precipitation was of high interest in AOGS. There were many different papers on precipitation forecasts, wind predictions, greenhouse gases and climate extremes. There are lot of sessions which touched upon AI. AI has become relevant for monsoon studies and panel should take note of the same. Hui Su also talked to a number of people about field campaigns in the region. <i>Thea:</i> It would be good to think about what angle the MP would like to do to bring people together on AI for monsoon studies. <p>❖ WG on African Monsoons [WG-AFM] - (Samson):</p> <p>Activity Highlights:</p> <ul style="list-style-type: none"> <i>Samson:</i> The newly reconstituted working group met for the first-time last month, and they also met in subgroups. The main focus of the original meeting was to divide the group into multiple regional groups.

- So last week the East Africa and Central Africa subgroup led by Masilin met. The main focus of the discussion was:
 - Lack of availability of data in Africa.
 - Having some kind of white paper or some kind of review article that documents this challenge and to use them as a discussion resource for advocating for better instrumentation in various regions of Africa.

Comments from members:

- *Rajagopal:* A poll using [Framadate](#) (an open version of Doodle) for the next WG-AFM meeting in August/September has been initiated by the Co-chairs to decide the date of the meeting.

❖ WG on American Monsoons [WG-AMM]: - (Vasu)

Activity Highlights:

- A month ago, the WG-AMM meeting was held, and it was largely an exchange or introductory nature.
- As a part of capacity building exercise, Michelle, the Co-chair has proposed to have a semester on [Teleconnection Patterns and S2S Predictability Course](#) to be offered in her university and it is open to all international students, and it is given some credit as well. Michelle invited everyone in WG-AMM to devote about an hour each for talking about teleconnection patterns and S2S predictability largely focusing on the American monsoons. The course is scheduled during 12th August -9th December 2025. The schedule of lectures is given in Appendix-II.
- There was also some discussion to develop some sort of a white paper, as we are also reaching the 20th anniversary of a similar review paper that was published by [Carolina Vera et al., 2006](#). So, it was felt that it was appropriate to revisit and update that review on what has been achieved and what is yet to be achieved. And so, Michelle is going to send around a draft outline. She mentioned that a lot of the material that was already written up for the WCRP-OSC Concept Paper in 2023-24 could still be utilized with updates from all the members.
- There was also a discussion about sharing forecast information across operational centers across the Americas through Regional Climate Outlook Forums/Regional Climate Centers. WG-AMM will try to bring in more cooperation with the operational forecast centers across all these countries and probably leverage the resources.
- There was some amount of discussion on initiating a South American multi-model ensemble project (like North American Multi Model Ensemble project) for sharing forecasts across South America. There were also discussions on sharing of rainfall data, temperature etc.
- WG-AMM plans to have their next meeting sometime in August.

Comments from members:

- *Rajagopal:* [Teleconnection Patterns and S2S Predictability Course](#) is a joint course of WG-AMM and Universidade Federal de Itajubá (UNIFEI), Brazil and is scheduled during 12th August to 9th December 2025.
- *Thea:* Will there be recording of the lectures of the course?
- *Vasu:* The course is scheduled at an odd hour for many of the US members. So, Michelle has requested for video recordings of the lectures. The questions from attendees will be emailed to the faculty and they would answer them by e-mail.

