Minutes IGWCO CoP Meeting 18 April 2023

Attendants

Name	Affiliation
Dominique Bérod	WMO
Stephan Dietrich	ICWRGC
Wolfgang Grabs	Co-Chair IGWCO CoP
Eva Haas	EOMAP
George Huffman	NASA Goddard Space Flight Center
Toshio Koike	ICHARM
Richard Lawford	Morgan State University and former IGWCO Co-Chair
Ulrich Looser	GRDC
Lijuan Shi	China Meteorological Administration
Nick van de Giesen	Delft University of Technology
Peter van Oevelen	IGPO and Co-Chair IGWCO CoP

Agenda

1. Update of recent developments by participants
2. New IGWCO-related publications
3. Outcomes of the UN water conference (All)
4. Steps towards the writing of the new GEOSS water strategy
5. Steps towards the development of a global water security monitoring tool
6. Inputs to the IGWCO website
7. Any other business

Summary

Given the time constraints of meeting participants, agenda items two and four will be addressed first, with the other points following as appropriate.

Douglas Cripe and Toshio Koike are unable to participate in the call and send their regrets, as both are traveling.

Item 2. <u>New IGWCO-related publications</u>

There are two new IGWCO-related publications, both with a basis in the Global Earth Observation System of Systems (GEOSS) Water Strategy. One is “Implementing the GEOSS Water Strategy: From Observations to Decisions” in the *International Journal of Digital Earth*, and the other is “A data-oriented Strategy to support water resource managers and researchers” in the *Journal of the American Water Resources Association*. Rick Lawford’s efforts saw the two papers published.

Item 4. <u>Steps towards the writing of the new GEOSS water strategy</u>

A review of the GEOSS Water Strategy has been conducted, and it includes issues that have been completed, issues that are no longer relevant, issues that could not be completed or are outstanding, and most importantly, issues that will be important until the year 2035. The next step is to form an advisory panel on the GEOSS Water Strategy to deliver some succinct points on the direction that a new, forward-looking water strategy (one built on the current water strategy) should go. We seek collaborators who have experience and interest in these areas to

help draft the initial points on new directions, and each IGWCO member is asked to propose someone within their network who might be interested in working on them. Some ideas include individuals from GEO water initiatives, such as the Group on Earth Observations (GEO) Global Water Sustainability (GEOGloWS) program or AquaWatch, or the regional GEO initiatives, such as AmeriGEO or AfriGEO. Ulrich Looser has agreed to contact Florian Franziskakis (ffranziskakis@geosec.org) from the GEO Secretariat, an individual suggested by Dr. Bérod, as he may be able to provide support and input on what kinds of relevant water activities are occurring in GEO. This was confirmed at the end of call as well.

Wolfgang Grabs and Peter van Oevelen will draft a one-page document outlining the expectations for the advisory panel so that potential members can understand the scope of the task and its time-limited nature.

The new water strategy will be a core strategy of perhaps 20-30 pages that sets the stage for the next 15 years or so. 20 months is the desired timeline to complete this effort. The new strategy should not be a stand-alone effort, and attempts will be made to include other programs; it is important to have co-owners to increase traction. Including some terminology from the new GEO Post-2025 Strategy (https://earthobservations.org/geo_post25.php and https://earthobservations.org/documents/post_2025/202306_geo_post_2025_strategy_draft.pdf) might help the effort fall more clearly under the GEO umbrella.

Item 5. Steps towards the development of a global water security monitoring tool

The global water security monitoring tool, discussed in past calls, will focus on water security in terms of water availability rather than extreme events. Dominique Bérod's work at WMO focuses on supporting hazard communications and early warning systems with observing and information systems. The proposed global water security monitoring system will give an overview on available water resources and changing water resources. This is similar to recent work at WMO with the Hydrological Status and Outlook System (HydroSOS). A pilot global water resources report was produced for the year 2021 (available at https://library.wmo.int/doc_num.php?explnum_id=11586) using global modeling. The next version of the *State of Global Water Resources* report will be published in the latter portion of this year, assessing the year 2022.

This is similar to the IGWCO approach, which will look to modeling and existing robust tools rather than databases to provide periodic reports on overviews of changes in water availability.

The global water security monitoring tool would include the activities of other organizations, especially those of WMO. The focus on *global* water resource assessment will distinguish the global water security monitoring tool from WMO's current portfolio of water resource assessment activities, which currently help to build the global modeling community and facilitate stakeholder access to information. Adding value is an important proposition, and the global water security monitoring tool could do that by identifying what's useful within a continuously-increasing amount of data.

Following the theme of adding value, one concept of the tool is that it could, for example, point out a difference in precipitation levels from the long-term average in a region, and the resulting change in available water resources. This would be accompanied by uncertainty estimates and it would also identify a selection of models that would add value, rather than a compilation of multiple models. This type of tool is not currently available at a global or regional level.

Another way to add value is through the curation of data. Users are looking for fitness of use, identifying which data set best suits their purpose, so perhaps one function could be a curation of assessments. Offering a couple coherent tools within a common framework to stakeholders and decision makers for assessments that have their own risks and uncertainties would also add value, as this is not available outside the research community.

