

**Meeting Notes
with Recommendations**

AGENDA

1. Opening and introduction
2. Adoption of agenda
3. Review:
 - a. membership, terms of reference, working arrangements
 - b. progress of GWEF/1 and GWEF/2 actions
 - c. outcomes of recent events
4. Definitions related to GWE
5. Elaborating a common vision
6. Inputs to WMO, WB and HMEI processes
7. Communication and outreach
8. Time, place, agenda and attendees of next meeting
9. Any other business
10. Closure

1. Opening

1.1. The 3rd GWE Forum meeting (GWEF-3) was held on October 12-13, 2018 in Amsterdam immediately after the closure of the 2018 Global Weather Enterprise Conference (GWEC). Mr. Patrick Bénichou, President of MFI, chaired the meeting in his role as co-chair of the GWEF.

1.2. The meeting was open for participants of the GWEC. The GWEF/3 was attended by 9 of its members, members of the GWE Coordination Group, invited experts, and observers. The list of participants is in **Annex 1**.

2. Progress reports on the agreed tasks

2.1. Contributions on most of the agreed tasks were submitted prior the meeting. The full set of documents is available on the GWE sharing website.

Task 1: Make all relevant information flow more freely by removing barriers and by supporting a culture that is user oriented and includes all PPA sectors.

Task 1, Sub-Task 1.1. – Develop a market place concept for data exchange/sharing. The revised concept of the Weather Data Exchange (WDX) was presented to the GWEF members. The objective of the WDX is to make the largest amount of data available to the largest amount of people in the easiest possible way. The Forum had a lively wide-ranging discussion of the WDX concept. It discussed pros and cons of several key assumptions that the WDX concept is currently based on, specifically:

- whether or not private sector companies will participate in the WDX or not. It was clarified that, according to the current design, the NMHSs are primary actors in the WDX, however, WDX is envisaged to engage actors from private sector and academia;
- WDX will incentivise developing countries to participate in both upload and download of data and will rationalize their use of the available data;
- NWP output data is currently not subject of the exchange under the proposed system;
- the possible licencing of the data users, e.g., through licence “issued” by the relevant NMHSs (subject to national legal frameworks);
- the role and opportunities for academic sector and its access to the WDX;
- potential secondary market of the weather data, and how to manage related risks.

The forum further discussed the potential way to submit WDX ideas and recommendation to the WMO process as part of the ongoing discussion on ‘emerging data challenges’. An important milestone in this regard was the meeting of the WMO Executive Council Working Group on Strategic and Operational Planning (WG-SOP) in March 2019. This would require the availability of a mature proposal and realistic expectations from the WMO process, such as an agreement on piloting the proposed mechanism to allow evaluation its operational and economic impacts.

The Forum agreed:

- a) to continue this discussion online using Slack to ensure all questions and issues could be raised and addressed and that the discussion could be visible to all members of the Forum.
- b) to involve an economist into the discussion to reinforce the design of the WDX.

- c) to keep the WDX discussion among the GWEF membership only for now before this idea can be shared with a wider audience.

Task 1, Sub-Task 1.2. - Review WMO data policy Resolutions 25, 40, 60 and identify mechanisms to update, enlarge and enforce. The task lead reported that the review and roadmap on the data policy have been done. The report has been submitted to the GWE Forum participants. Therefore, the task can be considered completed.

Task 1, Sub-Task 1.3. - Monitor current exchange in terms of data quality and quantity to identify and inform major deficiencies; suggest correction measures.

The task will be facilitated by the WIGOS data quality monitoring system (WDQMS) which has been conducted as a pilot project. Initially, this system will allow systematic real-time monitoring of the data availability, quality and timeliness of the surface-based observations. In addition, WMO is working on the new concept and requirements for the Global Basic Observing Network (GBON) which will be submitted for approval by the Congress in 2019.

More information on those developments will be presented to the next meeting of the Forum.

Task 1, Sub-Task 1.4. - Set, revise and enforce data and information standards.

The focus of this activity is on reviewing standards related to observational practices to help increase the quality control for standardization of the observation networks and practices by NMHSs and other data providers in the enterprise. This work was presented during the CIMO-17 session. Since the question of the quality of weather forecast information was not originally included in the scope of the work, the Forum suggested creating a separate task for this purpose.

The Forum agreed:

- a) To create Task 1.5 that would focus on methodology for the evaluation of forecast quality to allow validation of different forecast providers and eventual “certification” (e.g., similar to the QMS). A Forum member to lead this task needs to be identified.
- b) Further information gathering will take place prior to the next Forum meeting to understand better current practices and issues regarding (observational) data and information standards and forecast validation/verification possibilities.