	<ul style="list-style-type: none"> • <i>Thea</i>: Then these lectures can be shared with others who are interested. It is great to know that the newly reconstituted WG-AMM and the WG-AFM are meeting and starting to think about activities. • <i>Thea</i>: Data sharing is a challenge for a lot of regions. Some countries do not share their data. But they do have these regional climate centers (like that in Brazil) who have one mandatory function of collecting and distributing climate data and often the way that they try to get around the data restriction is to make it password protected or not available to everybody like just select number of people and then generate a gridded data set which is made available to all.
3	<p>Updates from IMPO (Rajagopal):</p> <p>1) Activity Highlights:</p> <ul style="list-style-type: none"> • A Meeting Summary of IWM-8 was drafted and circulated to the co-authors for their suggestions for improvement. Subsequently it was submitted to the Bulletin of American Meteorological Society and the same has been published in the July 2025 issue of the journal. <ul style="list-style-type: none"> ◦ E.N. Rajagopal, R. Krishnan, Sandip Ingle, Yali Luo, Zhuo Wang, Nico Caltabiano, Hindumathi Palanisamy, Liye Li and Lian Xue, 2025: "Advancing the Understanding and Prediction of Monsoons and their Impacts in a Changing Climate", Meeting Summary: Eighth WMO International Workshop on Monsoons (IWM-8), Bulletin of the American Meteorological Society, 106 (7), E1439–E1444. https://doi.org/10.1175/BAMS-D-25-0161.1. ◦ A proposal submitted to publish selected papers from IWM-8 in a Special Issue of Mausam with Prof. Yali Luo, Prof. Zhuo Wang, Drs. R. Krishnan, Thea Turkington, Suryachandra Rao A., V.K. Soni, Rupakumar Kolli and E.N. Rajagopal as Guest Editors has been accepted by the Mausam Editorial Board. • The proposal for appointment of Dr. Thea Turkington as a Co-chair of Monsoons Panel replacing Dr. Suryachandra Rao A. was drafted and submitted to SSGs of CLIVAR and GEWEX for their approval. <ul style="list-style-type: none"> ◦ After the SSGs' approval, the formal appointment letter was issued to Dr. Thea Turkington on 1st July 2025. ◦ A thanking letter was also issued to Dr. Suryachandra Rao Anguluri for his contributions to the Monsoons Panel as its Co-chair during the period January 2022-June 2025. ◦ The necessary modifications were made in the Monsoons Panel webpage and WG-AAM webpage to reflect the changes. • IMPO played a key role in the organization of the Monsoons Panel's online meeting held on 21 May 2025 <ul style="list-style-type: none"> ◦ Organized the MS teams meeting. Video recording was shared with all members after the meeting. ◦ Minutes of the Meeting (MoM) were finalized and circulated. • IMPO created the Doodle poll and notified to all MP members to ascertain the preferable date/time of the next MP meeting in July 2025 during 13-15 UTC. <ul style="list-style-type: none"> ◦ Meeting Link and Agenda were prepared and circulated. • Participated in the WG-AFM general meeting held on 6 June 2025 and presented an overview on Monsoons Panel, CLIVAR, GEWEX and IMPO. • Participated in the IPOs & WCRP Secretariat Group meeting held on 5 June 2025 and provided an update on IMPO activities during the reporting period. <ul style="list-style-type: none"> ◦ The activity highlights and the forward look were also updated in the IPOs & WCRP Secretariat Group Notebook.

	<ul style="list-style-type: none"> • Pan-CLIVAR Meeting: <ul style="list-style-type: none"> ◦ Coordinated with CLIVAR IPO regarding participation of MP members in the Pan-CLIVAR meeting to be held during 22-26 September 2025 at Bali, Indonesia. ◦ Advertised Pan-CLIVAR Meeting 2025 & CLIVAR Symposium is being organized in Bali, Indonesia during 22-26 September 2025 in IMPO Events Page and as scrolling news in IMPO homepage. • A spreadsheet containing the details of members of WG-AAM, WG-AFM and WG-AMM was provided to WCRP for including in the WCRP Database. • Actively involved in the development of new webpages with updated contents for Monsoons Panel and its regional Working Groups for hosting in IMPO website. The new webpages are expected to go live soon. An updated input is still awaited from WG-AMM. • A new OneNote Notebook for the Monsoons Panel was created from the “impo” user account on tropmet.onmicrosoft.com and the new links to the Monsoons Panel Notebook are MP Notebook Edit and MP Notebook View <p>2) Future Activities:</p> <ul style="list-style-type: none"> • IMPO will continue to be involved in the further development of the new webpages of Monsoons Panel and WGs. • IMPO will initiate 2026 MP Membership revisions proposal for the expected four vacancies after the CLIVAR Open call closes in October 2025. • IMPO will initiate the process for drafting MP's 2025 Annual Report early to meet the deadline of 15 December 2025.
4	<p>Discussions on the participation in the Pan-CLIVAR meeting at Bali, Indonesia during 22-26 September 2025 (Rajagopal):</p> <ul style="list-style-type: none"> • Susmitha Joseph will represent IMPO in the meeting and will help in organizing the 7th Session of MP on 23 Sept. during 15:30-17:00 Bali Time (7:30-9:00 UTC). <ul style="list-style-type: none"> ◦ 4 MP members Thea, Vasu Misra, Satyaban and Fengfei Song will be attending in-person. ◦ Donaldi Permana (WG-AAM) is also expected to attend in-person. ◦ Aurel Moise and Sumant Nigam are interested in attending the MP session in-person. ◦ As the session will be a hybrid mode, other MP members from Asia (3), Australia (1) and Europe (1) are expected to attend online as the meeting time is reasonably convenient. Members from Americas may find the time slot too inconvenient. <p>Comments from members:</p> <ul style="list-style-type: none"> • <i>Thea</i>: Looking forward to meeting some of the members in person. In this session we will have our normal Monsoons Panel session, but we can have some additional discussion points that we can send around prior to the meeting, so that we can have a nice discussion while we are there. If anyone coming to Bali from the working groups is also welcome to attend the session as they are going to be there in-person. • <i>Satyaban</i>: Are we planning any cross-panel meeting with other CLIVAR Panels? • <i>Rajagopal</i>: As the currently available as per the Programme at a Glance there are time-slots for cross panel meetings on 25th and 26th September afternoon. As Satyaban is a member of climate dynamics panel (CDP) maybe he can find out if

