Minutes IGWCO CoP Meeting 27 November 2024

Attendants

Name	Affiliation
Wolfgang Grabs	Co-Chair IGWCO CoP
Toshio Koike	ICHARM
Peter van Oevelen	IGPO and Co-Chair IGWCO CoP

Agenda

1. Welcome to participants
2. Overview of current activities and results from members
3. Cooperation between IGWCO and GEO
4. Suggestions on how to improve contributions to IGWCO by members and increasing the visibility of IGWCO
5. Suggestions for a successor to Wolfgang as co-chair of IGWCO
6. Any other business

Summary

Item 1. Welcome to participants

Dr. Grabs, Dr. van Oevelen, and Prof. Koike participated in the call, with Dr. Dominique Bérod of the World Meteorological Organization (WMO) unable to join until the conclusion of the call.

Item 2. Overview of member activities and their results

Peter van Oevelen discussed three new Global Energy and Water Exchanges (GEWEX) initiatives that might align with IGWCO's themes and priorities. The new GEWEX Groundwater Network (GGN, https://www.gewex.org/ggn/), run by Stefan Kollet and Laura Condon, had a dedicated meeting before the 9th GEWEX Open Science Conference this past July. GGN is focused on linking hydrogeology and groundwater modeling to Earth system models in GEWEX and beyond, hopefully bringing different communities together to work on how to model groundwater.

The second activity was prompted by the launch of the Surface Water and Ocean Topography (SWOT) mission, and creates a link to surface water within GEWEX. The new initiative, led by Cedric David, is called RivEx, and it seeks to establish a common strategy for comparing river models. RivEx plans to launch a dedicated data gathering and model comparison campaign that leverages recent progress in surface water modeling and remote sensing to provide physical constraints on the joint monitoring, understanding, and prediction of Earth's surface water cycle.

A GEWEX goal is to make groundwater, soil, and surface water consistent, as they are linked.

The third program is the GEWEX Land-Atmosphere Feedback Observatories (GLAFOs, https://gewex.org/gewex-content/uploads/2021/06/2105_L-AI_Workshop_wulfmeyer-et-al_GLAFO.pdf and https://gewex.org/gewex-content/files_mf/1583952472Feb2020.pdf), and it may be of interest from an observations perspective. It is a network of high-resolution, bedrock-to-boundary-layer observations in 3-D, with 5 sites currently operational.

This is set to expand, but depends somewhat on the cost of equipment. Japan would be an ideal site for one of the next GLAFOs.

Also of note from the 9th GEWEX Open Science Conference was the participation of stakeholders in the meeting: it was eye-opening for both sides, with the stakeholders enjoying the exposure to the science while the scientists were pleased to see how that relationship could work. For IGWCO, it could be time to make the leap from science fundamentals to supporting society in terms of water security.

Toshio Koike had three updates. The International Centre for Water Hazard and Risk Management (ICHARM) is linked to Intergovernmental Hydrological Programme (IHP), and IHP celebrates its 50th anniversary next year. At the end of March, a ceremonial meeting will be held in Japan in advance of the 50th anniversary meeting in Paris in June. Prof. Koike is a member of the steering committee, and the Japanese hydrology community is currently focused on the planning.

The second update is related to stakeholder involvement in the 9th GEWEX Open Science Conference. In Japan, an innovative framework has emerged from the government's new flood management policy, where all water-related Ministries work together on an initiative called Water Integrated Disaster Resilience and Sustainability for All. It is based on large ensemble climate projections and downscaling, and Prof. Koike chairs the advisory council. Scientific knowledge will contribute to the new flood management policy, which embodies the idea of collaboration between the scientific community and stakeholders.

The last point is that GEO, the Group on Earth Observations, is working not only on data observations and integration, but also on artificial intelligence for all. Prof. Koike has been invited to help with this initiative, and leads the water cycle portion: there are 5 subgroups within the water cycle group, and they are now discussing an integrated approach and trying to secure funding. The Japanese chair for GEO is Prof. Muraoka of the University of Tokyo.

These items are of interest for the future of IGWCO.

