

International Hydrological Programme

43rd session of the IHP Bureau
(Paris, 3 – 5 June 2009)

CONSIDERATIONS ON THE POSSIBLE ESTABLISHMENT OF A NEW SECTION ON GROUNDWATER RESOURCES AND AQUIFER SYSTEMS WITHIN THE DIVISION OF WATER SCIENCES

Item 7.3 of the provisional agenda

Summary

This document gives an overview of considerations on the possible establishment of a new section on Groundwater Resources and Aquifer Systems within the Division of Water Sciences and presents the rationale behind it in full consistency with the priorities set by the Intergovernmental Council and adopted by the draft 35 C/5.

The Bureau may wish to endorse the proposal and present it to the Assistant Director-General of the Natural Sciences Sector for consideration and approval as well as for implementation for the next biennium (2010-2011).

INTRODUCTION

1. Groundwater resources represent 97% of the planet's freshwater. In most countries groundwater exploitation provides most of the water needs for irrigation and the potable water supply. A number of the world's larger cities receive their water supplies exclusively or mostly from groundwater sources. The contribution of groundwater is naturally predominant in the majority of countries located within the arid zone. Groundwater and aquifers can play a significant role in the setting up of adaptation measures to climate change.

2. Conscious of the above and the mounting need for groundwater resources studies, and of management and governance guidelines, UNESCO's International Hydrological Programme has, during the period covered by IHP-V (1996-2001) and IHP-VI (2002-2007), made considerable efforts to contribute towards filling the gap between science and the management of aquifers. Results achieved through the groundwater resources programme under IHP-VI have been published, providing evidence of the extensive and comprehensive work undertaken under these phases and also of the significant partnerships and networks that have been successfully established.

3. The Division of Water Sciences hosts the Secretariat of the IHP, thus it is appropriate and functional that the structure of the Division reflect the requirements of the IHP objectives and its implementation as endorsed by the IHP Intergovernmental Council. Hence, in response to the facts noted above, the establishment of a new section on Groundwater Resources and Aquifer Systems within the Division is part of an on-going reform effort to bring the objectives and structure of IHP into a coherent framework with a view towards the future delivery capacity of the Programme. This document has been conceived to present the rationale behind the establishment of a Groundwater Resources and Aquifer Systems section.

BACKGROUND: GROUNDWATER AT UNESCO IHP

4. The focus of IHP-V (1996-2001) was on groundwater quality, while during IHP-VI (2002-2007) a wider range of groundwater related issues were developed under Theme 2, 'Integrated Watershed and Aquifer Dynamics'.

5. Major efforts were undertaken in mapping the groundwater resources of the world (WHYMAP). Case studies and guidelines were proposed to identify and manage strategic aquifer systems to be used in emergency situations (GWES). Activities were undertaken to promote and advance sustainable groundwater management in the face of climate change and related human impacts (GRAPHIC). Groundwater indicators for sustainable development were developed in support of the UN WWAP. Activities on groundwater references in Africa were introduced. Attempts to develop a groundwater resources database resulted in the establishment of a UNESCO category 2 centre in The Netherlands (IGRAC). UNESCO Chairs and category 2 centres have been established to better address the various aspects of this topic at regional level. The largest world-wide professional association on the subject, the International Association of Hydrologists (IAH), has strengthened its association with IHP and has already initiated the joint programming of certain activities. Solid cooperation has also been established with other UN Agencies and programmes to develop a multidisciplinary approach to the management of groundwater resources contributing fully to IWRM.

6. As a result, this concerted effort has given IHP groundwater related programmes wide acknowledgement within the UN system. IHP has been able to assume the lead on groundwater resources during international scientific debates, in particular during the World Water Forum series.

7. Among the various IHP groundwater activities (WHYMAP, GWES, GRAPHIC and IGRAC, etc) it is worthwhile mentioning its portfolio of extrabudgetary projects on groundwater resources and transboundary water systems.

8. The work on the global inventory and assessment of transboundary aquifer systems (ISARM) led to the cooperation with the United Nations International Law Commission and to the development of the Law of Transboundary Aquifers adopted by the 63rd General Assembly of the UN¹.

These are further elaborated below.