Task 2: Developing and maintaining workforce for the GWE

Task 2, Sub-Task 2.1. - Expand training (by academia predominantly) and enhance skills and competencies in the whole global weather enterprise value chain.

The challenge of attracting top quality students to the atmospheric science and adjust curriculum to the demands of the evolving GWE remain highly important. The review presented in July 2018 will be updated with the information received during several important discussions and organized workshops with the potential employers and during the discussions in Amsterdam. The Forum highlighted the importance of involving the developing world in this discussion as a sustained work force often limits success in these nations; the need to improve statistics on the professional education and training, etc. The white paper on Task 2 will include discussion of “lifelong learning” given the transdisciplinary and evolving skill sets needed across the GWE, and the roles of the traditional university and the WMO regional training centers. It was suggested that as part of the academic curriculum people could be sent for on-job training “on the ground” working for NGOs and various agencies with the local presence. The Forum will provide

the comments to the authors offline. Based on this feedback, the white paper will be revised and then published for wider audience.

The Forum agreed:

- a) To submit their comments to the authors of the white paper.
- b) To publish the paper on the website of the Forum with a goal of completion for the GWEF meeting in Singapore in March 2019.

Task 3: Strengthening application and basic research and speeding the deployment of proven applied science, especially in the areas where it strengthens the GWE

Task 3, Sub-Task 3.1. – Regarding Task 3, the Forum had a wide-ranging discussion on the background and motivation. DRR remains one of the areas where applied science can and should be employed, and where it is especially visible what can be done with even limited resources and proper training of people. A further point raised (related to Task 2) was the importance of recognising the complexity of the educational component required for the GWE to function smoothly, especially in the developing world. No one size fits all as successfully building a local enduring work force depends sensitively on each local situation. A further point was how best to quantify the worth of weather information in terms of dollar value of averted loss, and the value of human suffering and loss of life mitigated. In addition, the Forum discussed how local networks function to recognise, request and act on anticipatory Disaster Risk Reduction and how they can best be supported.

The Forum agreed:

- a) The possibility of piloting some of the ideas of applying science to DRR under the World Bank and other development partners' projects would be explored, as it would allow incorporation of academic knowledge into investment/operational work.
- b) To advance the discussion of quantifying the worth of weather information both in financial value and in humanitarian value, an open meeting will be convened to discuss the state of understanding of this issue. This should include the finance and the development sectors.
- c) A Scoping Study is proposed on an example of better use of existing weather information. This would consider how to quantify where information in longer lead-time probabilistic forecasts exists, not from a "best available" point of view but from an "adequate for purpose" viewpoint. And where information exists, are there practitioners both able to and interested in exploiting it?

A Scoping Study is proposed to establish the extent to which there is a bottle neck between knowledge creation and its incorporation into operational forecasting, documenting challenges in encouraging and exploiting "blue skies" research. This will inform the development of ideas regarding creation of Innovation Hubs for the GWE.

Task 4: Advance work on sustainable business models

Task 4, Sub-Task 4.1. - Development partners to investigate and promote implementation of business models that focus on data provision and service delivery in a long-term sustainable way. The topic was presented during the GWE Conference and triggered an interesting discussion around the sustainability of partnerships. The World Bank updated the Forum on several initiatives that have been launched specifically to get a better understanding of the potential of the PPE and sustainable business models for the NMHSs (Myanmar – piloting public-private

engagement where private company would help NMHSs commercialize their services based on the infrastructure and capacity provided by the private company; Nepal – a in-depth study of possible business models applicable to NMHSs which should be finalized by InterMET Asia 2019, and econcept – analytical work with the goal of developing a guidance for potential PPE scenarios based on the example of several countries which will be published early next year).

The Forum agreed:

- a) To share the outcomes of all the pilots for further discussion

Sub-Task 4.2. - Complement the above by proposal/methodology for systemic performance assessment of the service delivery and corrective actions. The discussion was postponed till the next GWEF meeting.

3. Discussion on Definitions pertinent to GWE

Considering the draft of the Glossary of terms that was distributed for the review (based on the definitions included in the WMO Policy Framework on PPE), the Forum suggested to add a definition of the “public sector”, better define what “water” stands for in the context of the GWE (and whether it should be replaced by “hydrology” or not). The proposed definitions were agreed by the Forum with the understanding that this is a work in progress and refinement of the definitions should be possible in the future.

