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Internal Oversight Service
Evaluation Section

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Evaluation of Phase VII (2008-2013) of the International Hydrological Programme

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Structure of the report

- Summary and key recommendations
- Management response
- Part I of the evaluation
- Part II of the evaluation
- Terms of Reference (parts I and II)

Summary and key recommendations

Introduction

The external evaluation of the seventh phase[1] of the International Hydrological Programme (IHP) was requested by the IHP Bureau at its 49th session. The Bureau stressed the need for a clear articulation between the evaluation and the eighth phase of IHP, suggesting that the focus should be on water security challenges and opportunities for the future and less on past experiences. Consequently, the evaluation of IHP-VII was defined as a forward-looking exercise with the purpose of generating action-oriented recommendations for the IHP Intergovernmental Council, the Secretariat and others as a basis for improving the IHP towards the future. The evaluation was divided into two parts. Part I was the most extensive part of the evaluation. Part II, building on the findings of Part I, focused on partnerships and fundraising. The evaluation was managed by UNESCO's Internal Oversight Service (IOS) in collaboration with the IHP Secretariat and the Executive Office of the Natural Sciences Sector. Part I was carried out by two external consultants (academics in the field of hydrology) and part II by one external consultant (water policy expert). The evaluation was carried out with limited resources in a relatively short time frame and relied mostly on available documents and data and interviews with key stakeholders.

The evaluation (part I and II) concluded that "this is a critical time for UNESCO-IHP. Funds are much reduced, the number of competitors has increased rapidly, and there are issues with lack of motivation in some areas. The Secretariat has run Phase VII relatively well, given limited means and some obstacles. (…) The implementation of the IHP Programme VII was successful overall, and it left a rich balance of lessons to further enhance IHP's impact in the years to come. (…) But unless some quite drastic changes are implemented, IHP will continue to cede ground to competitors and lose its global prestige. This is also an opportunity. But it is one with a limited timeframe."

Recommendations

The evaluation generated a considerable number of recommendations, with some overlap between the two parts. The list presented below constitutes a balanced summary of the main recommendations of the evaluation, as transmitted by IOS. Further details on these recommendations can be found in the final sections of the part I and part II reports, which will be available on the IOS website.[2] The main recommendations are:

1. Strengthen the 'UNESCO Water Family' as a global network of expertise on water
   a. Within the framework of the IHP, strengthen the coordination mechanisms and communication lines within the 'UNESCO Water Family'
   b. Promote and strengthen collaborations between different institutional entities within the 'UNESCO Water Family'[3]
   c. Develop and implement attractive and clear entry and exit mechanisms for institutions and professionals as a basis for a more strategic and coherent process of expansion of the network

[1] 2008-2013.

[2] http://www.unesco.org/ios

[3] Including a better articulation of the work conducted by WWAP, UNESCO-IHE and the Category 2 Centers with the IHP.

d. Revitalize and increase support for national IHP committees.

2. Raise the profile of the IHP by developing strategies on communication, publication and branding, and ensuring their effective implementation
   a. Improve the IHP website
   b. Focus on flagship publications
   c. Strengthen IHP's knowledge management function on the water policy and science nexus
   d. Consider developing a data portal
   e. Allocate adequate resources to branding and visibility

3. Clearly position IHP and the 'UNESCO Water Family' in the global landscape of water institutions and strengthen collaborations with selected institutions

4. Develop mechanisms to facilitate the participation and/or consultation of all Member States in IHP decision-making mechanisms

5. Strengthen the Secretariat
   a. Restructure the Secretariat into a more flexible organizational entity
   b. Improve the human resource base by bringing in more diverse expertise and linking performance to career advancement
   c. Simplify internal administration and reporting through (e.g.) a better division of labor and rethinking the units of analysis for reporting

6. Strengthen the financial sustainability of the IHP
   a. Create a multi-donor trust fund
   b. Consider employing a professional fundraiser
   c. Clarify the rationale behind the allocation of UNESCO regular programme budget funds within the expected results that relate to water activities

7. Improve the design and implementation of the IHP phases
   a. Consider reducing the length of the phases or developing a more flexible 'rolling' strategy to better address emerging themes and challenges
   b. Strengthen the reporting (and monitoring and evaluation) framework of IHP programmes, UNESCO-IHE, WWAP and Category 2 Centers
   c. Strengthen the focus (in line with IHP's comparative advantages) of the new strategic plan

The evaluation also recommends that a Task Force should be set up to address these sets of recommendations.

Management response

Recommendation	Management response by the IHP Secretariat (July 2014)
1. Strengthen the 'UNESCO Water Family' as a global network of expertise on water	
a. Within the framework of the IHP, strengthen the coordination mechanisms and communication lines within the 'UNESCO Water Family'	Accepted.
b. Promote and strengthen collaborations between different institutional entities within the 'UNESCO Water Family'[4]	Accepted.
c. Develop and implement attractive and clear entry and exit mechanisms for institutions and professionals as a basis for a more strategic and coherent process of expansion of the network	Accepted.
d. Revitalize and increase support for national IHP committees.	Partially accepted – the IHP National Committees are national institutions largely under the purview of Member States; the IHP Secretariat can assist by providing information to Member States and partially facilitating some aspects of the process but its role is limited.
2. Raise the profile of the IHP by developing strategies on communication, publication and branding, and ensuring their effective implementation	
a. Improve the IHP website	Accepted – the IHP stands ready to improve the website; however, this recommendation has implications for the wider UNESCO policy on communications and its implementation is dependent upon action by other Sectors.
b. Focus on flagship publications	Accepted– the IHP stands ready to improve the publications focus; however, this recommendation has implications for the wider UNESCO policy on publications and its implementation requires action by other Sectors.
c. Strengthen IHP's knowledge management function on the water policy and science nexus	Accepted.
d. Consider developing a data portal	Partially accepted – the financial implications of the portal will need to be considered in detail before the activity is accepted or rejected.
e. Allocate adequate resources to branding and visibility	Accepted.
3. Clearly position IHP and the 'UNESCO Water Family' in the global landscape of water institutions and strengthen collaborations with selected institutions	Accepted.
4. Develop mechanisms to facilitate the participation and/or consultation of all Member States in IHP decision-making mechanisms	Accepted.

[4] Including a better articulation of the work conducted by WWAP, UNESCO-IHE and the Category 2 Centers with the IHP.

5. Strengthen the Secretariat a. Restructure the Secretariat into a more flexible organizational entity b. Improve the human resource base by bringing in more diverse expertise and linking performance to career advancement c. Simplify internal administration and reporting through (e.g.) a better division of labor and rethinking the units of analysis for reporting	Partially accepted – the IHP stands ready to strengthen the secretariat; however, all parts of this recommendation would require strong involvement and support from UNESCO's senior administration, at a time when a complete restructuring process has just been completed.
6. Strengthen the financial sustainability of the IHP a. Create a multi-donor trust fund b. Consider employing a professional fundraiser c. Clarify the rationale behind the allocation of UNESCO regular programme budget funds within the expected results that relate to water activities	Accepted – the IHP stands ready to create such fund, assuming that UNESCO regulations allow its implementation. Accepted – this possibility will be considered; however, it may not be possible due to its financial implications and possible modalities of employment. Accepted – this will be done at the IHP thematic level as UNESCO moves from RBM into RBB over the course of the current quadrennium.
7. Improve the design and implementation of the IHP phases a. Consider reducing the length of the phases or developing a more flexible 'rolling' strategy to better address emerging themes and challenges b. Strengthen the reporting (and monitoring and evaluation) framework of IHP programmes, UNESCO-IHE, WWAP and Category 2 Centers c. Strengthen the focus (in line with IHP's comparative advantages) of the new strategic plan	Partially accepted – IHP Phases are linked with C/4 periodicity and as such should be maintained; however its implementation can be prioritized and revised at the middle of the phase (i.e. in 4 year periods). Accepted – within the possibilities of available staff resources. Accepted – this recommendation will be passed to the Council and task force for IHP-IX when constituted.

Part I of the evaluation report

Evaluation Report
IHP-VII
2008-2013

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ACRONYMS AND ABBREVIATIONS

ADG	Assistant Director General
AFD	French Development Agency
AMCOW	African Ministers' Commission on Water
AP FRIEND	Asia-Pacific section of FRIEND
AU	African Union
BGR	German Federal Institute for Geosciences and Natural Resources
BRGM	Bureau de Recherches Géologiques et Minières
CAZALAC	Water Centre for Arid and Semi-arid Zones of Latin America and the Caribbean
CEHICA	Centro para la Gestión Sostenible de los Recursos Hídricos en los Estados Insulares del Caribe
CGMW	Commission for the Geological Map of the World
CHy	Commission for Hydrology
CIH	International Hydroinformatics Centre
Dir SC/HYD	Director of the Division of Water Sciences
DPC	Decade Programme on Capacity Development
DRC	Democratic Republic of Congo
EHP	EcoHydrology Programme
ENVIRONET	Network of Environmental Management and Remediation
ERCE	European Regional Centre for EcoHydrology
ESCWA	Economic and Social Commission for Asia
EU	European Union
EURO FRIEND	European section of FRIEND
FAO	Food and Agriculture Organisation
FO	Field Offices
FRIEND	Flow Regimes from International Experimental and Network Data
FUST	Flanders UNESCO Science Trust Fund
GEF	Global Environmental Facility
GEMS	Global Environmental Monitoring System
GGIS	Global Groundwater Information System
GHG	Green House Gas
GIWA	Global International Waters Assessment
GNIP	Global Networks of Isotopes in Precipitation
GNIR	Global Networks of Isotopes in Rivers
GPCC	Global Precipitation Climatology Centre
GRAPHIC	Groundwater Resources Assessment under the Pressures of Humanity and Climate Change
GRDC	Global Runoff Data Centre
GW	Groundwater
G-WADI	Water and Development Information for Arid Lands – A Global Network
GWAHS-CS	Groundwater and Human Security-Case Studies
GWES	Groundwater Emergency Systems
GWI	Global Water Initiative
HELP	Hydrology for Environment. Life and Policy

HidroEX	International Centre for Education, Capacity Building and Applied Research in Water
HQ	Headquarters
HTC KL	Humid Tropics Centre Kuala Lumpur
HWR	Hydrology and Water Resources Programme
IAEA	International Atomic Energy Agency
IAH	International Association of Hydrogeologists
IAHR	International Association of Hydro-Environment Engineering and Research
IAHS	International Association of Hydrological Sciences
ICC	International Coordinating Council
ICHARM	International Centre for Water Hazard and Risk Management
ICID	International Commission on Irrigation and Drainage
ICIWaRM	International Centre for Integrated Water Resources Management
ICOLD	International Commission on Large Dams
ICSU	International Council for Science
IDF	Rainfall Intensity Duration Frequency
IDI	International Drought Initiative
IDMP	Integrated Drought Management Project
IFI	International Flood Initiative
IGC	Intergovernmental Council
IGO	Intergovernmental Organisation
IGRAC	International Groundwater Resources Assessment Centre
IHA	International Hydropower Association
IHD	International Hydrological Decade
IHE	Institute for Hydrological Engineering
IHP	International Hydrological Programme
IMF	International Monetary Fund
IOC	International Oceanographic Commission
IOS	Internal Oversight Office
IRBM	Integrated River Basin Management
IRD	French Public Science and Technology Research Institute
IRTCES	International Research and Teaching Centre on Erosion and Sedimentation
ISARM	Internationally Shared Aquifers Resources Management Programme
ISDR	International Strategy for Disaster Reduction
ISI	International Sediment Initiative
ISOHIS	Global Network of Isotopes in Precipitation and Isotope Hydrology Information System
IT	Information Technology
IUCN	International Union for the Conservation of Nature
IWA	International Water Association
IWHA	International Water History Association
IWMI	International Water Management Institute
IWR	US Army Institute for Water Resources
IWRA	International Water Resources Association
IWRM	Integrated Water Resource Management
JIIHP	Joint International Isotopes in Hydrology Programme
LAC	Latin America and Caribbean

LDC	Least Developed Country
LEDC	Least Developed Country
LL.M	Master of Laws
MAB	Man and the Biosphere Programme
MAR	Managed Aquifer Recharge
MDGs	Millennium Development Goals
MED FRIEND	Mediterranean section of FRIEND
MIT	Massachusetts Institute of Technology
MS	Member State/s
MSc	Master of (natural) Science
Nat. Sci.	Natural Sciences
NGO	Non-Governmental Organisation
NOAA	National Oceanic and Atmospheric Administration
OECD	Organisation for Economic Co-operation and Development
PCCP	Potential Conflict to Cooperation Potential
pdf	potable data format
PhD	Doctoral Degree
PPP	Public Private Partnership
PUB	Prediction in Ungauged Basins
RCUWM	Regional Centre on Urban Water Management
Rio+20	United Nations Conference on Sustainable Development, Rio de Janeiro 2012
SADC	Southern African Development Community
SIDS	Small Island Developing States
SISTER	System of Information on Strategies, Tasks and the Evaluation of Results
SIWI	Stockholm International Water Institute
SPO	Strategic Priority
TBR	Transboundary Biosphere Reserves
TV	Television
TWAP	Transboundary Waters Assessment Programme
UCS	Union of Concerned Scientists
UGROW	Urban GROundWater
UK	United Kingdom of Northern Ireland and Great Britain
UN	United Nations
UN-CECAR	University Network for Climate and Ecosystems Change Adaptation Research
UNCSD	United Nations Commission on Sustainable Development
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational Scientific and Cultural Organisation
UNICEF	United Nations Children's Fund
UNILC	United Nations International Law Commission
UNITAR	United Nations Institute for Training and Research
UNU	United Nations University
UNU-EHS	United Nations University Institute for Environment and Human Society