	<p>CDP members are interested in having a cross-panel meeting with MP on 25th/26th September.</p> <ul style="list-style-type: none"> • <i>Hanh Nguyen</i>: Is registration required for attending the MP session? • <i>Rajagopal</i>: Registration may not be required. IMPO organised the last 2 sessions (Kigali and Sapporo) through its Microsoft Teams and only the WiFi & projection facility at the sites were used. <i>All in-person participants will need to carry their laptops to the meeting for better interaction with online participants.</i> We also will check with ICPO further on the organisational aspects of the MP session at Bali and get back.
5	<p>Discussions on involvement in GPEX and its Working Groups' activities (Lead: Annalisa)</p> <ul style="list-style-type: none"> • Annalisa has will lead this discussion in the next meeting as she is unable to attend today's meeting. <p>Comments from members:</p> <ul style="list-style-type: none"> • <i>Samson</i>: GPEX's WG1 (Coordinated Field Campaigns) has an upcoming field experiment in February 2026. There are a few campaigns planned as part of this this activity. A lot of it is really this time about higher latitude systems, extra tropical cyclones, atmospheric rivers. <ul style="list-style-type: none"> ○ One experiment called AR-RECON focuses on atmospheric rivers. ○ AR_RECON in the Pacific, another one in Europe and third one in Canada are planned for February 2026 ○ There are other field campaigns TIM and TEAMx mainly in Europe the timing is not is not settled yet because funding is being sought. ○ The working group's membership full now. Kaustav Chakraborty from IITM joined the group, a member from National Taiwan University is also joining the WG along with some atmospheric river experts from the European, Vijay Tallapragada from NOAA. We are having regular meetings updating on the upcoming field campaign activities. • <i>Hui Su</i>: GPEX's WG2 (Precipitation Data) are working on to finalize their objectives and upcoming activities in Kyoto, Japan. There will be two sessions related to GPEX in the CMIP Community Workshop 2026 in Kyoto, Japan during 9-13 March 2026. <ul style="list-style-type: none"> ○ As GPEX's focus is on looking at the precipitation process in monsoon, atmospheric rivers, MCS and the Tropic cyclone, a part of the WG2 targeted process studies is to look at the precipitation simulation and predictability. So, MP and the monsoon working group members are welcome to join the CMIP Workshop and also the GPEX WG2 precipitation data sessions. ○ The WG2 also wants to organize a few campaigns to understand precipitation extremes, after getting funding from Hong Kong and also from mainland China. The observation platform is likely to drones and radars onboard research ship. ○ WGS2 has plans for conducting cloud seeding experiments, measurement of cloud properties, precipitation and aerosol properties using the available aircrafts in China. Few campaigns over Southeast Asian monsoon region targeting MJO, S2S predictions and extreme weather in the context of the monsoon environment are being thought about. ○ The WG2 welcomes scientists from countries including the Monsoon Panel to participate in the campaign with special ground measurements over their region. If people are interested a joint science plan can be generated to identify the instrumentation required, when and where conduct the aircraft/ship campaigns, etc.

	<ul style="list-style-type: none"> <i>Fengfei Song</i>: Interested in this the WG2 campaigns as he is currently working on MCS in the monsoon region. Currently his comparison of IMERG versions 6 and 7 shows big difference between the two. The comparison of the two versions with the field campaign datasets (like DYNAMO, GOAMAZON and other American DOE datasets) showed very big differences between IMERG and field campaign datasets. <i>Thea</i>: It sounds very interesting. It would be also good to raise this in the 7th August meeting of the WG-AAM to get more people involved. It would also depend on what the question you want to answer, which sort of countries we should be targeting, etc.
6	<p>Discussions on the proposed MP's new Observational cum Modelling project planned to be submitted to CLIVAR/GEWEX/WCRP for approval/ funding (Lead: Surya)</p> <ul style="list-style-type: none"> As Surya has been unable to draft the proposal and also as he is absent in today's meeting, discussion on this agenda item is postponed to the next MP meeting.
7	<p>Open Discussion on the ongoing MP & WG activities (All)</p> <ul style="list-style-type: none"> As all the points were discussed and commented under the previous agenda items, there was nothing more to discuss here.
8	<p>Any other business:</p> <ul style="list-style-type: none"> <i>Rajagopal</i>: Stepping down as Executive Head of IMPO on 6th August 2025. Susmitha will be in-charge till the next Executive Head is appointed. Rajagopal to be an Honorary Scientist of IMPO for another year and will provide support to IMPO to the extent possible remotely. <i>Thea</i>: Thanks, from the panel for all your support for the last 3 years. Leila did mention about how supportive and helpful Rajagopal was in running things for the panel. <i>Satyaban</i>: Thank you Rajagopal, for all the support after I joined the Monsoon Panels for the various activities, and I also got opportunity to take part in IWM-8 meetings. Thank you very much. <i>Vasu</i>: I used to look forward to emails from you every morning. Thank you very much and the very best wishes for your future endeavors and hope our roads cross again and we meet somewhere sometime. <i>Hui Su</i>: Thank you, Rajagopal. Will miss your emails as I am used to getting so many emails from you. My best wishes for the future. <i>Thea</i>: We will wave hands at the end of this meeting for creating the 15-second MP's video message for the Pan-CLIVAR meeting.
9	<p>Date/time of next meeting:</p> <p>The 7th Session of Monsoons Panel will be organized on 23rd September 2025 at Bali, Indonesia during 7:30-9:00 UTC in hybrid mode.</p>

