

Coordination Meeting

TC Project RER/7/013

“Evaluating Groundwater Resources and Groundwater-Surface-Water Interactions in the Context of Adapting to Climate Change”

03 – 07 February 2020

IAEA Headquarters, Vienna, Austria

VIC Building, Room M5

MEETING REPORT FINAL DRAFT

Background and Purpose

Although groundwater represents 98% of the world's unfrozen freshwater, there is often not enough understanding of complex aquifer systems. Due to the increase of groundwater usage over the past decades, there is an increasing global risk of over-depletion of groundwater, quality deterioration and pollution, putting at risk the resilience of communities, populations and ecosystems dependent on groundwater sources. The better understanding of complex aquifer systems and groundwater-surface-water interactions is thus indispensable for effective integrated water management. The analysis of stable isotopes and natural radioisotopes is an excellent tool for characterizing and understanding aquifer systems, especially when assessing the long-term exploitation of groundwater in important water supply points. However, the knowledge about isotope-based techniques and the capacity to apply them differs significantly among countries in the Europe region. Some Member States do have high to very high human and technological capacities to integrate isotopic techniques as an important tool for integrated water management, whereas in some other countries little to no knowledge exists.

To respond to these issues, a new 4-year regional TC Project RER/7/013 "Evaluating Groundwater Resources and Groundwater-Surface-Water Interactions in the Context of Adapting to Climate Change" started in January 2020. The underlying regional project aims to bridge the above gaps by transferring knowledge and capacity from advanced to less advanced member states in the TC Europe region by (1) increasing awareness on the existence of these techniques in member states where knowledge is very limited, (2) transferring knowledge and building capacity on the use of isotope hydrology techniques through training courses and fellowships, (3) answering specific regional or sub-regional and transboundary questions, such as on the impact of a changing climate and anthropogenic activities on groundwater resources, and (4) enhancing and sustaining a regional network for the monitoring and evaluation of water resource quality and quantity using isotope techniques. The ultimate aim of this project is to enhance evidence-based decision-making in integrated water management by an improved characterization and monitoring of groundwater resources.

As first activity under this new regional project, a Coordination Meeting was organised in Vienna, Austria from 03-07th February. 21 participants from 20 Member States attended the meeting. The meeting was targeted at designated counterparts of Member States that will be actively participating in the implementation of regional TC project RER/7/013. The list of participants can be found in Annex I.

The objectives of the event were to

- understand the existing status and the current needs for isotope hydrology in the region,
- finalize the project workplan including the implementation plans for the joint application studies, and
- define required support through the project;

This was achieved through presentations by IAEA experts, presentations by the participants on their current isotope related hydrological infrastructure, and presentations on proposals on joint application studies. The workshop also contained discussions and breakout sessions to discuss and finalize the project workplans and the joint application study implementation strategies. The agenda of the event can be found in Annex II.

Summary of the meeting

The first day of the meeting was dedicated to introducing the IAEA, its TC Programme as well as its work on isotope hydrology. Presentations were given on the two monitoring networks GNIP and GNIR and on the IWAVE methodology. In the afternoon the workplan and implementation strategy of the project were presented to all participants, and the invited expert Mr Frederic Huenau presented his first draft of the Project Preparation Synthesis which includes coverage, infrastructure, gaps and opportunities of isotope hydrology in the region. Based on the discussions and further bilateral exchanges, the expert will finalize the report. The final report will be shared soon with all project participants.

The second day of the meeting was dedicated to presentations by the meeting participants on their current isotope related hydrological infrastructure. The day was concluded with discussing needs and opportunities of regional training courses under the project.



Participants of the Coordination Meeting in Vienna (Photo: O. Yusuf/IAEA)

During the third day, the proposed isotope hydrology application case studies were presented and discussed in detail whereas during the fourth day meeting participants split into smaller groups to finalize the individual workplans and implementation strategies of the case studies. As a result of these presentations and discussions, the project group decided to proceed with the following case studies:

1. **Title:** Application of the environment isotopes in “Okò” transboundary karst aquifer
Countries: Bosnia and Herzegovina and Montenegro
Case study Focal Point: Mr Boban Jolovic
2. **Title:** Synoptic precipitation monitoring by coordinated spatial sampling of event

Countries: All (as applicable)

Case Study Focal Point: Mr Aurel Persoiu

3. **Title:** Coastal Aquifers

Countries: Portugal, Cyprus, Turkey, Montenegro, Bulgaria, Georgia, Malta (tbc)

Case study Focal Point: Ms Paula Carreira

4. **Title:** Application of isotope hydrology in the transboundary Syr Darya river basin for water balance and quality control purposes

Countries: Kazakhstan and Tajikistan (potentially more in Central Asia)

Case study Focal Point: Mr Anvar Koridov

5. **Title:** Studying transboundary groundwater aquifers

Countries: Bulgaria, Ukraine, Romania, Moldova

Case study Focal Point: Mr Aurel Persoiu

6. **Title:** Influence of climate change on groundwater resources and groundwater-surface water interaction in the Sava River basin

Countries: Slovenia, Croatia, Bosnia and Herzegovina and potentially Serbia

Case study Focal Point: Mr Zoran Kovac

7. **Title:** Vulnerability assessment of stratified, often transboundary aquifers using the isotope (dating) methods

Countries: Armenia, Bulgaria, Estonia, Georgia, Croatia, Hungary, Montenegro, Romania, Russian Federation, Slovenia, Slovakia and potentially Czech Republic, Serbia and Latvia

Case study Focal Point: Ms Nina Rman

8. **Title:** Environmental tracers of nitrate origin, fluxes, and transformations in groundwater and surface water

Countries: Poland, Russia, Portugal, Czechia, Cyprus, Croatia, Ukraine, Slovakia, Slovenia, Bulgaria, Georgia

Case study Focal Point: Mr Travis Meador and Mr Przemysław Wachniew

The draft case studies were shared with all participants.

The last day was dedicated to summarize IAEA support which is needed to achieve the planned activities under this project. A table of equipment and HR support needed to implement the activities of the project can be found in Annex III and IV. The total costs of IAEA related activities were roughly estimated at **€661 521.50** which is within the project budget.

Table 1: Planned IAEA Budget by year and item

Item	2020	2021	2022	2023	Total
Equipment	€ 149 661.50	€ 152 190.00	€ 143 730.00	€ 64 440.00	€ 510 021.50
HR	€ 12 000.00	€ 71 500.00	€ 68 000.00	€ -	€ 151 500.00
Sub-total by year	€ 161 661.50	€ 223 690.00	€ 211 730.00	€ 64 440.00	€ 661 521.50

However, it should be noted that there has been not full clarity on all activities including those in the case studies. As such, the above identified values may indeed change. Once the final case studies with the workplans will be submitted by the counterparts in the end of February 2020, and after potentially more detailed consultations with counterparts on certain procurement items, there will be more clarity on the exact budget required.

Apart from the implementation of each of the case studies and the provision of procurement needs, the group decided that in 2020 only one training course will be implemented under this project: *Regional Training Course on Isotope Hydrology in Russian Language* taking place from 2-6 November in Vienna, Austria.

It was further decided the PMO will provide counterparts with a case study workplan template which is then to be filled out and submitted to the Agency, together with the final cases study, by end of February 2020.