4. Vision Statement

The appreciated the draft vision statement prepared by Brian assisted by Alan as a good start. The following comments and proposals were noted:

- the text will have to be slightly revised and shortened to improve readability;
- more stress should be placed on “creating new/additional value”.
- Clarify the purpose of the vision statement - 'vision for what' - GWE or GWEF - preference for vision for GWEF;
- need to distinguish between 'vision' and 'mission' statement;
- make it appealing for visitors to the Forum (including the new website that would soon be open).

The Forum agreed:

- a) the task lead to prepare a new version reflecting the comments received at GWEF/3 meeting. The next version should be circulated to the Forum members with a view to collect comments by 30 November 2018.

5. Inputs to WMO, WB and HMEI Processes

WMO: in preparation to the World Meteorological Congress, the document that would require inputs from the Forum, would go through consultations before the end of 2018/early 2019. The draft “Geneva Declaration” (a high-level policy document announcing the WMO policy regarding PPE) will be posted for comments by GWE stakeholders in January 2019. This Declaration is to be approved by the Congress in June 2019. All Congress documents have to be finalized and submitted by April 2019. The proposal for including the WDX in the agenda should be considered by the WG-SOP meeting in March 2019. Thus, the deadline for finalising input on the WDX for this purpose would be end of February 2019.

WB: a) The MOU on the GWE Forum should be finalized between all parties (including WMO, HMEI, GFDRR and IAMAS). b) Several of the findings of the tasks appear to be relevant to World Bank activities; need to discuss ways to integrate the Forum work and that of the World bank group need to be considered.

6. Communication and outreach

The website on the GWE Forum will be launched before the next GWEF meeting. It will be used as a platform to inform people of the latest discussions held during the meetings, upcoming events, and announcements. It will have an information on the Forum members (strictly according to their desire), contact information. Potentially, an option for Q&A can be added to the website. The GWEF members were greatly appreciative of the support of the web site for the Forum.

7. Next Meetings:

AMS – January 6-10,2019 (Phoenix, AZ): it will be a mix of f2f and webex meeting.

InterMET Asia 2019 (Singapore) – possible dates 25 and 26 March prior to the InterMET Asia which takes place on March 27-28, 2019: it will be a f2f meeting.

8. Membership:

One vacant seat remains on the Forum for academic sector. A final effort will be made to contact the nominated member from China that had been invited to attend. If she is not interested, members of the Forum together with the Coordination Group will try to find a suitable candidate to fill it in using their networks. Additionally, the Forum members discussed the need to make the Forum more inclusive but do it in a way that would contribute to the quality of discussions held during the meetings. The Forum can continue bringing new participants on a “when it is required” basis. It was stressed that membership implies a certain level of commitment. This discussion will be continued offline.

APPENDIX 1**GWEF/3 LIST OF PARTICIPANTS**

	Name	Position	E-mail	Fri 12 Oct	Sat 13 Oct
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Updated List of tasks agreed by GWEF/3 Meeting, 12-13 October 2018

Main theme: Identify the attributes of, and ways to remove the barriers to, a 21 st century weather information service			
Task 1: Make all relevant information flow more freely by removing barriers and by supporting a culture that is user oriented and includes all PPA sectors.			ALL
Sub-task 1.1	Develop a market place concept for data exchange/sharing	Peter Platzer, Neil	Pr Pu
Sub-task 1.3	Monitor current exchange in terms of data quality and quantity to identify and inform major deficiencies; suggest correction measures	Dimitar	Pu
Sub-task 1.4	[TO BE REVISED] Set, revise and enforce data and information standards	Alessandra, Brian, Alan and Dimitar	Pu, Pr
Sub-task 1.5	[NEW] Weather forecast quality control and "certification"	Erland	Ac
Task 2: Developing and maintaining workforce for the GWE			Ac
Sub-task 2.1	Expand training (by academia predominantly) and enhance skills and competencies in the whole global weather enterprise value chain.	Dave and Erland	Ac
Task 3: Strengthening application and basic research and speeding the deployment of proven applied science, especially in the areas where it strengthens the GWE			Ac
Sub-task 3.1	Develop ideas	Lenny and Dave	Ac
Task 4: Advance work on sustainable business models			
Sub-task 4.1	Development partners to investigate and promote implementation of business models that focus on data provision and service delivery in a long-term sustainable way	Patrick, Vladimir and Dimitar	Pr, Pu
Sub-task 4.2	Complement the above by proposal/methodology for systemic performance assessment of the service delivery and corrective actions	Dimitar	Pu