Item 3. <u>Cooperation between IGWCO and GEO</u>

A conference call took place in November of 2023 between a GEO program director and IGWCO representatives, and the program director was interested in further integrating IGWCO into GEO. She encouraged IGWCO to draft a 2-page document and input was solicited from the IGWCO group early in 2024. Submission of the 2-pager by the November 15, 2024 deadline did unfortunately not move forward. Despite several reminders to members of IGWCO, no contributions or feedback was received.

Item 4. <u>Suggestions on how to improve contributions to IGWCO by members and increasing the visibility of IGWCO</u>

One way to both increase the visibility of IGWCO and engage its members is to keep an updated website. **Contributions from the group are welcome.**

Dr. van Oevelen remarked that finding the added value of IGWCO could rally the community. The 2014 report on the GEO Water Strategy was a success, but also in this field, no inputs were received from members of the group for an update or writing a new water strategy that would reflect the developments in the past ten years and to provide a strategic outlook towards anticipated developments in the water sector and response strategies. Due to rapid developments in the water sector, suggestions made three years ago for the development of a global water security tool also received no inputs from IGWCO members and may now be offering minimal value in a

crowded field of water security efforts. For GEWEX, IGWCO has remained a way to place some GEWEX research in a broader context and a means to create collaboration. One direction to go in is to canvas members individually, engage them at various events, and try to move forward with rebuilding the community.

Dr. Grabs pointed out that the online format of the meetings might be hurting collaboration; there hasn't been a physical meeting of IGWCO since 2017. Usually, such meetings had been organized around other conferences to ensure that a critical number of persons involved in IGWCO had been present to reduce travel costs and foster cooperation and progress in IGWCO. He further emphasized that without active participation from IGWCO members, this Community of Practice cannot strive in future as it is meant to be a true community effort not hinging largely on efforts made by the co-chairs.

Strategic outreach is needed for the group. IGWCO could offer input on integrating science for IHP, establishing a direct link to the IHP program. Another approach would be developing a complementary method to disaster prevention, forecasting for all, and other World Meteorological Organization (WMO) programs.
A one-page conclusion paper can be drafted following this meeting with a short action plan including the following points: outreach, potential areas of added value, and possible ways forward. See Annex 1 for the Scoping Note from Prof. Koike.

Prof. Koike emphasized identifying and defining the roles of IGWCO in the one-page document. His understanding is that GEWEX focuses on water and energy, IHP focuses on water science and education, and GEO focuses on Earth observations. IGWCO might be a bridge from science and education to observation on a global scale, which would also distinguish it from other groups doing this regionally. **Prof. Koike will attempt to create a slide illustrating the idea of the bridge, perhaps including the different types of integration that should be happening and the major players in each sphere.** Please see Annex 2 for an enlarged version of the "Roles of IGWCO" graphic featured in the Scoping Note from Prof. Koike.

Item 5. Suggestions for a successor to Wolfgang Grabs as co-chair of IGWCO

Dr. Grabs will be stepping down as co-chair of IGWCO following this meeting. A call to find a candidate had been issued a few years back with no response. He urged members of IGWCO to nominate suitable candidates at the earliest. After serving in the position for about 7 years, he is unable to maintain his current level of involvement due to personal obligations. He will continue to contribute, especially with items discussed during this meeting, but he will no longer be at the forefront, and hopes that young researchers with new ideas will step forward. Dr. van Oevelen extends his heartfelt thanks for the more than 30 years of Wolfgang's service, noting his contributions to the group. His leadership will be missed.

Item 6. Any other business

No other business to report.

Thanks to all those who participated!