NEXT MEETING

Meeting Number	2025-5	Meeting Time & Date	07:30-09:00 UTC 23 rd September 2025
Location	Bali, Indonesia/MS Teams Online Meeting		

Monsoons Panel Notebook

MP Meeting Agenda	MP: 2025-4 (30 July 2025)
MP Webinar Series	MP: 2025-3 (21 May 2025)
Shared Folder	MP: 2025-2 (11 March 2025)
MP Annual Reports	MP: 2025-1 (22 Jan. 2025)
MP Updates	MP: 2024-7 (12 Novemb...
MP Meeting Minutes	MP: 2024-6 (13 Sept2024)
WG-AAM Updates	MP: 2024-5 (11 July 2024)
WG-AAM Meeting M...	MP: 2024-4 (10 June 202...
WG-AFM Updates	MP: 2024-3 (4 April 2024)
WG-AFM Meeting M...	MP: 2024-25pl (20 Feb 2...
WG-AMM Updates	MP: 2024-1 (23 Jan 2024)
WG-AMM Meeting M...	MP: 2023-5 (27 Oct 2023)
IMPO Updates	MP: 2023-4 (1 Aug. 2023)
	MP: 2023-3 (1 June 2023)
	MP: 2023-2 (31 Mar. 2023)
	MP: 2023-1 (31 Jan. 2023)
	MP: 2022-3 (22 Nov. 202...

CLIVAR/GEWEX Monsoons Panel (MP: 2025-4)
Online Meeting
30 July 2025 (13-15 UTC)
Agenda

1. Opening remarks (Leila & Thea)
2. Updates from WGS:
 - WG-AAM (Thea)
 - WG-AFM (Rondro)
 - WG-AMM (Leila)
3. Updates from IMPO (Rajagopal)
4. Discussions on the participation in the Pan-CLIVAR meeting at Bali, Indonesia during 22-26 September 2025.
5. Discussions on involvement in GPEX and its Working Groups' activities (Lead: Annalisa)
6. Discussions on the proposed MP's new Observational cum Modelling project planned to be submitted to CLIVAR/GEWEX/WCRP for approval/funding (All)
7. Open Discussion on the ongoing MP & WG activities (All)
8. Any other business
9. Date/time of next meeting (Leila/Thea)

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 Meeting ID: 384 897 815 738 5
 Passcode: KN6RS3eE



Screenshots of the in-progress online MP meeting held on 30th July 2025

Schedule of [Teleconnection Patterns and S2S Predictability Course](#)

	Date	Topic	Presenter(s)	Obs
1	12/08	Introduction to the course and basic concepts	Michelle, Ali, Anita and Márcia	CONFIRMED
2	19/08	Basic Features of NAM monsoon	Vasu / Luis	CONFIRMED
3	26/08	Basic Features of SAM Monsoon	Iracema	CONFIRMED RegCM workshop. Mi and Moet will be in Italy. We can previously record the class
4	02/09	Convergence zones	Márcia	
5	09/09	Teleconnections a general overview	Tércio Ambrizzi	CONFIRMED
6	16/09	Statistical techniques to study teleconnections and how to define climate indices	Leila	CONFIRMED
7	23/09	El Niño Flavours / PSA / PDO	Renata	CONFIRMED
8	30/09	AMO	marilia.shimizu	CONFIRMED
9	14/10	NAO and PNA (North Atlantic)		
10	21/10	IOD (Indian Ocean)	Marisol	CONFIRMED - maybe we need to change the date
11	04/11	TSA and TNA (Tropical Atlantic)	Luciano Pezzi	CONFIRMED
12	11/11	AAO / AO	Fernanda	CONFIRMED
13	18/11	Teleconnection Patterns and GCMs	Rose / Josefina	CONFIRMED
14	25/11	SAD (South Atlantic)	Anita	CONFIRMED
15	02/12	MJO (Tropics)	Charles Jones	CONFIRMED
16	09/12	S2S forecast	Caio	CONFIRMED