



# Engaging the Next Generation on Isotope Hydrology

The Peaceful Uses, Nuclear Safety and Security Working Group

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## Introduction

Sustainable Development Goal 6.1 calls for 'clean water and sanitation for all', yet 29% of the world population still lacks access to clean drinking water.<sup>32</sup> Isotope hydrology could play a key role in improving water access and management.<sup>33</sup> However, in our scoping assessment, knowledge and implementation of this research tool remains scarce amongst the next generation of experts, particularly in the Global South,

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<sup>32</sup> WHO, 'Drinking Water', 14 June 2019, <<https://www.who.int/news-room/fact-sheets/detail/drinking-water>>.

<sup>33</sup> Isotopes are forms of chemical elements. When the composition of isotopes in a given water source is studied using isotope hydrology techniques, it can reveal important information about where the water comes from, its uses, its quality, and its age. This can provide scientists with key information to better preserve, trace, and secure water resources.

and better online resources could be designed to attract new talent. The PUNSS Working Group proposes three interventions to address this.

## Recommendations

### **Create an Interdisciplinary Working Group**

In conjunction with the Emerging Voices Network (EVN), it is proposed that an interdisciplinary working group is formed to evaluate existing material in the public domain and the opportunities it presents for learning. This group should have members from at least three areas: the IAEA as experts on current domain knowledge, potential audience members (the EVN could perform part of this role, along with wider representation from the Global South) and representation from an organisation familiar with e-learning. This group could identify areas where the provision of learning material could be improved, and support the development of the e-learning platform and the material that would be hosted on it.

### **Develop New Multimedia Resources for an Isotope Hydrology e-Learning Hub**

Based on the recommendations of the Interdisciplinary Working Group and in partnership with the IAEA, new materials and resources should be generated to engage the next generation in isotope hydrology. This should be done with direct reference to the IAEA's existing materials and e-learning platform, the further development of which could make the materials more open access and allow better information retrieval. The e-learning platform should centralise existing resources related to isotope hydrology activity around the world, have the capability to connect and integrate other tools including social media such as Twitter, and host blogs and expert-led webinars. The text-information on the platform should be offered in more languages, and suitable accessibility measures should be taken to ensure a wide uptake of the resources.

### **Create an Integrated Communications Strategy and Community of Practice**

The final recommendation relates to the importance of making the knowledge on isotope hydrology visible, inviting, and easily accessible for next generation experts in the Global South. The creation of a YouTube Channel where a series of videos, webinars, or conferences on isotope hydrology, for instance, could be used for effective outreach and awareness building. Launching an online competition, poster campaigns on social media channels such as a LinkedIn group and a Facebook page – in partnership with the IAEA and other key players – would help to promote the isotope hydrology e-learning hub globally. These activities would then form the foundation for a community of practice for isotope hydrology.

## Conclusion

The PUNSS working group noted the need to enhance the generation and dissemination of knowledge on isotope hydrology amongst the next generation of experts, particularly in the Global South. Therefore, three actions have been proposed to address this, which are: to form an interdisciplinary working group to assess the status and nature of available information on the topic; to develop new functionality on isotope hydrology for the IAEA e-learning platform and new materials on the topic; and to create a communications strategy and subsequent community of practice for publication and support of new materials. If successful, these recommendations could also be applied to achieve the same objectives in respect of other peaceful uses of nuclear technologies.