

## IAHS Bureau: International Commissions (IC)

**President Name:** Felipe de Barros (and president-elect Michelle Newcomer)

**International Commission:** ICGW-Groundwater

**Names of participants and role(s) of each officer:**

Role	Name of person	Activities/Responsibilities (e.g. communication)
President	Felipe de Barros	Organizing meetings, provides and collect ideas. Decision-making, strategies
Past-President	Felipe de Barros	Organizing meetings, provides and collect ideas. Decision-making, strategies
President-elect	Michelle Newcomer	Organizing meetings, provides and collect ideas. Decision-making, strategies
VP	Makoto Kagabu	Organizes and provides ideas. Attend meetings, work on publications, contribute to activities, help develop workshops, etc.
VP	Chengpeng Lu	Organizes and provides ideas. Attend meetings, work on publications, contribute to activities, help develop workshops, etc.
VP	Rajendra Prasad	Organizes and provides ideas. Attend meetings, work on publications, contribute to activities, help develop workshops, etc.
Secretary	Antonio Zarlenga	Organizing meetings, scheduling, writing memos. Organizes and provides ideas. Attend meetings, work on publications, contribute to activities, help develop workshops, etc.
ECC	Rahim Barzegar	Provides perspectives from the early career committee. Arrange and report on activities of IAHS Early Career committee, contribute to meeting organisation and other activities.

**Which UPH(s) does the Commission contribute to?** (No 1-23: check <https://www.tandfonline.com/doi/full/10.1080/02626667.2019.1620507>)

Question 3: What are the mechanisms by which climate change and water use alter ephemeral rivers and groundwater in (semi-) arid regions?

Question 20: How can we disentangle and reduce model structural/parameter/inputuncertainty in hydrological prediction?

Question 2: How will cold region runoff and groundwater change in a warmer climate (e.g. with glacier melt and permafrost thaw)?

Question 4: What are the impacts of land cover change and soil disturbances on water and energy fluxes at the land surface, and on the resulting groundwater recharge?

Question 5: What causes spatial heterogeneity and homogeneity in runoff, evaporation, subsurface water and material fluxes (carbon and other nutrients, sediments), and in their sensitivity to their controls (e.g. snow fall regime, aridity, reaction coefficients)?



Question 12: What are the processes that control hillslope–riparian–stream–groundwater interactions and when do the compartments connect?

Question 13: What are the processes controlling the fluxes of groundwater across boundaries (e.g. groundwater recharge, inter-catchment fluxes and discharge to oceans)?

Question 15: What are the extent, fate and impact of contaminants of emerging concern and how are microbial pathogens removed or inactivated in the subsurface?

Question 16: How can we use innovative technologies to measure surface and subsurface properties, states and fluxes at a range of spatial and temporal scales?

**Which Theme and WG of HELPING Decade the Commission contribute to?** (See current status here <https://iahs.info/Initiatives/Topic-for-the-Next-IAHS-decade/helping-working-groups/>)

#### **HELPING Theme 1: HELPING with global and local interactions - Working Groups**

Based on the detailed information provided about the HELPING Decade's themes and working groups, the International Committee on Groundwater (ICGW) may contribute to the following themes and working groups:

WG1: REHYDRATE - RETrieve historical HYDRologic dATa & Estimates

WG2: Hydrologic Design: Solutions and Communications working group

WG3: Droughts in Mountain Regions

WG4: Effective Aquifer Governance for Agriculture.

- Effective Aquifer Governance for Agriculture
  - Leader: Maria Elena Orduna Alegria
  - This group focuses on governance aspects related to aquifers, which is directly relevant to the ICGW's focus on groundwater.