UNU-INWEH	United Nations University Institute for Water, Environment and Health
UNU-ISP	United Nations University Institute for Sustainability and Peace
UN-Water	United Nations coordinating mechanisms for Water
UNW-DPC	United Nations Water Decade Programme on Capacity Development
US	United States of America
USD	US Dollar
UWC	University of the Western Cape
UWMP	Urban Water Management Programme
WHO	World Health Organisation
WHYMAP	World-wide Hydrogeological Mapping and Assessment Programme
WISER	Water Isotope System for Data Analysis, Visualization, and Electronic Retrieval
WMO	World Meteorological Organisation
WRDM	World Report on Drought Management
WSP	Water and Sanitation Program
WSSCC	Water Supply and Sanitation Collaborative Council
WTO	World Trade Organisation
WWAP	World Water Assessment Programme
WWC	World Water Council
WWDR	World Water Development Reports
WWF	World Water Forum

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(i) EXECUTIVE SUMMARY

This is a critical time for UNESCO-IHP. Funds are much reduced, the number of competitors has increased rapidly, and there are issues with lack of motivation in some areas. The Secretariat has run Phase VII relatively well, given limited means and some obstacles. But unless some quite drastic changes are implemented, IHP will continue to cede ground to competitors and lose its global prestige. This is also an opportunity. But it is one with a limited timeframe.

Purpose, scope and methodology

The present evaluation was requested by the IHP Bureau at its 49th session, held at the end of June 2013 in Paris, with the main objective of drawing lessons from IHP-VII in order to develop a forward-looking perspective informing the implementation of the following VIIIth phase (2014-2021)[5].

The scope of this review comprises three focal points, namely:
(i) content-related aspects of IHP covering its role and 'comparative advantage';
(ii) administrative-organisational issues relating to the IHP network; and
(iii) the IHP Secretariat, capacity and organisation.

Relevant information was obtained from three major sources:
(i) a desk study of the documentation provided to us by the IOS (218 documents, 9911 pages);
(ii) documentation sourced by the authors from elsewhere (e.g. internet), interviews conducted in various ways with partners suggested by IOS and additional ones selected by the authors, and
(iii) questionnaires sent to 12 different categories of sampling populations identified by IOS.

In total 596 individuals and entities were approached of which 124 responded (15%). While the review of existing documentation assisted in forming a broader understanding of IHP, original and critical insights were mainly derived from the interviews and questionnaires. Instead of attempting a comprehensive appreciation of achievements of IHP-VII, the limited resources were used mainly to identify shortcomings and challenges. Invariably, this approach carries the risk of critical statements dominating the assessment. Being aware of this risk,

[5] Whilst the Bureau originally suggested that internal review mechanisms of UNESCO could be employed in order to reduce associated financial requirements the evaluation has finally been conducted externally and jointly coordinated by the IHP Secretariat and the Internal Oversight Office (IOS) of UNESCO. Resources allocated to this evaluation are considerably less than for previous assessments which involved teams of five and more assessors working over 6 months compared to two assessors and less than 2.5 months, a period that falls significantly short of the nine months proposed in the IHP-V review as minimum period for an evaluation. As a result of this limitation it was agreed that the original Terms of Reference (ToR) be split in two with the second part focusing on funding aspects to be addressed in a separate follow-up review.

the authors would like to stress that the report should not be perceived as ignoring achievements or be used to compare with possibly less critical assessments of competing programmes unduly disadvantaging IHP, but rather seen as a constructive effort to improve IHP and ensure its long-term future.

Main findings

Overall, the Programme has been successful in producing many "action-oriented and policy-relevant" activities and outcomes. The strength of the Secretariat and the Division of Water Sciences lies in enabling and collating rather than conducting original research itself. In this respect, the claim that the IHP "*promotes* leading edge research" is true. IHP-VII has clearly provided support to the "global agenda for sustainability", particularly through training and capacity building in water governance, although many aspects will take time to show unequivocal results, especially as a new generation puts their training into action.

However, this is a critical time for UNESCO-IHP. Regular core funding is much reduced, the number of competitors has increased rapidly, and there are increasingly issues with lack of motivation to participate in IHP activities in some areas. After an extended period with interim directors, the Secretariat has regained control and completed Phase VII relatively well, given limited means and some obstacles. But unless substantial changes are implemented, IHP will continue to cede ground to competitors and lose its global prestige.

This is also an opportunity, but it is one with a limited timeframe. First and foremost, several issues raised time and again in previous evaluations have not been acted upon, even IGC resolutions. This cannot continue as lack of implementation has played no small part in the present status.

How may UNESCO-IHP maintain its global position and adapt to meet the emerging challenges? Many scientists see IHP programmes as failing. Yet many international organisations within and outside the UN system see IHP doing good work and having a strong global cachet, derived from its worldwide networks, the UNESCO brand, the ability to propose conventions and pro-actively prevent, address and resolve water conflicts, as well as its contributions to the World Water Development Reports and to developing nations in particular.

IHP needs to monitor its competitors, new and old, fill gaps or find new collaborators. Overlapping programmes are only a problem for IHP when: (i) the competitor is better able to address the theme; and (ii) competition for funds reduces receipts and therefore capacity to deliver for each applicant. Different approaches to identical topics are, however, generally to be welcomed.

Unfortunately, not everything in the system is fit for purpose. Underfunding, staff reductions and the recent lack of a permanent Director have all contributed to management problems at the Secretariat. Staff workloads are high, evaluation procedures ineffective and bureaucracy so heavy it is detrimental as well as not delivering the intended benefits.

But there are wider problems in the worldwide networks. Many IHP National Committees in the LDCs, where the IHP has most to offer, are dysfunctional or inoperative. Some complain their voice is not heard at the Secretariat in Paris. A number of National Committees in developed countries

are also drifting away for a variety of reasons, particularly lack of perceived value for money. As these countries are generally the donor nations for UNESCO, this is cause for serious concern.

Many Member States amongst the LDCs are not engaging because the current hierarchically organised decision-making system is perceived as lacking representation (Appendix VIII). Much of sub-Saharan Africa, with the notable exception of Kenya, has virtually detached itself from IHP and is increasingly relying on its own structures, like the African Ministers' Commission on Water (AMCOW).

Few Water Chairs actively contribute to IHP in a tangible manner. The same applies to many Water Centres.

There is a developing view, strongly held by a number of very senior scientists and engineers, that IHP in general is no longer serving the core sciences and that, in a pejorative sense, UNESCO is doing 'political hydrology'. Some of these scientists hark back to the days when measuring flows in the hydrological system was paramount. Clearly, the world has moved on as regards this issue. However, they have drawn attention to problems with the premier monitoring programmes within the compass of HELP, ISI and FRIEND; problems which are not evident from the documentation. In the course of the evaluation some marked disparities became apparent in a number of other instances between the written reports and statements in interviews. Most written reports give no indication of any form of problem.

IHP is suffering from another issue that is reducing its impact, both real and perceived: poor projection of the IHP brand. Despite previous evaluators recommending that IHP should maintain its advocacy, the situation appears to have worsened. Visibility is low. There is a lack of clear branding of the many good products that have resulted from the programme in recent years as coming from IHP. The IHP logo is very sparingly displayed, sometimes for no better reason than bureaucracy. Logos are a powerful force in the modern world.

IHP is particularly poorly served by the UNESCO website. Many outcomes of IHP projects are hidden away, either embedded in long lists of UNESCO 'publications' which include many abbreviated minutes of meetings, or in separate sections of the UNESCO website. Navigation is poor. An enlisted marketing expert critically assessed the web presentation of IHP as a basis for improvements, which are outlined in the section on Raising the Profile of IHP. The assessment also points to the need for more high-profile publications and for publishing end-of-phase reports to publicise the Programme's achievements.

All of the serious competitors, which in some instances are also collaborators, have better websites, more comprehensive lists of publications and more visible branding of products. Even many individual Programmes of IHP present themselves better on separate websites.

Bureaucracy within UNESCO and the Secretariat is high, and often counter-productive and ineffectual. Staff report spending an average of 70% of their time on administration, mainly internal bureaucracy, which takes time away from focusing on actual IHP work. All the competitors interviewed, both inside and outside the UN system, thought UNESCO-IHP suffers worse bureaucracy than themselves. An impression recently confirmed by academic research.

Internal assessment procedures account for some of this workload and need to be seriously reconsidered. The project tracking and assessment system introduced a few years ago is not as effective as external peer-reviewing. Self-reporting often tends to provide a false sense of achievement. Ways of improving or replacing existing systems, such as SISTER, should be explored.

Reduced core funding is a serious threat to IHP at all levels from individual Member States to the Secretariat and UNESCO. At headquarters, it has caused loss of staff and contributed to increased workloads and staff frustration. It is likely to increase the stresses experienced in running IHP-VIII. Already, some of the more active Member States are considering cutting down on input and more National Committees are becoming less effective or withdrawing. This can be exacerbated by reduced funding from governments, universities and other donors to certain Category II Centres.

The large slice of the Division's budget that is spent on Science Field Offices (40%) needs reviewing, given that most offices do not appear to be contributing much, if anything, to the water Programme.

At the same time, the Secretariat has to raise more extrabudgetary funds in an increasingly competitive environment, if it is to continue to operate the wide range of activities set out in the latest Strategic Plan. It will require strong leadership to drive through such fundamental change to generate funding, but it is a *sine qua non* for survival. IHP may take a lead from UNESCO-IHE regarding innovative and systematic attraction of funds from external donors.

After the global network of IHP rapidly expanded over the past decade, during which two thirds of all water centres and chairs were added, it became increasingly difficult and burdensome to maintain coherence and meaningful collaboration between members of the large and diverse network. Special and continuing — as opposed to *ad hoc* — attention is required to reinvigorate links between all levels of the global network and create the synergy needed to halt further disintegration. Gaps are already apparent in communication: lack of knowing who to contact, lack of appreciative feedback on jobs well done, lack of participation in activities, groups going their own way or transferring allegiance to other organisations, and a commonly expressed feeling that politics are often hampering the development and application of the water science.

Water-related Centres and Chairs can play an important role in IHP implementation and constitute a key strength of the UNESCO network. However, the unchecked proliferation of UNESCO-affiliated Centres and Chairs carries a reputational risk for UNESCO, especially in cases where new additions deviate from common goals or are inactive altogether.

A need for better feedback is indicated by a survey conducted as part of this evaluation, where the clear majority of international water professionals who participated in IHP Programmes report they were unhappy or only partially happy with the support received from central administration (Appendix III, question 7).

Main recommendations

Presented below is a selection of the most urgent and fundamental recommendations. A more detailed list can be found at the end of the report.

1. Improving links and motivation within the UNESCO Family global network

There is an urgent need to improve control, motivation, communication and work efficiency in a number of elements of the Water Family.

1.1 Existing Water Centres and Chairs need to be encouraged to contribute more directly to IHP Phases and Programmes.

1.2 New Water Centres and Chairs should be bound by statutes and assessment procedures to thus contribute, and IHP should be more discriminating in establishing them, being proactive in commissioning them when a need arises to serve Phases or Programmes.

1.3 Assessment procedures of existing Centres need to be more effective and swift.

1.4 A Task Force should aim to determine which Field Offices and professional scientific staff are contributing to IHP with a view to seeking a reduction in the large financial outlay on those not contributing.

1.5 Members of the network should receive feedback on their work and praise where it is due.

1.6 Lines of communication need to be improved, so people know their line managers, who to contact, who is doing what in their region and globally.

1.7 Many National IHP Committees need to be more closely engaged with IHP and a thorough review is needed on how to motivate them. The problems are most severe in developing countries, where most Committees are inactive, but there are also signs of some in developed countries losing motivation. The solutions for each will be different, but they should begin with fact-finding approaches.

1.8 Attention is needed to repair problems in HELP, ISI and parts of FRIEND.

1.9 Successful collaborations need continued fostering.

2. Improving operation of the Secretariat

2.1 Restructuring of the Division has already been considered by UNESCO's management, but we propose taking this further and eliminating the sections altogether in order to increase flexibility to meet rapidly changing global challenges.

2.2 Permanent staff skills should be diversified to include social scientists as well as natural scientists in order to meet the needs of current water resource issues.

2.3 Ways of supplementing the reduced number of permanent staff should be explored, including offering sabbaticals to mature scientists and engineers with a wide work experience and encouraging young

graduates to obtain work experience in the Secretariat, in which the Prize for young scientists proposed in 2010 could play a part.