Wolfgang Grabs and Peter van Oevelen

Action Items

- All members: each IGWCO is asked to suggest potential candidates for the co-chair position
- Wolfgang Grabs and Peter van Oevelen will draft a one-page document outlining an action plan for IGWCO, including a definition of the role of IGWCO, an outreach strategy, potential areas of added value, and possible ways forward (see Annex 1 for scoping note from Prof. Koike)
- Toshio Koike will, time-permitting, create a slide illustrating the concept of IGWCO as a bridge from science and education to observations (see Annex 2)
- All members: each IGWCO member is asked to review the IGWCO website (https://www.igwco.org/) and send an email to gewex@gewex.org with anything you'd like to see added. Updates on IGWCO regional activities, perhaps consisting of a short introduction to the activity and a link to the relevant website, are also welcome
- The next meeting will be held sometime in March. IGWCO will send a Doodle poll and create a list of expected participants based on Doodle poll information

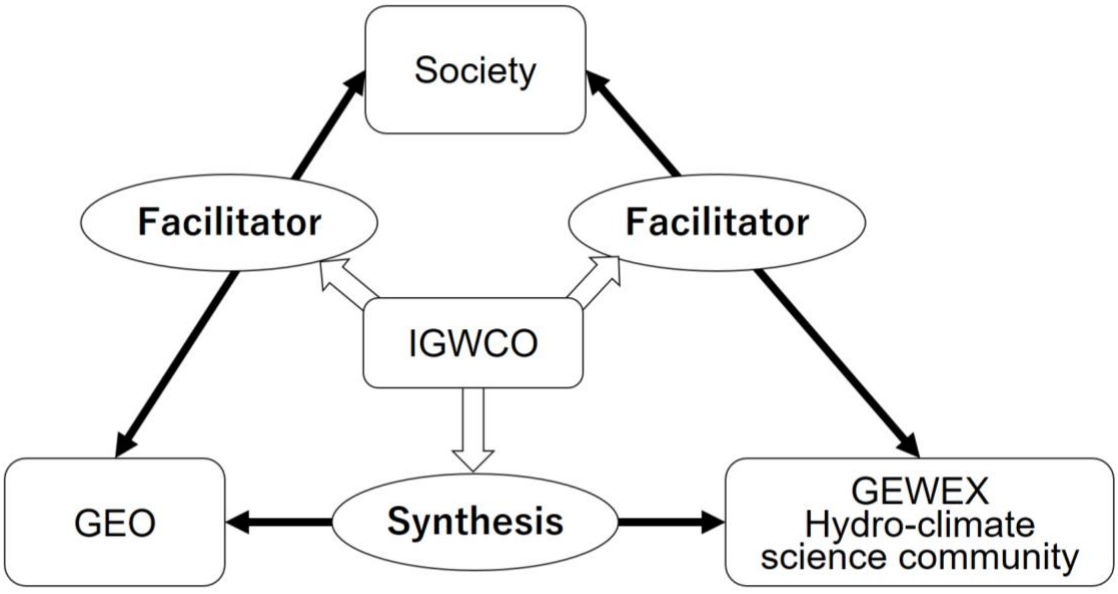
IGWCO: Bridging between GEO and GEWEX and Hydro-climate studies

Water, circulating in the oceans, the atmosphere, and on land, plays an important role in redistributing solar energy to every corner of the planet and in creating and maintaining diverse climates and ecosystems. Living on this aqua-planet Earth, society has made ceaseless efforts to use water efficiently and reduce the risk of water-related disasters. These efforts are linked to food and energy security, urban and ecological environments, and quality of life.

Society is now facing climate change, including hydro-climatological extremes and regime shifts. To address these issues, hydro-climate observations, modeling, and prediction should be integrated and the results interpreted in terms of societal benefits to support cross-sectoral decision-making to strengthen climate and water resilience and enable sustainable development.

Today, the science community is struggling to integrate knowledge across disciplines. The main challenge is the exploration, collection, archiving and search of scientific data and information. Prediction and simulation, visualization, data integration, and information fusion are also major challenges. In such a situation, it is very difficult to communicate and collaborate across disciplines. The IGWCO will act as a bridge between the GEO and GEWEX and the other hydro-climate science societies to promote knowledge integration and synthesis.

There is still a gap between science and society. To fill this gap, the IGWCO will act as a facilitator, not just as a "master of ceremony" but as "catalytic being," who can provide expert advice based on a broad range of scientific knowledge in the local context. Then, user needs and local data and knowledge will then be transferred from society to the science community. As a result, new frameworks can be proposed and fresh learning opportunities through integrated scientific knowledge can be shared with the society.



ANNEX 2. “Roles of IGWCO” Slide from Prof. Koike