

AN INTRODUCTION TO THE WORKING VERSION OF THE NINTH PHASE OF THE INTERGOVERNMENTAL HYDROLOGICAL PROGRAMME, 2022 - 2029

Tran Thuc

Chairman of Viet Nam National Committee for the UNESCO-IHP

Received: 03 August 2021; Accepted: 23 August 2021

1. Background

The UNESCO Intergovernmental Hydrological Programme (IHP), founded in 1975, is a long-term programme executed in phases of 8-year duration. Its programmatic focus has gone through a profound transformation from a single discipline mode to a multi-disciplinary undertaking, aimed at advancing hydrological knowledge through supporting scientific research and education programmes. Recently, with the increased presence of social science components, including important growth in the quality and quantity of citizen science inputs, IHP is evolving into a truly transdisciplinary undertaking. This progress has capitalized on the recognition that solutions to the world's water-related problems are not just technical, engineering or natural science issues, but have strong human and socio-cultural dimensions, where social sciences play an increasingly important role. IHP facilitates an interdisciplinary and integrated approach to watershed and aquifer management, which incorporates the social dimension of water resources, promotes and develops international research in hydrological and freshwater sciences. The ever-increasing pace of environmental changes intertwined with human dimensions calls for a better understanding of hydrology. The interaction between human activities and water systems needs to be considered to develop scenarios for water resources management.

For decades, water-related challenges have

grown significantly in terms of complexity and frequency. As challenges related to water resources have become more serious, it is time for people to take action to protect water security. To handle the issue, it is fundamental to create and disperse information through strong public and worldwide approaches to support more developments. The IHP of UNESCO in its Eighth Phase has been the current apparatus for the UN Member States to make this a reality worldwide. Phase Eight of IHP, from 2014 to 2021 has been conceived, among other goals, to help implement the international post-2015 agenda and the forthcoming Sustainable Development Goals. The Programme can help develop flexible and adaptable solutions in various contexts that help in transforming societies of all cultures into societies resilient to global changes and increase their potential to develop in a sustainable manner.

IHP-IX continues to offer a platform and venue to extend cooperation within the international scientific community, and thus contribute to addressing many unsolved problems in hydrology. The main objective of the IHP ninth phase (IHP-VIII 2014 - 2021) is to outline a compelling and strategic focus for the Intergovernmental Hydrological Programme for the 2022 - 2029 period. This is an important goal which requires strengthening the cooperation and synergies between the IHP and programmes of other UN agencies and other relevant organisations on a global level and on the ground. The following content will introduce Priority Areas, Vision, Mission as well as Strategic Objectives of the IHP-IX local and nearby scale.

*Corresponding author: Tran Thuc
E-mail: tranthuc.vkttv@gmail.com*

2. Priority Areas

The IHP-IX priority areas, identified and elaborated by UNESCO's Member States, are presented as five transformative tools that will enable water security to sustain development in a changing world for the period 2022 - 2029:

a. Scientific Research and innovation

The development of hydrological science and research has provided practical knowledge and information for society about water fluxes, transport and management, however, ever-increasing and uncertain environmental changes demands for a continued effort on research innovation and application. Scientific research incorporating human interactions with nature in the context of complex water sciences and management problems provide fundamental feedback for water resources management, along with the application of new tools, approaches, and technologies.

b. Water education in the Fourth Industrial Revolution

It is undeniable that the success of Agenda 2030 for Sustainable Development and water-related SDGs and associated targets depend on a profound transformation in human values and, consequently, human behaviour and actions, directly impacting how we live our lives. Achieving that end can only be envisioned when society recognizes the need to reintegrate itself with nature in ways that embrace a common understanding of the importance and limits of our natural resource base to improving the quality of life. Water education at all levels for an improved water culture, in a context of global change, is undoubtedly a formidable tool for the Member States to practice inclusive, evidence-based water governance and management in order to move towards resilient and sustainable societies.

c. Bridging the data-knowledge gap

By the year 2029, significant advances will have occurred in transparency and accessibility of water data, which made possible further development of open access science platforms and generated facilitating instruments for

integrated watershed management, particularly in the case of transboundary water resources.

Transparency and accessibility of data are among the main pillars that sustain the advancement of open science - a coming commitment of UNESCO. Hydrological measurements are essential for decision-making and sustainable water resources management. The absence or inaccessibility of comprehensive or long-term data about water quantity, quality, distribution, access, risks, use, etc. often leads to partial or ineffective management and investments. Therefore, both sufficient data and its accessibility needs to be ensured and, in many cases, improved, as recommended by the UN Mar del Plata conference in 1977.

d. Inclusive water management under conditions of global change

By 2029, most societies have managed to adapt to or mitigate water risks derived from, among others, climate change and the human factor, such as global pandemics, generating better participatory management practices and new opportunities for the future of our planet.