2.4 Serious consideration should be given to reducing the high levels of bureaucracy at both the UNESCO and Division levels in order to reduce the unacceptably high workloads of staff, which are taking time away from productive work.

2.5 Operational procedures in the IGC and Bureau impact upon the operation of the Secretariat in numerous ways and they should be reviewed with the aim of improving inclusivity in decision-making whilst also increasing efficiency. This means searching for ways of engaging Member States that currently feel excluded from decisions and consequently lack motivation to engage in projects.

3. Raising the profile of IHP

3.1 In order to compete for public attention, to attract able scientists, engineers and managers to projects, to engage young people at school and university, and to influence potential donors of extrabudgetary funds, IHP must increase its visibility and present itself more effectively.

3.2 The first thing that is needed is a thorough overhaul of the website, presenting the achievements and publications in a clear and attractive manner, improving navigation and ensuring regular updates.

3.3 Ensure that the IHP logo is used on every possible occasion, on all publications and supplementary websites, including cooperative projects.

3.4 Results of projects should be published as soon and visibly as possible. Most importantly of all, this should include collation and publication of all results after the end of a Phase and resources need to be specifically set aside for this.

3.5 Publications in high-profile scientific and managerial journals should be further encouraged along with insistence upon clear acknowledgment of IHP contributions.

3.6 Consider establishing a data portal with links to international water-related databases to encourage hits from the research community.

4. Dealing with reduced core funding

4.1 IHP needs to respond to reduced future funding with a thorough review of its budget and its requirements, focusing on activities that IHP is most able to deliver and reallocating funds accordingly.

4.2 IHP needs to become more innovative in raising more extrabudgetary funds by exploring the possibilities of sponsorship from business in Public Private Partnerships, contingent upon safeguards for independence.

4.3 Employing a professional fund-raiser to assist staff in raising extrabudgetary funds would ensure greater probability of successful approaches and relieve the work burden on staff.

4.4 A review is needed on the large amount of regular funds that goes out to Field Offices with little in return.

5. More efficient collaboration within UN-Water and beyond

5.1 The management of UN-Water should strive for closer cooperation between the members. The appointment of the Director of the Division of Water Sciences and Secretary of IHP to the Vice-chair of UN-Water offers an excellent opportunity for much needed closer collaboration.

5.2 IHP needs to foster the good working relations enjoyed with entities within UNESCO and UN-Water, such as UNESCO-IHE and WMO.

5.3 IHP should seek to rekindle or establish new working relationships with many major players that offer extra capabilities but have not been engaged in recent projects. Such organisations could include ICOLD, OECD and IUCN amongst others, as appropriate for future projects.

5.4 Relations need to be improved with IAHS, which has contributed significantly to the successful work of IHP in the past.

5.5 IHP should be open to considering collaboration with other appropriate charities and NGOs that it has not collaborated with in the past, but which may offer cost-effective assistance, including valuable local contacts on the ground.

6. Design and operation of Phases

6.1 The formulation and delivery of Strategic Plans need to be reviewed: objectives, activities, outcomes and benchmark results should be formulated in a manner that makes them more testable and where possible more amenable to quantitative evaluation. This should involve rigorous checks at the outset for deliverability by balancing specificity against generality.

6.2 Implementation Plans need to formulated and acted upon.

6.3 IHP should review whether Phases should be as long as 8 years, whether the range of Themes is too broad or supportable with the available resources, and even whether Phases are the most appropriate structure for the future.

6.4 Strategic Plans should focus on what IHP does best, capitalising on its 'unique advantages'. These include work on transboundary issues and conflict resolution.

6.5 We recommend a Task Force be established to monitor emerging issues and focus of competitors. Flexibility must be the watchword in a rapidly changing environment.

6.6 There is a strong need for post-Phase reporting and evaluation. This should include timely collation and publication of end of phase reports, and consulting and obtaining feedback from end-users, perhaps after the lapse of a suitable 'bedding in' period, neither of which are current practice. Most importantly of all, resources need to be specifically set aside for this.

6.7 Consider reducing the range of topics covered and filter the requests from Member States more rigorously, considering the resources available and the practicalities of supporting a given theme.

6.8 More encouragement should be given to scientific staff to publish results in international journals.

1. BACKGROUND, SCOPE AND METHODOLOGY

1.1 Background

The International Hydrological Programme (IHP) is the only intergovernmental programme of the UN system entirely devoted to water research, water resources management, and education and capacity building. The programme, tailored to Member States' needs, is implemented in phases lasting several years.

IHP-VII, the seventh phase of the IHP, comprises the Programme's strategic priorities for the six-year period 2008-2013. The IHP-VII Strategic Plan (IHP/2009/IHP-VII/1) was first developed on the basis of a concept discussion paper, prepared by a task force of external experts established by the IHP Bureau at its 35th session in 2003. The draft Strategic Plan was endorsed by the IHP Council at its 17th Session on 3-7 July 2006. A consolidated version was prepared based on further comments by the IHP Bureau, IHP National Committees, UN Agencies, IGOs, and NGOs. The Strategic Plan was approved by IHP Council members on 1 September 2007. During its 18th Session on 9-13 June 2008 the Intergovernmental Council of IHP confirmed its ample and categorical support to the implementation of the seventh phase of the IHP (IHP-VII), taking note that over 80 Member States had actively participated in the preparation of the strategic plan of IHP-VII.

The IHP-VII Strategic Plan sets out the strategic vision and programmatic framework for IHP's seventh phase of activity of six years (2008-2013). The phase has been titled: 'Water Dependencies: Systems under Stress and Societal Responses'. Its main aim has been to produce policy-oriented results to the benefit of Member States. The core pillars of IHP-VII, structured into themes and focal areas, are the following:

- Promoting leading edge research that provides timely and appropriate policy-relevant advice to Member States;
- Facilitating education and capacity development as a response to the growing needs linked to sustainable development;
- Enhancing governance in water resources management to achieve ecosystem sustainability.

Throughout the implementation of the seventh phase, the Programme has targeted its main audience, UNESCO's Member States, through the IHP National Committees and in collaboration with a myriad of partners including different members of the 'UNESCO Water Family' (e.g. WWAP, Category I and II Institutes, UNESCO Chairs) other governmental bodies, non-governmental organisations as well as other academic and research institutions.

IHP-VII is expected to be a key contributor to the achievement of the following two expected objectives, as specified in the 34 C/4 Medium-Term Strategy for UNESCO: "UNESCO's leadership for United Nations system activities in the areas of freshwater and the oceans at the global and national levels firmly

established, including in United Nations system country programming exercises" and "Global monitoring reports produced periodically for the state of freshwater and the oceans."

The present evaluation was requested by the IHP Bureau, at its 49th session. The timing of the previous evaluation (IHP-VI) did not coincide with the IHP policy cycle, as a result of which the evaluation's findings were not optimally used in the design and implementation of IHP-VII. Consequently, the Bureau stressed the need for better alignment between the current evaluation and the commencement of the next Phase (IHP-VIII). In addition, the Bureau suggested that the focus of IHP's evaluation should be on water security challenges and opportunities for the future and less on past experiences. As a result, the Bureau stressed the need for an efficient and forward-looking evaluation.

1.2 Purpose

In line with the expectations of the IHP Bureau and IGC the main purpose of the evaluation is to draw lessons from IHP-VII in order to develop a forward-looking perspective on the strategic role and implementation capacities and modalities of the IHP-VIII programme.

The evaluation will inform UNESCO's Governing Bodies (including the IHP Council), Senior Management of the Organization and the IHP Secretariat in their decision-making processes on the allocation of financial and human resources, as well as strategic decisions regarding the implementation of the IHP-VIII Phase and achievement of its goals.

1.3 Scope

Drawing on the experience of the IHP-VII Programme, the original scope of the evaluation as stipulated in the Terms of Reference was to develop a forward-looking perspective on the following dimensions:

(i) The role and comparative advantages of the IHP Programme within the framework of the 'UNESCO Water Family'[6] and other UN agencies, taking into account the capacities, results and specific contributions to the global agenda on Water and Development.

(ii) The organisation of the IHP Secretariat and FO staff, reviewing capacities, resources, their geographical and thematic distribution and reporting lines.

(iii) The quality of collaboration and coordination of different partners within the 'UNESCO Water Family' working on Water issues including national commissions and IHP committees.

(iv) Implementation modalities and partnerships, identifying opportunities

[6] A term used to refer to the different UNESCO entities working on water-related issues: IHP, WWAP, UNESCO-IHE, Category 2 Centers working on water-related issues, UNESCO Chairs on water-related issues.

for improved cooperation and fundraising with external partners.

(v) The overall intervention logic of the IHP-VIII programme 2014-2021 taking into account its three strategic axes:
- Mobilizing international cooperation to improve knowledge and innovation to address water security challenges.
- Strengthening the science-policy interface to reach water security at local, national, regional and global levels.
- Developing institutional and human capacities for water security and sustainability. The evaluation will build on the experience (as captured by existing documentation and interviews) of the IHP-VII Programme.

Addressing the above-mentioned scope elements in a satisfactory manner would require quite divergent human capacities in terms of competencies and professional backgrounds. Consequently, the Terms of Reference have been divided into two parts, each part covering specific elements of the scope of the evaluation and with particular requirements in terms of the type of external support needed for its implementation.

The present report covers dimensions (i) to (iii) of the original scope (part I). Dimension (iv) is covered by a separate succinct report (part II). Dimension (v) of the evaluation was cancelled for reasons of timing and available expertise and resources.

Scope of Part 1

Part I of the evaluation (the present report) will cover the following aspects of the IHP evaluation:

(i) The role and comparative advantages of the IHP Programme within the framework of the 'UNESCO Water Family' and other UN agencies, taking into account the capacities, results and specific contributions to the global agenda on Water and Development.

(ii) The quality of collaboration and coordination of different partners within the 'UNESCO Water Family' working on Water issues including national commissions and IHP committees.

(iii) The organisation of the IHP Secretariat and FO staff, reviewing capacities, resources, their geographical and thematic distribution and reporting lines.

1.4 Methodology and resources

Organisational aspects: While the IHP Bureau originally suggested that internal review mechanisms of UNESCO could be employed in order to reduce associated financial requirements the evaluation has finally been conducted externally and jointly coordinated by the IHP Secretariat and the Internal Oversight Office (IOS) of UNESCO.

Consequently, resources allocated to this evaluation are considerably smaller than for previous assessments which involved teams of five and more assessors working over 6 months compared to two assessors and less than 2.5 months, a period falling significantly short of the nine months proposed in the IHP V review as minimum for such an evaluation.

As a result of this limitation it was agreed that the original Terms of Reference (ToR) are split in two with the second part focusing on funding aspects to be addressed in a separate follow-up review. The scope of this review comprises three focal points covering two different types of areas, namely contents-related aspects of IHP's (i] role and 'comparative advantage' with the wider UN-System and administrative-organisational issues relating to the IHP network (ii) and its Secretariat (iii). The detailed ToR is provided in Appendix VI.

Sources of information: Relevant information was obtained from four major sources:

- A desk study of documentation provided to us by the IOS (comprising 218 documents with 9911 pages).
- Documentation sourced by the authors from elsewhere (e.g. internet).
- 52 interviews conducted in various ways (face-to-face, Skype, telephone, email) with partners suggested by IHP and IOS (HQ staff, members of the IHP network).
- Additional interviewees selected by the authors.

In order to increase the representativity of the evaluation the authors attempted to sample all major components and stakeholders of the IHP structure. In total 12 different categories (plus 11 sub-categories) of relevant sampling populations were identified and subsequently contacted to obtain data and information.

This was complemented by sending out questionnaires to IHP-related stakeholders such as UNESCO Chairs and Water Centers, UN- and non UN partners and competitors assisted by the IHP Secretariat providing mailings lists and accompanying letters as well as nearly 400 senior water professionals which were contacted on the initiative of the authors via the IGU commission for Water Sustainability. Regarding the provided list of entities to be sampled by the Secretariat, the absence of IHP National Committees of Member States was notable. Given that these Committees are the end users of IHP that ultimately legitimise the Programme, their omission from the evaluation would be of concern. Five National IHP Committees from 168 Member States were finally included in the data collection.

In total 596 individuals and entities were eventually approached in this way achieving a sampling rate of 72% of the totality of identified stakeholders (n = 824). Of those approached in the various ways ultimately 100 responded

resulting in an average response rate of 12%. Of the 100 individuals who responded 57 are directly related to IHP in some way or another (including staff at the Secretariat, Regional hydrologists, Water Chairs and Centres etc.) while 41 were non-directly related water scientists of which 25 had been involved in IHP either in the past or at present (Table 1). The remaining two entities comprise other water-related organisations.