**How – in which form will the results be presented?** (Collaborative paper, workshop, etc)

Collaborative manuscript

**Table 1: Work plan for 2025**

PERIODICAL COMMISSION WORKSHOP	Activities
	<ul style="list-style-type: none"><li>● A workshop will be discussed with the ICGW Commission and we will collectively decide on the details after our first few ICGW Commission meetings. If the workshop should be an in-person event, we will work with IAHS to decide on the details, location, logistics etc.</li><li>● Another workshop idea includes a training programme /workshop for 3 to 4 days on Groundwater occurrence and dynamics in Hardrock terrain. This can be online and the target group will be young geoscientists/hydrologists from developing nations.</li><li>● Propose a workshop on Evolution and Remediation of Groundwater Systems under Changing Environments and likely jointed with the Coupled Land-Atmosphere Systems Commission (ICCLAS) to organise this meeting in Nanjing, China, in 2026</li></ul>

	<ul style="list-style-type: none"> <li>• Efforts will be made to organise a special session Ground water on a theme relevant to Asian countries and the hard rock regime as a part of 2025 IAHS Scientific Assembly in Roorkee, India in 2025.</li> <li>• Organise a pre-Assembly workshop for 3 days before the 13th IAHS scientific Assembly in India</li> <li>• Rajendra Prasad is a member of the local organising committee in preparation of the IAHS scientific assembly being held in Roorkee. Also participating in the training programme on groundwater management as a part of our groundwater commission</li> <li>• Active participation in AOGS and IAHS assembly</li> <li>• Organizing a session of Chinese National Committee for International Union of Geodesy and Geophysics (CNC-IUGG)</li> </ul> <p><b>Joint ICGW-ECC activities:</b></p> <p>The ECC regularly meets to discuss the following activities:</p> <ul style="list-style-type: none"> <li>• <b>Workshops:</b> We will keep organizing early career researcher workshops at IAHS/IUGG assemblies and also some national and international conferences. Rahim will work to organize workshops and sessions in collaboration with the Early Career Committee of the International Association of Hydrogeologists – Canadian National Chapter (IAH-CNC) in 2025.</li> <li>• <b>Virtual Webinar Series:</b> We will discuss the Virtual Webinar Series focusing on water management and climate change's hydrological impacts in our initial ICGW Commission meetings. Post-agreement, we'll coordinate with IAHS for technology and promotional aspects, aiming to facilitate global knowledge exchange and collaboration in hydrology.</li> <li>• <b>Online Training Programs:</b> We will develop online courses and training modules, targeting professionals, students, and interested laypersons. We will discuss the details in our meetings.</li> <li>• <b>Blog series on water by ECRs:</b> We are planning to have a series of blogs by ECRs to tell their stories. The blog series will now probably take place through the IUGG initiative on having a platform for all ECCs of the associations.</li> </ul>
<b>COMMUNITY PAPER</b>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• We are working on a community paper on challenges in groundwater from IAHS ICGW.</li> <li>• Collaborative research for an integrated groundwater management and circular economy study between the Government of India and European Union. Funded by a national programme under Anusandhan National research foundation, a Government of India research funding agency. This effort contributes to the unsolved problems in hydrology published by IAHS with groundwater as the central theme</li> </ul> <p><b>ICGW-ECC Joint Activities</b></p> <ul style="list-style-type: none"> <li>• <b>Community Paper Development by ECC Committee:</b> The ECC is preparing an opinion paper highlighting the vital role of ECRs in the new IAHS decade theme, HELPING. The paper will explore how ECRs are pivotal in tackling the challenges of HELPING, which aims to enable novel hydrological techniques globally. It will analyze their contributions and potential to influence future hydrological research, with the goal of inspiring policy-makers, educators, and the scientific</li> </ul>