Healthy rivers, lakes, wetlands, aquifers, and glaciers do not just supply safe drinking water and maintain all ecosystems on the planet; they also support agriculture, hydropower, industry, recreation, communications, and transportation of goods. Although water is considered the core of sustainable socio-economic development, it is frequently ignored in the investment debate. Additionally, water management is not considered in an integrated, inclusive manner and it is frequently disbursed; considered a shared responsibility among many different governmental institutions.

e. Water governance based on science for mitigation, adaptation, and resilience

Water governance refers to the political, social, economic, legal, and administrative systems in place that influence water's access and use, protection from pollution, and management in general. It determines the equity and efficiency in water resources and services allocation and distribution, and balances water use between socio-economic activities

and the goods and services provided through ecosystem preservation. It includes formulation, establishment, and implementation of water policies, with clear and practical standards based on science, including water ethics, legislation and institutions, and the roles and responsibilities of all stakeholders. By 2029, Member States have significantly reduced water governance gaps, generating greater equity and efficiency in the allocation, distribution, and conservation of water resources and services, and designing and implementing water policies in an inclusive and participatory way with standards based on science while developing ongoing efforts addressing the adaptation and mitigation to climate change.

3. IHP Vision

IHP envisions a water-secure world where people and institutions have adequate capacity and scientifically based knowledge for informed decisions on water management and governance to attain sustainable development and to build resilient societies.

4. IHP-IX Mission

Our mission for the period 2022 - 2029 is to support the Member States to accelerate the implementation of water-related SDGs and other relevant agendas through water science and education. To this end IHP-IX will:

- a. Leverage intersectorality for sustainable water management and sustainable water security;
- b. Promote international scientific research and cooperation for improved knowledge to address water and climate challenges incorporating the interaction between human and water systems.
- c. Mobilize and disseminate effectively scientific relevant expertise, knowledge, and tools for informed decisions in addressing water challenges.
- d. Reinforce institutional and human capacities and train the present and upcoming generation of water professionals capable of providing water solutions for SDGs and building climate resilience through the water.
- e. Raise awareness and promote a water

culture and water ethics at all levels for conserving, protecting, and mainstreaming the crucial role of water in all sectors.

f. Support Member States in better understanding and managing their water resources.

g. Support the UN SDG6 Global Accelerator Framework implementation including the associated water and climate coalition in terms of understanding and implementing solutions to global water challenges

5. Strategic Objectives

As several challenges arise from achieving water security, which range from the effects of global change such as water-related disasters to operational aspects such as understanding of the value of water as this is expressed by local water rates. The Intergovernmental Hydrological Programme's approach to these challenges is to expand the human capital, scientific base and knowledge at all levels to "understand the impacts of global changes on water systems and to link scientific conclusions to policies for promoting sustainable management of water resources".

The above-identified outcome of IHP-IX is aligned with UNESCO's overall Medium-Term Strategy and will serve two of its Strategic Objectives: Strategic Objective 1: Reduce inequalities and promote learning and creative societies in the digital age through quality education for all; Strategic Objective 2: Work towards sustainable societies by preserving the environment through the promotion of science, technology and the natural heritage.

A prerequisite to evidence-based water governance and management is available, accessible and current scientific knowledge provided by trained and aware human resources. Strategies and activities addressing global changes that are science-based and inclusive of all sectors of civil society in the context of the long-term resilience of decisions taken, enhance the overall resilience of societies. Building communities and societies that are resilient in the face of changing and ever more complex environmental conditions requires that science

inform policy. Improving this aspect of the decision process permits greater involvement of civil society with the government, including the ability of decision-makers to benefit from the use of indigenous knowledge.

The following performance indicators have been identified to monitor progress towards the achievement of the desired result (Outcome 1):

- PI 1: Number of Member States/stakeholders use improved water science, research and apply the strengthened capacities to expand knowledge and better manage services and related risks at all levels.

- PI 2: Number of Member States with enhanced water informal, formal, and non-formal education at all levels.

- PI 3: Number of Member States which use scientific data, and knowledge to sustainably manage their water resources.

- PI 4: Number of Member States practice inclusive and cross-sectoral water management to address global challenges.

- PI 5: Number of Member States implementing mechanisms and tools based on science to strengthen water governance for mitigation, adaptation, and resilience.