TABLE 1: Categories of IHP relevant sampling populations including methods of data gathering, sampling rates and response rates used in this evaluation

Sampled population		Total no.	Method of data collection										
Main category		(in 2014)*	**Interviews** (face-to		**Questionnaires** (various types)			**Personalised email requests**			**Total sample**	
	sub-structure		no.	sample rate	sent out	replies	response rate	sent out	replies	response rate	no	sample rate
IHP Secretariat/ Hydr. Sci staff	**total**	**32**	**11**	**34%**				**6**	**6**	**100%**	**11**	***34%***
	permanent	*19*	*9*	*47%*				*6*	*6*	*100%*	*9*	*47%*
	consultants	*7*	*1*	*14%*							*1*	*14%*
	(unpaid) seconded	*1*	*1*	*100%*							*1*	*100%*
	administrative, interns	*5*	*0*	*0%*							*0*	*0%*
UNESCO Water Chairs	**total**	**31**			**31**	**4**	**13%**	**1**	**1**	**100%**	**5**	***16%***
UNESCO - IHE (Cat. I centre)	**total**	**1**	**1**	**100%**	**1**	**0**	**0%**	**2**	**0**	**0%**	**1**	***100%***
UNESCO Water Centres (Cat. II)	**total**	**25**			**25**	**10**	**40%**	**1**	**1**	**100%**	**11**	***44%***
UNESCO Science Field officers	**total**	**60**			**60**	**4**	**7%**				**4**	***7%***
IHP Regional Hydrologists	**total**	**5**			**5**	**3**	**60%**				**3**	***60%***
IHP National Committees	**total**	**168**	**3**	**2%**	unknown	**1**	unknown	**1**	**1**	**100%**	**5**	***3%***
IHP Programmes	**total**	**10**	**3**	**30%**				**4**	**4**	**100%**	**7**	***70%***
UN-Water (members)	**total**	**29**	**1**	**3%**	**25**	**1**	**4%**	**3**	**3**	**100%**	**5**	***17%***
UN Funds and programmes		9			9	0	*0%*	1	1	*100%*	1	*11%*
UN Institutes		*2*			2	0	*0%*				0	*0%*
UN special agencies		9	1	*11%*	9	0	*0%*	2	2	*100%*	3	*33%*
UN Regional Commissions		5			5	1	*20%*	1	1	*100%*	2	*40%*
Non-UN IHP partners	**total**	**67**	1	**1%**				4	4	**100%**	**5**	***7%***
Intergovernmental Org.		*30*	1	*3%*	1	0	*0%*	1	0	*0%*	1	*3%*
International NGOs		*37*	3	*8%*	1	0	*0%*	2	2	*100%*	5	*14%*
UNESCO Environmental Programmes		*4*	1	*25%*							1	*25%*
International water scientists	**total**	**396**			396	31	*8%*	10	10	*100%*	**41**	***10%***
Other water organisations	**total**	unknown						2	2	*100%*	**2**	unknown
Total		**824**	**20**	**2%**	**544**	**53**	**10%**	**32**	**29**	**91%**	**124**	**15%**
method not used								total no. of entities approached			**596**	***72%***

** determined from mailing lists supplied by IHP Secretariat or other sources were not availabe*

Sampling rate = Total no. of population : no. of individual members of population approached;
Response rate = No. of approached members of sample population : no. of usable replies

The highest representativity in terms of response rate to questionnaires was achieved in the category of Regional Hydrologists where 3 out of 5 recipients replied (60% response rate), followed by UNESCO Water Centres (10 out of 25, 40%). Significantly lower rates of response were obtained for UNESCO Water Chairs (4 out of 31 in existence during phase VII; 13%) and Science officers from UNESCO's Field Offices (2 out of 22, which is the approximate number of field staff covered by hydrology staff budget, excluding the 5 regional hydrologists already mentioned; 9%). The resulting response rate of just 7% is slightly lower than that from the 396 IHP-independent water scientists (8%). Much better response rates were achieved by sending personalised emails to selected key informants.

While the review of existing documentation assisted in forming a broader understanding of IHP, original and critical insights were mainly derived from the interviews and questionnaires.

It was also noticed that a large part of documents provided to the authors by the Secretariat and IOS was of little or no relevance to the evaluation. At the same time an internet search yielded a number of UNESCO reports that had a direct bearing including a critical assessment of IHP as part of an evaluation of the Major Programmes and various compilations of reports from IHP National Committees on on-the-ground achievements of the programme.

Limitations: The short timeframe and abundance of material to be reviewed did not allow for in-depth assessment by only two reviewers. Instead of attempting a comprehensive appreciation of achievements the limited resources were hence rather used to identify and focus on shortcomings and challenges in order to improve the Programme as best as possible. Invariably such focus on insufficiencies carries the risk of critical statements being perceived as dominating the assessment. Taking cognisance of this fact the authors plead with readers to not view the report as ignoring achievements by IHP or compare it to possibly less critical assessments of competing programmes unduly disadvantaging IHP, but to regard the criticism as a constructive effort to improve IHP and secure its long-term success.

Further details of the methodology can be found in Appendices V to VII.

2. ACHIEVEMENTS OF IHP-VII – A SUMMATIVE ASSESSMENT

This is a brief assessment aimed at evaluating the extent to which IHP-VII has achieved the goals set out in the Strategic Plan and contributed to the global agenda on Water and Development. It aims to identify strengths and weaknesses in the Programme as an aid to pinpointing aspects that might be improved in future operations.

2.1 Review of evaluative evidence on the relevance and effectiveness of IHP-VII activities and projects

For a number of reasons, this should be taken as indicative only. It is not intended to be as detailed as the assessments undertaken in the evaluations for the previous two phases, IHP-V and IHP-VI. This is partly because of the short time available and the limited number of assessors, and partly because the focus of this evaluation is more directed towards identifying ways of improving the operation of the next phase.

There are a number of reasons why such an exercise can only ever be indicative under the current system. Some of these reasons will form part of our recommendations for the future. They include the undeniable fact that much of the work will take time to produce tangible results. This fact has been noted in previous evaluations. However, we find little evidence of subsequent tracking and reporting of results beyond the period of operation of each Phase. Attention seems to be directed almost exclusively to the operation of the new Phase once that has begun.

A second issue that has been widely commented upon in previous evaluations as well as by people who have been involved in the Programme is the lack of a 'final report' that collates the results from the various Themes and projects. We have worked mainly from the reports recorded at the 20th session of the Intergovernmental Council in June 2012, 18 months before the conclusion of Phase VII, which are the latest available to us, together with those reported at the 19th session covering the first two years of Phase VII. These have been supplemented by information gained during interviews, some of which revealed outcomes and situations somewhat at variance with the Council minutes.

Mapping activities and projects contributing to IHP-VII objectives

The heading on page 17 of the Strategic Plan "*Action-oriented and Policy-relevant – support to the global agenda for sustainability*" must be the yardstick for assessing whether IHP-VII has been a success. The IGC reports reveal a remarkable amount of activity and a good deal of success. The Secretariat is to be commended on handling such a large and diverse programme at the same time as the permanent cross-cutting programmes like FRIEND and HELP. The 19th session of the IGC also reports 15 additional Projects that IHP is involved in

managing to varying degrees during the lifetime of IHP-VII: IHP is actually listed as the Executive Agency for 8 and a partner in at least two.

Just to take a few cases which have produced significant results, although many others deserve recognition: The project on *The Impact of Glacier Retreat in the Andes* is a good example of collaboration that was set in motion by IHP connecting various research teams together. Participants suggest that they would not have joined forces without the incentive of IHP. Another is in issues related to transboundary resources, both in mapping and collaboration with IGRAC and involving the *From Potential Conflict to Cooperation Potential* programme. The material assembled for training in conflict resolution by PCCP is well-constructed and of real practical value in the current environment with potential 'water wars' in a significant number of the shared basins, which comprise two-thirds of the river basins in Africa and Asia. It is the more remarkable since PCCP is run by only 1.5 personnel, yet has over 2000 experts in its contact network. The series of hardback books published by the esteemed Cambridge University Press on *Floods in a Changing Climate* and a product of the IFI programme during IHP-VII is also a significant contribution. Groundwater is another very active and productive area, particularly in its contributions to Focal Area 1.4. The GRAPHIC scientific review "*Beneath the surface of global change: Impacts of climate change on groundwater*", which featured in the top three most downloaded papers in the highly revered *Journal of Hydrology*, is a shining example. Equally, the work with IOC on coastal aquifers and on developing standards for monitoring submarine groundwater funded by GEF, together with case studies, training courses and the *Guide on Groundwater for Emergency Situations* are all examples of work that is of undeniable value to the global community. The contribution to the International Year of Water Cooperation with the hardback UNESCO publication *Free Flow* is also significant, including collaboration from the Dundee Category II Centre and members of the UK IHP Committee in Wallingford, UK.

Much of the work under IHP-VII is devoted to establishing and running symposia, workshops, conferences, seminars, training courses, networking meetings and contributing sessions to conferences organised by third parties. We note many South-South and North-South knowledge transfers in Theme 3. This is essential work and an integral part of delivering the Strategic Plan. They are, however, difficult to evaluate. Published proceedings help in a few cases, although we have not seen evidence of many and in any case they are only relevant for larger conferences and symposia. It is inherently difficult to judge the degree to which many of these activities have resulted in meeting the objectives of capacity building, and certainly very difficult to judge within the short timeframe of focus on the current Phase.

That said, it is worth reviewing the formulation as well as the delivery of the Strategic Plan. The tables in Appendix II give a brief summary of the stated aims, objectives, activities and expected benchmarks for success. We have highlighted those that appear to have been pursued and met. To an extent, this may give an unfair impression for activities *et cetera* that are not highlighted, because there are many activities that are specified in greater detail than the reports cover: a different assessor could easily highlight different activities and outcomes. There are also a number of activities that are reported, but which do not appear explicitly in the Strategic Plan. Similarly, there are a number of

objectives and benchmarks that are too vague to accurately pin down. Quite a number of benchmarks are stated as requiring a 'significant uptake' of guidelines/methodologies *et cetera*, but rarely if ever is there a note in IGC reports that this has been followed up and measured.

The tables in Appendix II are also purely indicative, because where the Strategic Plan simply identifies 'publications' or 'meetings' as benchmarks without specifying numbers, ticking the box as 'fulfilled' underplays cases in which there is a relatively large number of meetings and publications, as is the case in Focal area 1.2. In some cases, far more appears to have been achieved than would be expected from the Plan, e.g. work under ISI in Focal area 1.2, under IFI in 1.3 and collaboration with UNU-EHS and UNU-INWEH as reported in the 19th session of the IGC.

These are just a few of the difficulties of assessing the results. Overall, they point to the inadequacy of this approach and the need for the design of future Plans and future assessments to:

1. Align wording of Plans with reported results.
2. Make objectives, activities, outcomes and benchmark results more amenable to quantitative evaluation.
3. Maintain closer checks on progress at interim stages of the Phase.
4. Use these where necessary to give feedback. The current process appears to end with summary reports to the IGC.

In future, Plans should be rigorously checked at the outset for deliverability by balancing specificity against generality to ensure the results are testable. We note a similar recommendation from the UK IHP Committee in 2011, which called for an Operational Plan for IHP-VII that "allows the Programme to be evaluated against specific criteria both during its execution and subsequently". The same communication called for "a coherent plan for the dissemination of results".

It could be helpful to tabulate aims, activities and benchmarks in a similar format to the tables in Appendix II, as this will highlight issues more clearly than if they are 'buried' in the text. This should make it easier to determine which are quantitatively testable, which are testable qualitatively, and which are not and maybe require reformulating.

We are informed that the final stage of planning for a Phase is the preparation of an Implementation Plan. These Plans were referred to in documentation and in a number of interviews, but none were provided to the evaluators for either IHP-VII or IHP-VIII. Some members of the Bureau also could not recall seeing one. This is of serious concern as they are vital for ensuring a coordinated implementation of agreed actions as well as for monitoring progress.

For the reporting stage, we recommend building into each Theme project a specific requirement to report results at the end of the Phase, and that these results are collated together in a digested presentation and published in an appropriate format. This should involve end-users.

There seems to be a general lack of consultation of end-users. Yet end-users are the prime target of operations. There needs to be a specific requirement to consult end-users. In many, perhaps most, cases this has to mean a programme of follow-up after the end of a Phase in order to decide how effective capacity building, knowledge transfer and adoption of new practices

have been. We cite the following few examples of benchmarks in the IHP-VII Strategic Plan that could require some time before delivery can be fully judged: in Theme 2 *Strengthening water governance for sustainability* the benchmarks "Development of new agreements at national level" (2.3) and "Adoption of internationally agreed norms for sharing resources" (2.4); in Theme 4 *Water & life support systems* the benchmark "Significant uptake of water protection".

Note that the end-users may not be the same as those who have worked on the Programme. In such cases, there needs to be consultation with people, agencies and maybe governments outside of the Programme. This is an aspect that does not seem to be covered at all in the current system, at least not in a systematic and quantifiable way.

This review raised a number of other issues relating to the more permanent IHP Programmes, dissemination of results, and collaboration within the wider UNESCO "Water Family", UN-Water and external institutions, which will be dealt with in detail in the sections on *Competition* and *Collaboration*.