9. Prior to the year 2000, there were very few extrabudgetary funded groundwater projects that addressed aquifer systems as a component of ecosystems, either explicitly or implicitly. IHP, with its expertise on groundwater resources, has in fact provided assistance in the formulation of a conceptual framework for the Global Environment Facility (GEF) action on groundwater and transboundary aquifers, and in the establishment of a GEF-IHP portfolio of groundwater projects addressing key global resources and issues. As a result of the successful cooperation established between the GEF and IHP during the last few years, UNESCO IHP has presented its application to obtain the status of GEF Executing Agency under the policy of Expanded Opportunities.

10. Up until 2002, no regional or global estimation existed for transboundary aquifers. The Intergovernmental Council of IHP responded to this knowledge gap during its 14th Session (23–25 June 2000) by adopting a resolution to launch a worldwide inventory and assessment project, namely UNESCO International Shared Aquifer Resources Management (ISARM). The UNESCO ISARM has since provided support to countries in the assessment of these aquifers and formulated recommendations on their management. The UNESCO ISARM operates in response to the needs of Member States and in close coordination with various intergovernmental, governmental and international partners.

11. In addition, prior to 2002, there were no legal instruments available that comprehensively dealt with Transboundary Aquifers by addressing their specific characteristics at a global level. In 2003, UNESCO IHP and the UN ILC (UN International Law Commission, in charge of the codification and progressive development of international law) began cooperation on the preparation of an international legal instrument for the management and use of transboundary aquifers. This resulted in the establishment of a complete set of articles on The Law of Transboundary Aquifers (UNILC Report July 2008) that were then presented to the UN General Assembly (UNGA) in October 2008. The UNGA adopted by consensus a Resolution that advises Member States to use the set of articles as recommendations².

12. It is worth noting that within the text of this Resolution, the UNGA expressed its recognition of the support provided by the groundwater programmes of IHP in the drafting of these articles. The articles represent a milestone in the international recognition of the vital function of transboundary aquifers for both mankind and the environment. IHP will likely be challenged by an increase in requests from Member States for the provision of technical support for the appropriate consideration of Transboundary Aquifers.

¹ 11 December 2008

² Resolution 63/124 The Law on Transboundary Aquifers

FUTURE OF THE GROUNDWATER PROGRAMME OF IHP

13. IHP is recognized as one of the major players in groundwater within the UN System. In the years to come, due to the increase in groundwater use and the need for better governance, it is foreseen that IHP will be called upon to strengthen its efforts in this domain. The already ample scope of activities that exist within the field of groundwater, as well as the related portfolio of extrabudgetary projects, are both set to increase. This will represent increased responsibility for the IHP Secretariat in assuring the continuation of a number of existing activities, in responding to increased requests for support from Member States, as well as in the administration and execution of extrabudgetary GEF projects. The IHP Secretariat will also have to secure the coordination of existing and new networks and partnerships, including the management of relevant Category 2 Centres and Chairs.

14. Under the UNESCO Draft Programme for 2010-2011 (draft 35 C/5), the priorities set for the biennium (paragraph 02022) address the promotion of sustainable groundwater management at different scales, from local aquifers to transboundary aquifers (para. 02023). The draft 35 C/5 also foresees the development of groundwater related best practices in climate change adaptation strategies. Expected results for the end of the biennium, 2010-2011, are as follows: *'Scientifically sound policy-relevant recommendations on groundwater governance and on adaptation to global change and strengthening of water resources management in arid and semi-arid zones.'*

15. The 18th session of the IHP Intergovernmental Council held in June 2008 included groundwater resources studies and management amongst the priorities of the seventh phase of IHP (2008-2013).

STRUCTURE AND SCOPE OF THE PROPOSED SECTION ON GROUNDWATER RESOURCES AND AQUIFER SYSTEMS

16. Taking all the above into consideration and in view of planning for the future of IHP, the need to establish a new Section dealing with Groundwater Resources and Aquifer Systems directly under the supervision of the Director of the Division of Water Sciences is recognized. With this change the structure of the Division of Water Sciences is in full conformity with the priorities set by the Intergovernmental Council and the draft 35 C/5. It is recommended that the new section start to operate right at the outset of the next biennium (2010-2011). See Annex for proposed organizational chart of the Section.

