



## ANNUAL REPORT 2023

### Chair

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### Co-Chairs

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IAH-CGCC website: <https://gwclimate.iah.org/>

### 1. IAH-CGCC Aims

The mission of the IAH Commission on Groundwater and Climate Change (IAH-CGCC) is: **to improve understanding of (1) the relationship between groundwater and climate change, and (2) the role of groundwater in adaptation to climate variability and change.**

The IAH-CGCC will seek to fulfil its mission by:

1. promoting related research and development to advance scientific and technical knowledge;
2. fostering inter-disciplinary, international collaborations among universities and research institutions, water resource managers, and water policy makers;
3. fostering linkages with related research and development activities in climate, hydrological, agricultural and health sciences;
4. engaging with key international organisations, agencies and programmes (e.g. UNESCO-IHP, WMO, FAO, UNICEF, WHO, IAEA-WRP, GEWEX, GWSP)
5. working with the International Groundwater Resources Assessment Centre (IGRAC) to promote the development of a programme and facility for the collection, evaluation, archiving and sharing of groundwater data including both ground-based observations and satellite measurements;
6. identifying and evaluating a series of representative case studies illustrating the relationship between groundwater and climate change and the role of groundwater in adaptation to climate variability and change;

7. disseminating research and development outcomes to the global research community including specifically the IPCC, and global development community including governmental and non-governmental organisations and those specifically concerned with enabling adaptation to climate change; and
8. creating awareness of the IAH-CGCC among IAH members, related professions and wider water resources and water supply communities.

## 2. IAH-CGCC activities during 2023

Several colleagues from different parts of the world manifested their interest to join the commission, and the list of members has grown, having reached the total number of 70. The website itself has information on the commission, its history (*in preparation*), its current members and their profiles (LinkedIn, ResearchGate) and contacts, links to other networks, commissions and organizations, challenges addressed by the commission, news and events, and relevant publications.

The several activities in which IAH-CGCC was involved in 2023 were presented during the IAH congress held in Cape Town on 21 September 2023. They included:

- UN 2023 Water Conference (22-24 March 2023). Participation by Lindsey Kenyon and Valentina Uribe, GroundwatCh students representing higher education and participating in the event titled 'Building Youth Leadership for Accelerating Change'. Active speaking role on side event on capacity development (Valentina Uribe: "The other side of the coin of capacity development"). Rapporteur in event about Big Earth Data: a game changer to promote the implementation of SDG6. Participation on side event about *Inclusive science for Water Security*.
- The contribution was a follow up of the work done for the 2022 UN Year of Groundwater, where we contributed to the UN WWDR and wrote an essay on "Groundwater and climate change – Threats and Opportunities in the Hydrogeology Journal (<https://link.springer.com/article/10.1007/s10040-022-02554-w>).
- Supporting a collection of articles in Theoretical and Applied Climatology (in progress).
- Educational Initiatives include the International Joint Master Programme on Groundwater and Global Change, with a focus on six thematic fields, including societal needs and labour market requirements. Over 145 participants and ~5000 applicants since 2015.
- IAEA Technical Meeting "Defining Groundwater Vulnerability under a Changing Climate" on 17-21 April 2023.
- The item of "Groundwater and climate change in the news" has been further developed with a separate presentation and updates on the website.
- The publications around groundwater and climate change have been compiled for 2023.
- We are looking at ways to show ongoing research projects in the field.

## **2.4 Engagement with international programmes and scientific agenda:**

Besides looking at climate change impacts on groundwater, the importance of drivers such as population growth, development, urbanisation and changing dietary preferences in large emerging countries, which all lead to increased (ground)water demand, also merit attention within the activities of IAH-CGCC, as does the role of groundwater in adaptation. For this reason, contacts are sought with other relevant commissions within IAH, such as the Commission on Managing Aquifer Recharge, as well as with international programmes (e.g. UNESCO IHP), organizations (e.g. IGRAC) and networks (e.g. IWRA, ECHN). A few examples:

### **(i) INQUA and IGCP**

- IAH-CGCC Co-chair Jianyao Chen serves also as INQUA IFG Palaeogroundwater leader, which enables the close communication between INQUA, IGCP and the IAH and contributes to the Commission with knowledge of global change from large aquifers.

### **(ii) International Groundwater Resources Assessment Centre (IGRAC)**

- IAH-CGCC and IGRAC are involved in joint activities including awareness raising, knowledge dissemination and MSc supervision.

- Close collaboration within the GroundwatCh Joint MSc programme

### **(iii) IAH Commission on Managed Aquifer Recharge**

- Close collaboration within the GroundwatCh Joint MSc programme

Tibor Stigter

*Chair*

Jodie Miller & Jianyao Chen

*Co-Chairs*