One issue that is pertinent at this point is publications. Again, the number of books and manuals that have been produced, as well as those that have been translated into other languages to aid knowledge transfer are commendable. Even so, many reports are said to be available, like the "*Rainfall Intensity Duration Frequency (IDF) Analysis for the Asia Pacific Region*", yet they are not readily presented as such to the 'general' reader, i.e. persons not directly involved in the project: other scientists and managers would be unlikely to be made aware of many of these reports from their own searches. Those that appear on the UNESCO website are confusingly intermixed with general administrative reports of more interest to UNESCO than to outsiders. Better presentation of publications is needed.

The scientific review paper published in the *Journal of Hydrology* identified above is one of only a few papers reporting in high-calibre international journals. We believe greater encouragement should be given to project coordinators to publish in international journals. Journal papers may not be a prime focus of what is an essentially very practical Programme, but published in the right journal papers can reach scientists, managers and policy-makers who are not directly involved in IHP and so spread the word further. Encouraging and enabling such publications can also increase motivation for scientists in or 'on loan' from universities, where accredited publications have become essential criteria for promotion. Additionally, we suggest that authors should be asked to flag such papers as 'a contribution from IHP' in the publication. This issue is taken up again in section 3 *Competition etc.* under 3.3 *Raising the profile of IHP*.

2.2 Conclusions

Overall, the Programme has been successful in producing many "action-oriented and policy-relevant" activities and outcomes. The strength of the Secretariat and the Division of Water Sciences lies in enabling and collating rather than conducting original research itself. In this respect, the claim that the IHP "*promotes* leading edge research" is also true. IHP-VII has clearly provided support to the "global agenda for sustainability", particularly through training and capacity building in water governance, although many aspects will take time to show unequivocal results, especially as a new generation puts their training

into action. We experienced a number of difficulties whilst undertaking this assessment and the follow-up interviews. Chief among these were that: (i) the reports sent to us were written at least 18 months before the conclusion of IHP-VII; and (ii) there were some marked disparities between the written reports and what transpired in interviews. Invariably the written reports give no indication of any form of problem. This is most noticeable with the HELP programme and to a lesser extent with FRIEND, but there are many other instances.

3. COMPETITION, COMPARATIVE ADVANTAGE AND RAISING THE PROFILE OF IHP

The number of Global Water Initiatives has multiplied over the last two decades and global agendas have changed significantly. The focus of attention has moved steadily away from hydrometrics towards governance and water security, especially since the second World Water Forum in 2000. IHP has largely kept abreast of these trends, but so have its competitors and IHP is at risk of trying to compete on too many issues.

3.1 The Competition

The competition takes a wide variety of formats from UN partners and Bretton Woods institutions to scientific associations, professional water management organisations, multi-agency groupings, and charities. The term 'charity' itself covers a range of types from multi-focus to water-specific, and privately funded scientific organisations. Of course, in many instance competitors are also collaborators. In almost all cases, there is considerable overlap between the interests of these organisations and those of IHP, from education and capacity building to technological developments, guideline publications and creating sustainability, resilience to climate change, food and water security and fostering international peace.

There is no single area of investigation that IHP can claim uniquely its own. A brief survey of competitors would include: the UN Food and Agriculture Organisation (FAO); the Organisation for Economic Co-operation and Development (OECD); the International Union for the Conservation of Nature (IUCN); the Global International Waters Assessment (GIWA); the Global Water Initiative (GWI); the International Commission on Large Dams (ICOLD) and the UNESCO affiliate the International Hydropower Association (IHA); the World Water Council (WWC); the Global Water Partnership (GWP); WMO, e.g. the Commission for Hydrology (CHy) and the Hydrology and Water Resources Programme (HWR); the World Bank; the UN University, including the Institute for Water, Environment and Health (UNU-INWEH) - especially water security in the developing world – and the Institute for Environment and Human Society (UNU-EHS) - risks and disasters - which form a bridge between academia and the UN system; Stockholm International Water Institute (SIWI); the International Water Management Institute (IWMI); the International Commission on Irrigation and Drainage (ICID); and the International Water Academy, established by the Norwegian government. Most of these are interested in capacity building in developing countries as well as developing guidelines for water resources management, including environmental protection.

WMO retains its strong focus on hydrological monitoring and technical standards, but it too has moved into socio-economic aspects. In 1999, the terms of reference of its Commission for Hydrology were updated to cover wider issues of water resources with an emphasis on the international exchange of experience

and technology, capacity building in LDCs, implementation of Integrated Water Resource Management (IWRM) and integrated flood and drought management, climate change impacts, and generally applying hydrological knowledge to the needs of sustainable socio-economic and environmental development. These are all areas of IHP activity. Fortunately, IHP-WMO collaboration is strong, but it should not be taken for granted (see *Collaboration*).

Two important competitors from the realm of institutions created under the Bretton Woods project are the World Bank and the Organisation for Economic Co-operation and Development (OECD). The World Bank's Water and Sanitation Program (WSP) has been leading water and sanitation projects for some 30 years and focuses on capacity building and forming partnerships between governments, donors, academia and the private sector.

The OECD has recently moved strongly into the water management arena. It has a number of advantages, but also some significant disadvantages. The OECD's Water Governance Initiative works with the IWRA. A major advantage is its strong links with financial institutions: for example, the Asian, African and InterAmerican Development Banks, European Investment Bank and World Bank. Perhaps another advantage is that it only has 34 Member States to satisfy. The OECD also works with FAO and UNDP and has worked with UNESCO on education, and in organizing the 6th World Water Forum in Marseille. Officially, the OECD ranks observerships and cooperation with other organisations as important avenues for dialogue on OECD policy that help it to avoid duplication of work.

The World Bank is also deeply involved in water projects around the world, with currently approaching 1000 projects ranging from efficient irrigation in Vietnam to the impacts of climate change in the Senegal River Basin. As the Bank's remit is to direct investment into developing countries to improve people's lives, it has contributed significantly to the UN Millennium Goals, and more collaboration with IHP is to be welcomed.

In Africa, the African Ministers' Commission on Water (AMCOW) has a very similar work plan to IHP under 7 Themes operating at national and regional levels: Water Infrastructure for Economic Growth; Managing Water Resources Transboundary Water Resources; Meeting the Sanitation, Hygiene and Water MDG Gaps; Global changes and risk management: Climate variability and Change; Governance and Management; Financing; Education, Knowledge and Capacity Development. AMCOW has 50 Member States.

AMCOW was set up under the leadership of UNEP, WMO and the World Bank in 2002 and attended the Nairobi meeting in 2013. AMCOW makes no mention of IHP on its website, even during the period when IHP was well endowed, but clearly this is an organisation IHP should be collaborating with. FAO has also published its own *Water Strategy for Africa*.

International professional organisations, many of which started as essentially scientific bodies, have developed ever more practical applications. These include: the International Association of Hydrological Sciences (IAHS); the International Association of Hydrogeologists (IAH); the International Water Resources Association (IWRA); the International Water Association (IWA); the International Association of Hydro-Environment Engineering and Research (IAHR). IHP already has connections with most of these, but greater dialogue and coordination of activities would help overall efficiency.

NGOs and charities have the general advantage that they are apolitical and as such can often gain access to countries where western aid programmes and even UN bodies are regarded as too political. They also tend to be very practical at grass-roots level, not just country level but community level. As Appendix V indicates, they are often contributing very directly to the implementation of the Millennium Development Goals (MDGs) in water and sanitation. NGOs and charities include: Water.org; WaterAid; International Rivers; Water Supply and Sanitation Collaborative Council (WSSCC); the Union of Concerned Scientists (UCS), *et alia*. A fuller list is provided in Appendix V together with a brief indication of their work.

3.2 IHP's Comparative Advantage

Since there is no general area of investigation that IHP can claim that it alone can undertake, what are IHP's unique advantages? Indeed, does it have any advantage at all?

Secretariat staff tend to identify their networks of known experts as IHP's unique advantage. There is no denying that these have served it well in the recent past, but most if not all competitors could claim the same and the internet has changed the mode of search for ever.

Perhaps IHP's claim to be "the only intergovernmental programme of the UN system devoted to water research, water resources management, and education and capacity building" (Strategic Plan IHP-VII) is its best competitive advantage. It is not that IHP excels in any of these fields individually. Rather it is the combination. However, there are many organisations that come close to this, even within the more restricted range of the UN system. Again, a major focus, if not *the* major focus, of IHP is on improving resource management in developing countries. IHP is very far from being unique in this respect, but it can do it well and there is no indication that needs are satiated or of any limit to the number of independent programmes that can work in this field. Indeed, a report by WHO and Unicef[7] indicates that the only one of the Millennium Development Goals 'on track' was access to safe drinking water, but only at communal standpipes, not in the home. Some of the scientists that we questioned single out FRIEND, HELP and GRAPHIC rather than the Phases as the unique strengths.

There is one other competitive advantage: the broad membership of UNESCO. Few competitors can compete with the large base of Member States and, as the UNECE's 2012 Draft Decision on cooperation with UNESCO points out, this adds legitimacy to IHP's operations.

IHP needs to seriously review its range of activities in the coming phase of the Programme in order to focus on: (i) areas it is best placed to serve; (ii) areas in which the competition is not so strong.

Overlap: an advantage or a weakness?

Overlap can be wasteful of effort and money. It undoubtedly increases the competition for funds. This is likely to become more of a problem in the coming years. However, it can also enrich the results: provide alternative solutions to a

[7] *Progress on drinking water and sanitation*. WHO/Unicef Joint Monitoring Programme 2010, updated 2012.

given problem or further confirm conclusions – the very paradigm of science. In the long run, it is therefore neither desirable, nor indeed possible to eliminate overlap entirely. Varady *et al.* (2007) advocated transforming overlap into resource. Doing this requires careful and continual monitoring of the competition, and we suggest that an IHP Task Force should be established to do this to guide the way forward.

Is the range of activities too great?

Recent and projected programmes cover a considerable range of Focal Areas. Some have been more or less abandoned, like the Water-Energy nexus and Water and Finance in IHP-VII, seemingly as a result of inadequate resources. There is a strong argument for reducing the range, filtering the requests from Member States more rigorously, considering the resources available and the practicalities of supporting a given theme. This needs to be given more serious consideration at the design stage, including assessment of the viability of projects in light of competitors' programmes. There is no gain from spreading resources too thinly (see the professional opinions in our survey, Appendix III).

Is the length of Programmes too long?

Some staff at the Secretariat claim that the Themes set out in IHP-VII and IHP-VIII are sufficiently broadly defined that they can be adapted over the period of the plans to meet new developments in requirements or changes in resources. Whilst this is feasible, the vagueness of the specifications is also a hindrance. It makes assessment of success difficult (see section 2 on the *Summative Assessment*). It may require repeated tweaking of aims and objectives. It is much better to start with clearer aims and testable benchmarks, not only for efficient internal working but also for outsiders to see exactly what is being done.

The length of IHP-VII was on the long side compared with many other organisations. The 8 years proposed for IHP-VIII is even longer. The change intended is to fit into UNESCO's Medium Term Strategy (C/4) 8-year cycle. We are not alone amongst those we have interviewed in considering two 4-year programmes better: more tightly defined objectives, more responsive to change. IAEA is particularly efficient. It is now running 4-year projects 2014-2017. OECD runs 5-year programmes with updates every 2 years. We understand this was discussed by the working group for the implementation of IHP-VIII at its first meeting in Nairobi in September 2013.

Why have Phases at all?

IHP is unusual in having such long phases and a number of competitors do not even have phases at all. Some competitors run projects for as long as that particular project requires: no 'one length fits all', no fixed time when every project must start together. Some tasks can be completed quickly; others need more years. The World Bank is an example. It operates 'on demand'. Operating in this way can reduce the administrative burden. At any one planning stage, the focus is on a smaller number of themes or projects, rather than having to plan everything in one go. It is also more responsive to change.

It is too late now to change IHP-VIII radically, but we recommend that it is operated more as though it were two 4-year periods with a rigorous reassessment at the halfway point. Otherwise, there is a danger of losing

competitive advantage.

3.3 Raising the international profile

The public face

When senior academics, including members of the British Hydrological Society and a senior scientific advisor to the Canadian government, claim to have little knowledge of the work of IHP, it suggests that IHP is not projecting itself well enough and not engaging sufficiently with scientists and engineers. Our own survey tends to confirm this (Appendix III). A significant number of respondents said that IHP needs to do more for the science.

For many not already engaged with UNESCO-IHP, especially young scientists and engineers and students, the website is the first port of call. It is also likely to be an early point of contact for potential donors. The website needs a major overhaul.

We asked a senior international marketing executive[8] for her opinion on the UNESCO-IHP website. After a 15 minute exploration, her opinion was that the website is not fit for purpose. She could not understand what IHP is about from the site; no clear aim; too much jargon; too much bland 'copy' (words); too many vague statements; it is not clear who it is addressing - too many obscure terms for the general reader, not enough detail for the specialist and academics; poor navigation; too 'macro-level' and too many tiers in the site; it is not clear what has been achieved and there is a lack of timescales; it needs to break away from the dull UNESCO website, like UNESCO-IHE. She praised the UNESCO-IHE website as a model for revitalising IHP.