17. The new Section on **Groundwater Resources and Aquifer Systems** will be directly under the supervision of the Director of the Division of Water Sciences. The objective is to consolidate results achieved in the previous IHP phases and as such create a long term capacity for a visible IHP action programme on groundwater resources in cooperation with, and in support of, the Member States.

18. The creation of a new section will allow for a better definition of tasks and responsibilities, a more efficient execution of IHP strategic plans, more transparent assignment of responsibilities for the execution of the portfolio of groundwater extrabudgetary projects, and more visibility for a flagship component of the IHP. The new section within the Division of Water Sciences would not have financial implications for the 2010-2011 budget of the Organization; neither would it have an impact on the regular budget allocated to IHP activities due for implementation in the next biennium.

FUNCTIONS OF THE NEW SECTION

19. The Section on Groundwater Resources and Aquifer Systems will carry out the following activities:

- lead, coordinate and implement IHP activities related to groundwater resources in accordance with the decision of the relevant organs of the International Hydrological Programme (IHP);
- expand policy-relevant scientific knowledge and formulate strategic approaches for sustainable groundwater resources management;
- mobilize extrabudgetary resources for groundwater related IHP work;
- facilitate establishment of experts' groups;
- build partnerships with other UN agencies, national, regional and international institutions, in particular WWAP, UNESCO-IHE, IHP National Committees, UN-Water, GEF, IAEA, FAO, UNECE, UNESCWA, UNILC, UNEP, UNDP GEF, FFEM, World Bank, IAH, IAHS, BRGM, BGR, IGME, SIWI, OAS, SADC, AMCOW and other relevant bodies for the execution of groundwater and aquifer related activities;
- develop and manage projects within the regular budget and extrabudgetary programme related to groundwater;

20. In particular develop the following activities:

- UNESCO IHP's Transboundary Aquifer Resource Management programme (ISARM) Set up international, regional and national working groups; and establish Case Studies in Latin America, North & South Africa, Europe & Central Asia. Facilitate the implementation of the UN General Assembly Resolution on the Law of transboundary aquifers. Develop instrument for the Transboundary Aquifers management.
- Groundwater resources for Emergency Situation (GWES)
- Groundwater and Climate Change (GRAPHIC)
- Artificial recharge and managing groundwater recharge (MAR)
- GEF projects related to groundwater and transboundary diagnostic assessment in different regions
- Groundwater and Ecosystems
- carry out joint activities with IAEA on application of isotopes techniques on water resources (JIIHP)
- WHYMAP
- lead the organization of the "UNESCO/Great Man-Made River International Water Prize"

- coordinate with two UNESCO Category 2 new centres as proposed by The Netherlands: International Groundwater Resources Centre, IGRAC, and Libya: Regional Centre on Shared Aquifer Resources Management, RCSARM.
- establish reliable global data and information on groundwater resources, including aquifer locations and characteristics compiled.

ENDORSEMENT OF THE BUREAU

21. The Bureau may wish to endorse the proposal for the creation of a new section on Groundwater Resources and Aquifer Systems and present the proposal to the Assistant Director-General for Natural Sciences for his consideration and approval as well as implementation during the next biennium, 2010-2011.

GLOSSARY

AMCOW	African Ministerial Commission on Water
BRGM	French Geological Survey
BGR	German Geological Survey
FAO	Food and Agriculture Organisation
FFEM	French Programme of the GEF
GEF	Global Environmental Facility
GRAPHIC	Groundwater Resources Assessment under the Pressures of Humanity and Climate Change
GWES	Groundwater in Emergency Situations
IAEA	International Atomic Energy Agency
IAH	International Association of Hydrogeologists
IAHS	International Association of Hydrological Sciences
IGME	Spanish Geological Survey
IGRAC	International Groundwater Resources Assessment Centre
ISARM	International Shared Aquifer Resources Management
JIIHP	Joint International Isotopes in Hydrology Programme
MAR	Managing Artificial Recharge
OAS	Organisation of the American States
RCSARM	Regional Centre for Shared Aquifer Resources Management
SADC	South African Development Community
SIWI	Swedish International Water Institute
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission of Europe
UNECSWA	United Nations Economic Commission for South Western Asia
UNEP	United Nations Environment Programme
UNGA	United Nations General Assembly
UNILC	United Nations International Law Commission
WHYMAP	World Hydrological Map
WWAP	World Water Assessment Programme

ANNEX