GEO could add value by leveraging basic tools, building a bridge between hydrology and stakeholders in other communities such as agriculture, biosphere research, and any others in its orbit that would benefit from such information. GEO could also point out that continuous water research satellite missions, rather than singular or research-based water satellite missions, are critical to providing the observations necessary to underpin global water security monitoring.

For the global water security monitoring system, existing tools such as Jay Famiglietti's work on ground water resource assessments with Gravity Recovery and Climate Experiment (GRACE) satellites and the WaterGAP and the Hydrological Predictions for the Environment (HYPE; SMHI) models may be good candidates. Charles Vörösmarty is also working on a new tool and would be someone to contact.

We also need a top advisory panel to clarify which main issues should be tackled by the global water security monitoring tool, and similar to the panel for the writing of the new GEOSS water strategy, members could be solicited from the networks of the IGWCO community. Each IGWCO member is asked to reach out to those in their networks who might be interested in contributing to the advisory panel. Establishing a LinkedIn group would be a good option after that, as would reaching out to communicate with the GEO Secretariat.

The global water security monitoring tool is positioned to be an important part of the new GEOSS water strategy.

Item 3. Outcomes of the UN water conference

Dr. Bérod reports that the UN 2023 Water Conference (https://sdgs.un.org/conferences/water2023) had a focus on the need for monitoring systems, data, and items in that vein. HydroSOS was part of WMO's commitment on that front, and the "Early Warnings for All" initiative was featured in a side event. The Secretary General will take a decision on appointing a special envoy on water to raise visibility for the subject. There will also likely be a year of glacier protection in 2025.

Item 6. Inputs to the IGWCO website

No input has yet been received from IGWCO members. Some updates on IGWCO regional activities would help flesh out the website, perhaps consisting of a short introduction to the activity and a link to the relevant website.

Item 7. Recent developments with regard to IGWCO-related activities

George Huffman pointed out that the fate of the material from the Water from Space Workshop, which was held in 2018, is undetermined. No formal report was created, but the raw material is available. The group determined it would be useful for a small group to comb through the material to identify possible contributions to the revision of the Water Strategy, as well as names of those who might have ideas to contribute to it. Those who made the recommendations in the material would be given credit. This effort might also help to engage CEOS more.

Dr. van Oevelen volunteered to look for the website where the material from the workshop resides, a first step suggested by Rick Lawford.

Dr. van Oevelen mentioned that papers intended for program managers (particularly those in the U.S.) will be coming out with data products that GEWEX has stewarded in the past, which might also be useful to IGWCO. GEWEX assessments might also be of interest; for example, the precipitation assessment conducted by GEWEX compares different products, but does not provide any judgement on those products. IGWCO may be able to provide that input, though it is not clear through which mechanism.

There are more activities that may be relevant, such as the Digital Twins or Digital Earths efforts in ESA and WCRP. Given the volume of opportunities, it will be up to the group to pick which issues are the most interesting or pertinent.

Two GEWEX-affiliated meetings of interest are coming up: the Fifth Space for Hydrology Workshop (HYDROSPACE 2023) (https://www.hydrospace2023.org/) from Nov 27–Dec 1, 2023 in Lisbon, and the 9th GEWEX Open Science Conference (https://www.gewexevents.org/meetings/gewex-osc2024/) from July 7–12, 2024 in Sapporo.

Stephan Dietrich noted that at the UN Water Conference, the theme "global water information systems" was popular. UNESCO is working on a science-based water assessment as well, so it will be important to look at what's going on in this space and avoid duplicating efforts with respect to the global water security monitoring tool.

Now is a good time to look for synergies with programs generating new initiatives, such as WMO and its new task teams, UNESCO, and the UNESCO Intergovernmental Hydrological Programme 9 (IHP IX).

Item 7. Any other business

Please check the IGWCO website to see if you'd like to see anything added.

Thanks to all those who participated!

Wolfgang Grabs and Peter van Oevelen

Action items

- All members: each IGWCO member is asked to identify individuals who might like to serve as a member of an advisory panel on the writing of the new GEOSS Water Strategy
- COMPLETED: Ulrich Looser will contact Florian Franziskakis (ffranziskakis@geosec.org) from the GEO Secretariat
- Wolfgang Grabs and Peter van Oevelen will draft a one-page document outlining the scope and expectations for the advisory panel on the writing of the new GEOSS Water Strategy
- All members: each IGWCO member is asked to identify individuals who might like to serve as a member of an advisory panel on the global water security monitoring system
- Wolfgang Grabs and Peter van Oevelen will draft a short document outlining the scope and expectations for the advisory panel on the global water security monitoring system
- Peter van Oevelen will look for the website where the material from the 2018 Water from Space Workshop resides so that a small group can be assembled to review it
- All members: each IGCWO member is asked to review the IGPO 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
- IGPO will send a list of expected participants based on Doodle poll information to Wolfgang Grabs and Peter van Oevelen