Three competing websites stand out as examples to learn from: UNESCO-IHE, OECD and the World Bank. The UNESCO-IHE website is simple, direct, clear, easy to navigate and engaging. It does the job for student recruitment. The World Bank excels in its graphics, with pie diagrams showing the categories of project supported and a good, interactive world map with graded shading of countries according to the number of projects supported in each country and a click on the country reveals the nature of project supported and the date, going back at least to the 1970s. Such a long 'memory' would not be necessary for IHP – it would be quite time-consuming to construct – but the titles of current and recent projects and their locations could be adopted. Lists of publications are more easily accessed on the World Bank. The only failing is that many of the topics listed, like 'dams and reservoirs', have no publications under them.

A comparison between the websites of IHP and the OECD suggests some ways in which IHP might promote itself better. The OECD site is more welcoming and user-friendly. Its "Biodiversity, water and natural resource management" section begins with "The water challenge: OECD's response", which contains popular introductory videos, "don't miss" news, and immediate access to its flagship report *Water Security for Better Lives* and its other new report *Water and Climate Change Adaptation: Policies to Navigate Uncharted Waters*. The latter is available as a neatly illustrated but informative brochure of just 9 pages, or as a virtual eBook of 112 pages with links to some 35 detailed Country Profiles, help

[8] Senior Director of a global multinational company, who has a marketing portfolio and a degree in geography from Cambridge University and so is not unfamiliar with water issues.

on obtaining the publication, or downloading individual chapters, and links to related publications.

The IHP website is nested within UNESCO Water. It is professional, but more for the initiated. It is also less distinct as an entity, listed as one of six UNESCO activities. Key publications like *Free Flow: Reaching Water Security Through Cooperation*, the *International Glossary of Hydrology*, *River Basin Planning: Principles, Procedures and Approaches for Strategic Basin Planning*, and *Glacier Mass Balance Bulletin 12* all appear on the UNESCO Water page and are not accessible directly from the IHP pages. They would therefore be missed by a reader going straight into the IHP homepage, which is where Googling "IHP" directs readers. Those readers could be possible donors of funds, or simply educators and students, none of whom would IHP wish to be given a limited view of IHP's activities. Similarly, following the lead of others, why not raise public awareness by adding a link from the website to the short film "*Water in Cities*", which was produced for Theme 4.3 of IHP-VII and launched at the UN Official Event on World Water Day 2011 and said to have been widely distributed afterwards.

A large number of the publications in the web listing from UNESDOC are administrative documents. Many others are marked "No full text" available. We think it would be more user-friendly and a better advertisement if the publications that are truly important and potentially useful for end-users are promoted separately and with full texts available online. It should perhaps be explored whether there is a need for administrative documents being made available at the IHP site at all. If they are, then a clear distinction should be made between scientific publication and non-scientific administrative reports.

The IHP section of the UNESCO website provides links to pages detailing the activities and publications of the Cross-cutting and Associated programmes. Links are also provided to the separate websites of these programmes where they have their own. However, the latest addition, the International Drought Initiative (IDI), is curiously missing from the list. It is potentially a flagship initiative with the theme of Global Change continuing through IHP-VIII.

A point of detail that seems symptomatic of these problems occurs in the public release entitled *Water Security for all: water programmes and projects at UNESCO: You can be part of it*, in which IHP does not appear at all in the list headed "The UNESCO Water Family in few words" (*sic*). It is also unfortunate that UNESCO has ceased to publish its *Water e-Newsletter* (2005-2011).

A look at the recommendations of the reviewers of IHP-VI in their report of 2010 reveals similar concerns about the need to maintain and enhance the level of advocacy: by maintaining a high level of visibility at fora and within the UN system; increasing the effort devoted to public relations; and contributing to the work of partner organisations. These need re-emphasising, especially as regards public relations. One other recommendation raised initially by the evaluators of IHP-V was the establishment of a prize for young persons. We add our support to this recommendation and note that although a Prize is listed on the "About IHP" web page, the link is inoperative despite the Prize being reported as existing in the minutes of the 19th session of the IGC. Is this perhaps due to the funding agency being the Libyan government? If so, then we would hope that alternative funding is being sought.

It also seems anomalous that key initiatives of IHP, such as ISI, IDI, G-WADI, have their own websites, but not IHP itself. The authors realise there may be structural issues that constrain this, but nevertheless highlight it for consideration, particularly as a vehicle for an IHP data portal (see next).

An IHP portal on global water data

IHP rightly and proudly brands itself as "the first and only intergovernmental freshwater initiative institutionalized in the UN system" (*Water Security for all*, page 1). However, the initial focus on hydrometrics inherited from the International Hydrological Decade (IHD) has appropriately changed to meet new global concerns. Along the way, its role in data capture and archiving has been eroded as competition has increased, e.g. with GRDC for runoff, GEMS/WATER for water quality, NOAA's GPCC for precipitation, the WMO Climate Data archives and FAO's Aquastat. The cross-cutting programmes of FRIEND and HELP do maintain IHP's role in this area, as do IFI in floods, WHYMAP for groundwater, IDI for drought and involvement in IGRAC. But we ask whether fronting a new digital Gateway with links to all the world data archives might add weight to the espoused position of IHP as the only UN intergovernmental freshwater initiative. Such a portal could serve as a central access point providing links to water-related databases that continue to be hosted by their compilers, while enjoying the added visits of users drawn to the UNESCO-IHP website. In addition, such a portal could aid access and selection of relevant data by providing users with quick overview-like meta-analyses, specifying types, density and reliability of data, as well as temporal and geographical distribution in easy-to-read maps and diagrams. Such a set-up would not require major IT investments in hardware and avoid legal complications as all the data would remain at the original hosts. But it could contribute to making IHP once again an important tool for researchers by providing a single access point to an increasingly complex maze of diverse data archives.

The International Council for Science (ICSU) is holding a conference in New Delhi in November 2014, SciDatCon2014, on 'Data Sharing and Global Sustainability' and we suggest that IHP should be represented and join the ICSU World Data System.

Using the logo

Logos can be powerful indicators of ownership. We find the IHP logo is rather underused and missing from some key activities. Even on the UNESCO-IHP web pages the logo is only used on the introductory page. There is no IHP logo on the separate websites of IFI, ISARM and WHYMAP. Only G-WADI, ISI, UWMP's Urban Water Series, and IDI use it. The reviewers of IHP-VI similarly noted that use of the logo would be beneficial for seeing the multiplier effects of seed money provided as catalysts.

Publishing and advertising publications

The reviewers of IHP-V had much to say about the publication of IHP activities. They had 3 recommendations: (i) that the speed of publication should be increased; (ii) that publications should be more readily available; and (iii) that activities should be synthesised into flagship reports.

We reiterate these recommendations, not just as means of improving "The public face", but also because of the crucial role publications make in serving the objectives of the phases of IHP, making results visible and useful for end-users. Research that remains unpublished is of no use to scientists or managers.

Similarly, timely publication of collective results is also vital for adequate assessment of the relative success of Themes in IHP Phases. This does not necessarily require a publication for public consumption, with the additional presentational standards that this implies, although it would be useful to make these collected results available online, perhaps as "interim reports". As evaluators, we have experienced exactly the same obstacles to assessment owing to the lack of summarising reports for many of the Themes in IHP-VII as the reviewers of the previous two Phases. The evaluators of IHP-VI noted that "achievements, scattered in many separate activity reports and with no consolidated document summarising all the program achievements against expected results, are mostly intangible and difficult to quantify or assess". Again, as regards the public face of IHP-VII, only 2 of the 5 Themes listed on the UNESCO-IHP website contain links to publications: Ecohydrology and Water education; excellent and very accessible works in both cases, but could the other Themes not be similarly supported?

We acknowledge that some results can take time to be fully formulated and that the ensuing benefits may take even longer to emerge, but we recommend a more rigorous supervisory policy to elicit more complete and timely reporting. Unfortunately, the lack of ability to apply direct pressure in some cases due to the nature of the chains of command does militate against this (see 5 *Administrative issues*). Nevertheless, IHP should consider enshrining such reporting as an essential in the Terms of Reference for new initiatives.

We would also add that there is increasing need, indeed requirement, for scientific results to be published in highly-rated, peer-reviewed international journals. The IHP needs to push this more and perhaps follow recent examples of OECD by communicating results of expert meeting in ISI listed journals. We see no evidence of such publications emanating from IHP-VII in the online lists on the UNESCO website: books, workshop and conference proceedings, training material, *Technical Documents in Hydrology*, but not papers in international journals. This is not to say that none exist, but if they do they are in a minority and the lack of reporting reveals a lack of value attached to such publications within UNESCO-IHP. Journal publications are vital for obtaining global recognition from scientists, and could well be extremely influential amongst potential new donors. We recommend a change of culture in this regard. We judge that this lack of profile on the international stage is a major contributor to IHP's low level of recognition among many water scientists. The *Technical Documents in Hydrology* in particular were valued by scientists and managers and it is regrettable that they have been discontinued.

The prospect of timely publications in peer-reviewed journals would also assist IHP in attracting collaboration from leading scientists whose performance is increasingly measured in terms of such outputs. This could thus counteract the frequently reported trend of an ever-increasing number of scientist declining to get involved in IHP, by now approximately 50% of those approached, citing the lack of tangible results as main reason.

3.4 Conclusions

It is now more important than ever that IHP raises its profile and presents itself better to policy-makers, professionals and the public. As long ago as IHP-V, reviewers recommended that IHP 'maintain the level of advocacy' and high visibility at international meetings, increase the effort devoted to public relations and link more effectively with partner organisations. All these efforts have tended to decline during IHP-VII. Lack of funds has been an important contributor, as have issues surrounding the lack of strong leadership during the interregna.

It is crucial for the future of IHP that these efforts are renewed and strengthened.

4. COLLABORATION WITHIN THE UNESCO 'WATER FAMILY', UN-WATER AND BEYOND

This section is not intended to be a complete list of entities and activities. Those listed are intended to provide a reasonable cross-section and to illustrate our arguments and support our recommendations. The aims are three–fold: to assess the amount of collaboration; to highlight areas where there appear to be problems in cooperation, whether due to lack of funds, administrative deficiencies or other issues; and to recommend solutions. This is not intended as a review of the entities themselves, but rather of their interactions and their actual or potential contributions to IHP. Internal issues are only visited where they impact upon these. Some key contributions to IHP-VII, especially from the IHP Programmes, are included as indicators of the degree of their participation in Phase VII.

4.1 The UNESCO 'Water Family'

The degree of collaboration within the so-called 'UNESCO Water Family' is mixed. Overall, IHP could benefit from closer coordination within the group.

UNESCO-IHE Institute for Water Education (Category I)

The UNESCO-IHE is a very successful organisation. Because of its history as an educational establishment going back to 1957 before being incorporated into UNESCO in 2003, it retains a strongly independent stance supported by its statutes and its one-third funding from the Dutch Government. It is keen to retain its academic freedom. UNESCO-IHE is a model for an institution run totally on extrabudgetary funds of the order of $90 million a year. With the current financial constraints facing UNESCO, there are very important lessons to be learnt from the way UNESCO-IHE is run.

We flag this up as a key point for UNESCO to take on-board (see *Funding*). We also commend UNESCO-IHE as an example of less bureaucracy, which again should be an aim for the future within UNESCO and IHP (see *Administrative issues: IHP Secretariat*).

UNESCO-IHE has contributed to the objectives of IHP in a number of ways, but perhaps not enough during IHP-VII. The Rector of UNESCO-IHE is keen to increase collaboration during IHP-VIII. Current working relations are loose and need to be improved, capitalising on issues of mutual interest. UNESCO-IHE and IHP have complimentary interests in education and training. The WMO is already collaborating with UNESCO-IHE in sending personnel for postgraduate degrees under a fellowship agreement. This is in addition to WMO's own highly popular technical training service. The WMO operates an effective system whereby Member States in a given region are asked to nominate personnel to attend its training courses. A significant number of technicians attend from all parts of the world and the WMO is planning greater use of internet training. One of the most notable achievements of UNESCO-IHE is that 98% of MSc graduates go back to

their own countries and UNESCO-IHE surveys show that 80% are still in the water profession 20 years after graduation. Many of these are now in top positions within developing countries. UNESCO-IHE has an active alumni programme which helps maintain its global influence. These are aspects IHP as a whole could benefit from especially for strengthening its network on the local level of Member States.

The new Erasmus Mundus Master's Degree in Ecohydrology, with the support of 4 Category II centres, is a notable example of collaboration and a contribution to IHP-VII. Collaboration with the Dundee Category II Centre on MSc and LL.M degrees was another excellent example, sadly curtailed last year by lack of funds at Dundee University. IGC minutes record collaboration between IHP and UNESCO-IHE on the Water Allocation theme in the 4th WWDR, and at the 6th WWC. The 20th session reports that UNESCO-IHE offered to hold a meeting for water-related centres, in order to contribute collectively to the development of the implementation plan for IHP-VIII. There is, however, no explicit record of an UNESCO-IHE contribution to Theme 5 Water Education in the Review of IHP-VII activities at the 20th IGC. Clearly, this is an aspect that needs to be improved through better coordination between these two members. One suggestion from the UNESCO-IHE Rector is that relevant UNESCO-IHE theses could be labelled with the IHP logo as a contribution to IHP objectives: a very cost-effective way of increasing capacity in IHP.