	<p>community. We are still working on this paper. Rahim has completed his part, and we are currently waiting for the other ECC members to finish theirs.</p>
<b>DIGITAL WATER GLOBE</b>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• We continue to promote the DWG in various initiatives (meetings, conferences)</li> <li>• We made our community of master and PhD students aware of DWG by encouraging its use and showing its potential.</li> </ul> <p><b>ICGW-ECC Joint Activities:</b></p> <ul style="list-style-type: none"> <li>• <b>Educational Outreach:</b> Encourage professors to utilize the DWG as an educational resource for schools and universities. Develop curriculum resources or interactive learning modules that leverage the data and tools for teaching hydrology and water management.</li> </ul>
<b>OTHER INITIATIVES</b>	<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Contributing writing and idea generation for the HELPING working group themes (REHYDRATE, Hydrologic Design, and Droughts)</li> <li>• Contributed as session conveners to multiple conferences at EGU (e.g. HS8.1.7 Contaminant transport in groundwater and remediation: concepts, modelling, observations and challenges in application)</li> <li>• Contributing to a Powell Center working group analysing continental scale groundwater quality</li> <li>• Contributed to the organization and support of multiple sessions at JpGU 2025, including [A-HW27] Biodiversity, nutrients and other materials in ecosystems from headwaters to coasts, [A-HW28] Hydrology and Water Environment, and [A-HW30] Isotope Hydrology 2025.</li> </ul> <p><b>ICGW-ECC Joint Activities:</b></p> <p>We are involved in the organization of the following initiatives:</p> <ul style="list-style-type: none"> <li>• IAHS Academy</li> <li>• EGU 2025 session on HELPING: <a href="https://meetingorganizer.copernicus.org/EGU24/session/48116">https://meetingorganizer.copernicus.org/EGU24/session/48116</a></li> <li>• Social events for ECRs at conferences (IAHS, IUGG, EGU, AGU, FRIEND-Water, etc.)</li> <li>• Pre-EGU Networking and HydroMeet</li> <li>• Early Career Researcher social networking at EGU in April 2025</li> <li>• We are looking forward to actively contributing to the organization of the next General Assembly in Roorkee- India ( 5-10 October 2025).</li> </ul>



#### Guidelines for filling the Workplan:

##### **“PERIODIC COMMISSION WORKSHOP”**

This workshop is organized by the Commission. It should be an IAHS event, not a session during a conference. It can be co-organized with other Commissions or other organizations. In the latter case the role of IAHS should be clearly identifiable in the organization.

Typically, such workshops have an annual frequency, have a relatively small number of participants (in the range of 40-100), and are particularly precious for collecting the community and focusing on common and emerging research topics.

In the work plan table are expected information about the Commission Workshop.

If the Commission has already finalized the organization, the webpage link of the workshop and the date and the venue should be specified. If the Commission has just started to plan and organize, the date and venue or the available information should be specified. If the Commission recently held the workshop, few summary information should be included in the table and the report link or the pdf should be provided.

The report format is simple and described below:

First page: Commission name, title of the workshop, date, venue, Group Picture of the event

Second page: Statistical summary of the workshop: number of participants, Countries, number of oral presentations, number of posters (if they were present).

From the third page: Scientific Program

Last page: list of participants (EDI?)

##### **“COMMUNITY PAPER”**

The final aim of the Commission is to shed light on research topics related to the Commission as well. Collecting the community and working together the expected outcome is to provide a community paper that summarizes milestones or crucial emerging topics.

In the work plan table, some information on the community paper status are expected. For instance, it would be useful to know if the commission has been planning the community paper, the topic, authors, the percentage of development, and when it is expected to be submitted. This information is crucial for coordinating such activity with the HSJ Editors.

You can find some examples here:

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##### **“DIGITAL WATER GLOBE”**

As you know the DWG is finally active: <https://dwg.smhi.se/dwg/> and we are looking forward to receiving the contribution from the IAHS community on case-studies and links to data and IAHS publications.

Since our community is shaped by the Commissions, Committees and Working Groups we invite you to advertise the DWG and include all the officers' Personal profiles in the visualisation tool (linked to other items).

The information requested in the table is the number of items that you plan to include in the DWG during the next months and the number you did in the last period.