UNESCO Category II Water Centres

There is little evidence in the documents reviewed that many Water Centres have contributed to IHP-VII. A major weakness we identify in the system is that some centres have been set up in response to requests from Member States, often motivated by political considerations rather than scientific merits. This has led to cases where States have requested centres largely for the kudos of accreditation from UNESCO, and centres have gone their own way since. In some cases the fate of centres is also linked to that of founding politicians that ensured sufficient funding while still in office. We are informed that UNESCO's Executive Board starts to doubt the usefulness of the many centres. We recommend that UNESCO should be pro-active by advertising for Member States to tender for a centre on a competitive base that will contribute to a specific IHP Theme and subsequently that the accreditation lasts for the duration of the specific IHP Theme. This would ensure transparency, selection of the best proposal and better motivation and integration between centres and the IHP Programme.

The International Centre for Water Hazard and Risk Management (ICHARM), established in Tsukuba in 2006, and the International Groundwater Resources Assessment Centre (IGRAC) in Delft are two of the greatest successes among those looked at in detail during this evaluation. Although IGRAC was founded by UNESCO and WMO in 1999, it was not formally incorporated as a UNESCO Category II centre until 2011.

ICHARM and the Humid Tropics Centre Kuala Lumpur (HTC KL) Category II centre joined in the agreement to establish a programme to assess flood forecasting and warning system for humid tropic regions developed by the Jakarta office.

IGRAC has contributed significantly to IHP's aim to reduce tension in areas of shared water resources through its involvement in the multi-agency

programme Internationally Shared Aquifer Resources Management (ISARM), set up by UNESCO and the International Association of Hydrogeologists (IAH), and hosting the ISARM portal. IGRAC operates the Global Groundwater Monitoring Network and the Global Groundwater Information System (GGIS), which is an interactive portal. The international classification system for aquifers developed by IGRAC is a valued contribution, and IGRAC contributed to Focal Area 2.4 of IHP-VII with an updated map of transboundary aquifers. The 2013 self-evaluation stated that "IGRAC activities are in full compliance with the mission and the general objectives of the centre," and that "IGRAC fulfils the obligations as stated in the Grant document".

The Centre for Water Law, Policy and Science in Dundee continues to be a strong contributor in a vital and under-researched field. It is the only Category II Centre developing closer cooperation between law, policy and water science. In recognition of its work, the Centre received The Queen's Anniversary Award for Higher and Further Education in 2013. Many countries and organisations around the world draw on the expertise of its staff, and it is a partner of IGRAC in ISARM.

The International Research and Training Center on Erosion and Sedimentation (IRTCES) Category II centre, set up by UNESCO in 1984 in Beijing, is one of the oldest and has been amongst the most active centres. IRTCES hosts the Secretariat for the International Sediment Initiative (ISI) and organised training courses during IHP-VII. Recent issues of funding are, however, a matter for concern (see *ISI* below).

During IHP-VII, the G-WADI technical secretariat was established at The International Centre for Integrated Water Resources Management (ICIWaRM) Category II centre in the US, itself established in 2007 with the US Army Institute for Water Resources (IWR). The European Regional Centre for EcoHydrology (ERCE) in Poland assisted the EcoHydrology Programme (EHP) in East Africa, and agreement was reached on a conceptual proposal for an integrated data base system at the Latin America and Caribbean IHP meeting linking the International Hydroinformatics Centre (CIH) under establishment in Brazil and Paraguay, and the Water Centre for Arid and Semi-arid Zones of Latin America and the Caribbean (CAZALAC). CAZALAC reports good collaboration with other Centres in the region, expanding IHP implementation around the participating countries, together with good relations with the Secretariat, which invited CAZALAC to contribute to IHP-VIII in 2012. The International Centre for Education, Capacity Building and Applied Research in Water (HidroEX, Brazil) also reports successful contributions and close engagement with IHP's educational activities in partnership with UNESCO-IHE.

Despite such successful collaborations, however, we have received reports that around half of all Category II Centres are inoperative and the written evidence of contributions to IHP corroborates this state of affairs. Stricter monitoring is needed and non-functioning Centres should have their UNESCO accreditation withdrawn. Protocol will require the relevant Member States to be warned prior to de-badging, but strong procedures need to be in place and strictly applied. It is understood that withdrawal of accreditation has only been considered in one case. Clearly, a stronger line is required given the fact that under- or non-performing centres pose a reputational risk for UNESCO.

Existing processes desperately need to be speeded up. We cite the case of the review of the Dundee Centre – a case of a well-functioning centre – where the

evaluation undertaken 2 years ago is still not signed and available to the Centre's Director. Such a 'process' is bad for morale. This said, it also needs to be acknowledged that stricter regulations by UNESCO are often met with resistance from Member States and delays are also caused by Centres and Member States.

The Strategy for UNESCO's Category II water-related centres presented at the 49th session of the IHP Bureau in June 2013 states unequivocally that "Fulfilling the mandate of the IHP …… would require greater agility in terms of partnering and fundraising among the various components of UNESCO's water family". However, the statement "The regular reporting of centres on a biennium basis before an IHP Council session ….. is *encouraged*" is too weak and needs to be given more power: it should be obligatory and part of the statutory agreement.

UNESCO Chairs

Both the IGC reports and the personal responses to our questions reveal the lack of contributions from many UNESCO Chairs to IHP-VII. The report that the Geohydrology Chair of UWC undertook a study of SADC policies related to transboundary aquifers and collected related data for DRC-Zambia and Malawi-Tanzania under Theme 2.4 seems to be a rare case. This same Chair also offered about 25 international short courses in groundwater related subjects for Africa, and is a commissioner of the African Ministers' Council on Water's Groundwater Commission[9].

Out of 31 Chairs only 4 responded positively to our questionnaire indicating that they would be happy to participate in the future. Most Progress Reports from Water Chairs seem to have ceased in 2007.

Notwithstanding these cases, we strongly believe that Chairs should be encouraged to contribute much more and in a tangible manner, particularly given the large number of chairs established recently, and to fully report their contributions in a timely manner.

Regional Hydrologists and Field Offices

Only a very small number of UNESCO staff in the field replied to our questions (only 2 scientists from all Field Offices and 3 Regional Hydrologists). Of these, Programme Specialists in Beijing and the Regional Bureau Europe, Venice, show active involvement and forward planning. So do the Jakarta and Montevideo offices. But the Cairo Field Office for Arab States reports less activity. However, as the Field Offices are allocated 40% of the total budget available to the Director of IHP, a clearer understanding of the actual contribution of field offices to IHP is required. Currently there is no certainty as to how many scientists in what office contribute to IHP and if so to what extent. In order to adequately use the significantly reduced financial resources, a survey needs to be undertaken to answer these questions and allow for a better understanding of how resources should be allocated. Instead of directly deducting these funds from the Director's budget it should be the responsibility of the Secretariat to oversee remuneration only of the scientists that are supposed to work for IHP.

[9] The African Ministers' Council on Water (AMCOW, founded in 2002) fails to mention IHP on its website under partnerships while referring to UN-Water. See *Competition* section.

Given the low response rate only very few observations can be made. In this context it is interesting to note that Venice emphasises work on transboundary cooperation between Belarus and Russia focusing on establishing Transboundary Biosphere Reserves (TBR), as well as aiming to strengthen the cooperation between UNESCO's two main environmental programmes, IHP and MAB. The Regional Bureau is collaborating closely with the Regional Hydrologist on establishing and managing TBRs along river corridors. It is particularly good to see a biologist involved, who has previous experience as Programme Officer for International Waters (2001-2004) in the UNEP Division of GEF coordinating Integrated River Basin Management (IRBM), underlining the multidisciplinarity of IHP as one of its advantages over more specialised competitors.

National IHP Committees

A very large number of IHP National Committees are not fully functional or are even non-existent. This is another issue that has been long reported but little action taken. The IHP-V review regarded them as the most important component of IHP and recommended strengthening them, especially in Africa. IHP-VI reviewers noted that "lack of coordination and inadequate information flow have led to competing directions for the Secretariat and some unhappy National Committees" and that social scientists involved with water should be induced into the current structure. They also noted that interchange between the Committees and UNESCO National Commissions was often sporadic and ineffective. There remains considerable variation between countries, with the least active Commissions and Committees often being in those countries most in need of assistance.

It is a manifest fact that without representation on the Council, there is little incentive for National Committees and Member States to engage with IHP (cp. Appendix VIII). The IHP-VI review noted "insufficient consultations on the priorities in the regions".

We have consulted a number of National Committees, including detailed discussions with representatives from the UK, German, French and South African, and further contact with individual members of the Canadian, Russian, Serbian, and Kenyan Committees. For example, the UK Committee is active and contributes well. The German Committee is active but on its own terms, which are often at variance with Paris. They have a feeling that Germany gets little out of its involvement. This is regrettable and reinforces perceptions that IHP consists of contributors and consumers, with affluent countries contributing disproportionally to the benefit of poorer members that are mainly receiving. Worse still, the French Committee has totally withdrawn its support and remains dormant, as a result of the French Government reducing its subsidy to its UNESCO Commission and the IHP Committee. France has chosen a seat on the Man and the Biosphere Programme (MAB) of the Ecological Sciences Division rather than IHP and has not taken up the opportunity to sit on the Bureau for reasons of cost.

The South African IHP Committee is having problems of a different kind. It has been effectively inactive for a while and is in the process of establishing a new constitution. Some members report not attending, largely because it is mostly run by the Department of Water Affairs, which in their words is "very

political". There has not been much contact with the Nairobi Field Office since UNESCO ran out of funds to support meetings.

Nevertheless, many 'donor' countries continue to stay involved for a variety of reasons, indicating that economic imbalances in contributions are not a fundamental obstacle to collaboration. There may be many reasons for this, ranging from the purely altruistic to the perceived advantages. Access to unique research opportunities and collaborations, sharing of insights on very different types of water problems, the opportunity to address water problems of strategic importance may all play a part in the motivation for active engagement in IHP.

This could be an opportune moment for UNESCO to remind National Committees of the advantages of engagement as well as the needs of less advantaged nations. The authors suggest that contributing to the resolution of water problems where they are most severe and thus improving the life and livelihood in low-income countries is perhaps the single most important role for IHP.

Committees in LDCs, especially inactive ones, could probably also benefit from more advice on what is expected of them, what they can expect from the Secretariat, and what they might achieve by an active engagement. Active on-site studies of 'client' needs, perhaps led by Regional Hydrologists, could help in forging more productive cooperation: on-the-ground client profiling rather than relying on ministerial staff far removed from the action and maybe the subject, who may only be engaged for the short-term. IHP could learn from WMO in giving the end-users what they need and from UNESCO-IHE's fostering of its network of alumni in active posts.

IHP Cross-cutting (permanent) Programmes

A number of issues emerged during this review concerning the state of progress in HELP and to a lesser extent FRIEND.

Hydrology for Environment, Life and Policy (HELP): Both the 19th and 20th sessions of the IGC reports strong developments in HELP that have contributed to IHP-VII Focal Areas 2.2 and 3.3 with Special Issues of the *Journal of Hydrology* and the *Journal of the International Hydrologic Environmental Society*, risk-based management meetings, a social network called HELP Forum covering 91 basins in 67 countries, and a relaunch and refocusing of the HELP network in 2009-2010. The IHP-VII Strategic Plan has a prominent box entitled "A need for HELP".

Yet a number of key interviewees associated with the programme have expressed concern that HELP is not so healthy and lacks overall coordination. Financial constraints since 2011 have meant that momentum has not been maintained. Commitment in the UK is sound, especially in the Dundee Centre's Tweed basin, but the European arm, which the Centre has tried to coordinate, is singled out as being largely inoperative. The dropping of the HELP title from the Dundee Centre was perhaps indicative. There is a view that there is a lack of incentive and a feeling that perhaps the programme as originally conceived may have been too ambitious. There appears to have been little involvement within the Secretariat since 2008, although good work continues to be organised from Jakarta and commitment remains very high in the Asia-Pacific region from Australia, China, Malaysia, Pakistan and South Korea, especially for implementing IWRM. The level of interest is also very high in Latin and North

America, with good contributions from transdisciplinary water scientists, and hope is expressed for renewal of interest in Africa following the establishment of the Integrated River Basin Management Centre at Kaduna, Nigeria. The view from Jakarta is that the HELP river basins should be used to implement all the Themes of IHP, rather than working in isolation, and that this is necessary if a successful implementation of IHP is to be achieved in the future.

Flow Regimes from International Experimental and Network Data (FRIEND): There appear to be some organisational problems within FRIEND. The recent last-minute cancellation of the 2014 FRIEND World Conference in Vietnam and the temporary withdrawal of the accompanying IAHS volume is perhaps merely a reminder of the problems that can arise from time to time with international collaboration. This particular case is a temporary glitch and set to be remedied by IRD in France taking control.

However, the latest activity of EURO FRIEND listed on the website is the 2008 Workshop in Koblenz and it is not listed among the numerous conveners for the 2010 FRIEND World Conference in Morocco. And although FRIEND publications are quite well presented on the web, they are not up-to-date and omit the latest Global Perspective covering 2006-2010. This is unfortunate since in that very publication the Forward notes that FRIEND is considered the most successful hydrological programme in the entire UN system and "has created a new spirit of international cooperation across political boundaries".

IGC reports record contributions from FRIEND to IHP-VII Themes 1.2 and 2.2. These include the Morocco conference on "Global Change: Facing Risks and Threats to Water Resources", the proceedings of which were published by IAHS, and a meeting and a report from AP FRIEND on Rainfall Frequency Duration in the Asia-Pacific. The 2010 report also notes some reorganisation of FRIEND with new regional groups, the redesigning of research priorities in EURO FRIEND and MED FRIEND, and harmonising databases through a common architecture. All of these show an active programme, although we have no more recent information apart from a feasibility study for a Congo FRIEND in the 2012 report.

IHP Associated Programmes

The International Sediment Initiative (ISI): ISI was set up by IHP in 2004 and was especially active in its first 5 years. The Technical Documents monograph *Erosion and Sediment Dynamics from Catchment to Coast* published in 2008 under IHP-VI is a major contribution. ISI has also contributed to IHP-VII with no fewer than 7 conferences organised in the period 2010-2012, along with a case studies report and a training course contributing to Focal Area 1.1. The 19th IGC reports development of an information portal and a global database.

However, there have been serious problems during the last year or so that have not been solved. Most of the problems stem from lack of funds, but we are very concerned that none of this appears in the reports available to us and that the situation is being misrepresented. Newsletters are still appearing quarterly and give the appearance of being active, but they mostly report activities elsewhere and little is revealed of ISI activities. Lack of funding prevented the Zambezi case study from being published. Communications from IRTCES state there is no money even for postage of papers. The ISI chairman was due to report by November 2013 whether UNESCO could provide funds, and the Steering

Committee decided at the meeting in Japan in September 2013 that if not then ISI should be closed down. As of February 2014, no extra funds have been reported as forthcoming. The ISI steering committee raised concern on the funding cuts, which impacted ISI activities and expected funding allocation for next programme cycle'.

This is highly regrettable as there is a strong demand for international collaboration on sedimentation issues from professionals and a clear need for practical action around the world based on sound scientific principles, especially in developing countries. It has profound significance for land management and flood control. Controlling soil erosion and river sedimentation should be a central plank of IHP's continuing Ecohydrology Programme (IHP-VIII Theme 5) and will be a major contribution to world food and water security as climate change increases rainfall intensities (IHP-VIII Theme 1). This is now a weak area that needs urgent attention.

Water and Development Information for Arid Lands – A Global Network (G-WADI): G-WADI was a strong contributor in IHP-VII, developing its research networks, holding meetings around the world. It collaborated with CAZALAC in publishing the *Atlas of Arid and Semi Arid Zones of Latin America and the Caribbean* in English in the *Technical Documents in Hydrology* (2010). Its hydro-climatic data were recommended for the Global Framework of Climate Services' GFCS User Interface Platform – an IHP Focal Area 1.5 contribution to a high profile international service. The new G-WADI website is also a model for IHP.

Joint International Isotopes in Hydrology Programme (JIIHP): Founded with the International Atomic Energy Agency (IAEA) in 2002 (according to IHP website), the only publication listed on the IHP website is the series of 6 books produced as Technical Documents dated 2000-1 (according to IAEA) entitled *Environmental Isotopes in the Hydrological Cycle: Principles and Applications*, with the aim of providing "teaching material to be used in universities and teaching institutions for incorporating the study of 'isotopes in water' into the curriculum of earth science courses".

IHP is not mentioned on the IAEA website and IAEA is not mentioned in the final reports of the 19th and 20th IGC, despite an IAEA delegate being present at the 19th IGC. However, the Groundwater section assures us that cooperation is very successful, and that, during IHP-VII, IAEA worked with UNESCO on the Transboundary Waters Assessment Programme (TWAP), financed by GEF-UNEP, on WHYMAP, and on a project on the integrated management of the Nubian Aquifer together with GEF, as well as organising the 21st International Radiocarbon Conference and two conferences on groundwater management, climate change and water scarcity. Recently, a joint IAEA-IHP team has been investigating the pollution problems at the site of the Fukushima nuclear plant.

IAEA points out that they have not contributed to IHP-VII directly and have not been involved in the design of IHP-VIII. However, IAEA values cooperation in other respects, integrating isotope studies with river basin hydrology, and JIIHP allows IAEA to work directly with National IHP Committees. Somewhat surprisingly to us, they claim that there is no synergy between IHP and IAEA's Network of Environmental Management and Remediation (ENVIRONET), which is concerned to share knowledge on clean-up of radioactive

pollution, which can affect water resources wherever uranium mining occurs, notably in South Africa, Germany, Australia, Canada and the US.

IAEA itself is expanding its role in hydrology through a new 2014-2017 Coordinated Research Project on the use of isotopes to evaluate human impacts on water balance and nutrient dynamics of large river basins, its Global Networks of Isotopes in Precipitation (GNIP) and Rivers (GNIR), the GIS-based application Water Isotope System for Data Analysis, Visualization, and Electronic Retrieval (WISER), in addition to its long-standing information system ISOHIS. IHP is not mentioned in connection with any of these on the IAEA website.

The discrepancy between the written evidence provided on the one hand in the IGC reports and the websites of IHP and IAEA, and on the other that provided by the people we consulted is a source of concern. And this is only one of a number of such cases.

Groundwater Resources Assessment under the Pressures of Humanity and Climate Change (GRAPHIC): In addition to the 'most downloaded' paper in the *Journal of Hydrology* (2011), GRAPHIC organized training courses and published the hardback book *Climate Change Effects on Groundwater Resources: A Global Synthesis of Findings and Recommendations* (2011) in the IAH International Contributions to Hydrogeology Series. This is an excellent example of what IHP does best: a global synthesis of scientific findings based on case studies from the IHP network accompanied by policy recommendations for scientists, water managers and policy makers.

The only unfortunate aspect is that neither of these publications is listed on the now out of date UNESCO website, which ends in 2008.

International Flood Initiative (IFI): The Secretariat at the ICHARM Category II centre in Tsukuba has run the initiative since 2005. The new book series on Floods is a major contribution to IHP-VII, but yet again the IFI section of the IHP website fails to mention them. IFI is very active and involves close collaboration between its members from UNESCO, WMO, UNU, the International Strategy for Disaster Reduction (ISDR), The International Association of Hydro-Environment Engineering and Research (IAHR) and IAHS, particularly focusing on capacity building and its concept of Integrated Flood Management. It is well attuned to the aims of IHP.

Urban Water Management Programme (UWMP): UWMP was established to promote sustainable water resources management in urban areas by helping countries under Theme 4 of IHP-VII and is administered entirely from the IHP Secretariat. Contributions from UWMP form the backbone of the flagship books published in the *UNESCO-IHP Urban Water Series* of CRC Press (Taylor & Francis) since 2007 (8 out of 41 books by 2014), of which the latest from IHP was published in 2012. The book published in 2010 (according to CRC, not 2011 as in the IGC report) presents the UGROW (Urban GROundWater) model, which is one of the most advanced urban water management tools so far developed. The books have been distributed to UNESCO Member States, IHP national committees and water-related Centres and Chairs.

UWMP produced a short film *Water in Cities* under Focal Area 4.3 "Achieving Sustainable Urban Water Management" for World Water Day 2011.

The film was widely distributed and has been presented on UNESCO websites and on various international events such as the 2012 World Urban Forum organised by UN-Habitat. UWMP also held a number of workshops, seminars and working group meetings under IHP-VII, including a workshop at Stockholm World Water Week 2011.

International Drought Initiative (IDI): The programme was approved at the 19th IGC and launched in conjunction with the Iranian Ministry of Energy to develop networking among international organisations and practitioners active in drought studies. Its 2nd meeting in May 2013 was designed to produce a roadmap for its work. It is based in the UNESCO Category II Regional Centre on Urban Water Management (RCUWM), which was founded in 2002 in Tehran and aims to produce the World Report on Drought Management (WRDM). UNESCO-IHE also assists in validation and accreditation of the courses it delivers. The developing work in the Horn of Africa is a major contribution to the MDGs, which will progress in IHP-VIII (but note the issues with WMO reported under *UN-Water* below).

World-wide Hydrogeological Mapping and Assessment Programme (WHYMAP): This is a multi-agency programme housed at the German Federal Institute for Geosciences and Natural Resources (BGR), and run since 2002 by a consortium which includes UNESCO, the Commission for the Geological Map of the World (CGMW) and IAH. Although it is listed as an IHP Programme, UNESCO is only partly responsible for its operation.

WHYMAP has done valuable work, and collaborates well with IGRAC. It was designed to bring together and unify the efforts in hydrogeological mapping at continental, regional and national levels. The map of *Groundwater Resources of the World* published ahead of the 4th World Water Forum in Mexico, 2006, is a good example of its aims to communicate information succinctly and meaningfully to policy makers and the public, as well as providing the first integrated map of transboundary aquifers. WHYMAP has contributed to IHP-VII in mapping aquifers vulnerable to natural disasters and in a groundwater map of Africa under Focal Area 1.4.

Potential Conflict to Cooperation Potential (PCCP): This is a particularly important programme as it addresses an increasingly relevant aspect of transboundary water issues where UNESCO is uniquely placed to contribute. The documents we have seen indicate a sound professional approach to training personnel in conflict resolution. As such, it has made a number of contributions on transboundary resource management. On the ground, work includes organising cooperative management in a basin in West Africa and one in Central America. It also contributed to high-profile events supporting Focal Area 2.4 for World Water Day 2009, the Fondation Chirac and the 4th WWD Report.

The fact that the programme is run from the Secretariat with just 1.5 personnel and no funds may explain why the quantitative output over the years has been limited in certain respects. A close working relationship with the Groundwater Section of the Division has included involvement in the institutional and legal parts of ISARM assessments (see *ISARM*). The Secretariat coordinated the theme of transboundary water and peace at the World Water

Fora in Kyoto, Mexico, Istanbul, and Marseille, and plans to repeat this in Korea, in conjunction with the Groundwater Section. The MSc on Water Conflict Management at UNESCO-IHE was launched under the umbrella of PCCP, a graduate of which now works in IGRAC.

With 40% of the world's population currently living on shared aquifers and river basins and likely to rise in coming decades, with many of these resources already in dispute and with climate change likely to aggravate many issues, this is an extremely important field. It is one in which UNESCO-IHP is uniquely placed to contribute to world peace and water security through directing Member States towards equitable and cooperative arrangements based on sound science. Not only does it deserve more resources, it is also an area where IHP could stand out and make its mark for the world, and for competitors to see. It is with regret that we see a reduction in collaboration on joint teaching courses on conflict resolution with UNESCO-IHE since September 2012.

The fact that the UN General Assembly declared 2013 the International Year of Water Cooperation is a pre-eminent indicator of the current worldwide recognition of the importance of this issue.

Internationally Shared Aquifers Resources Management Programme (ISARM): This was founded in association with the International Association of Hydrogeologists (IAH), the Food and Agriculture Organization (FAO) and the UN Economic Commission for Europe (UNECE) in 2000. IGRAC maintains the ISARM portal, and collaborates with the Groundwater Section of the Division of Water Sciences and WHYMAP amongst others. This is another key activity which supports IHP's shared basin activities. There is a close working relationship with PCCP. PCCP and ISARM are currently working together to use the PCCP approach to facilitate dialogue between States sharing the Pretashkent aquifer on the border of Kazakhstan. In addition to joint organisation at World Water Fora, they regularly collaborate at Stockholm World Water Weeks.

ISARM published *Towards a joint management of transboundary aquifer systems* in December 2011 with the French Geological Survey, and made a high-level presentation to the UN General Assembly as part of the Convention on the Law of Transboundary Aquifers in collaboration with the UN International Law Commission (UNILC). ISARM is the key organisation mandated to deliver IHP's contribution to the multi-agency GEF Transboundary Waters Assessment Programme (TWAP). See *UN-Water* below. ISARM also worked with the Chinese Academy of Geological Sciences on shared aquifers in the Mekong basin.

The World Water Assessment Programme (WWAP): Founded in 2000 and initially run entirely from the Division of Water Sciences in Paris, it now has a new headquarters, courtesy of the Umbrian government in Perugia, Italy. This is the collaborative programme *par excellence*, coordinating the work of 31 UN organisations and producing the World Water Development Report which is a flagship publication of UN-Water. It is the most collaborative of all the IHP Programmes and contributes *inter alia* to PCCP.

4.2 UN-Water

In contrast to the responses we received from members of the UNESCO 'Water

Family', we received very little feedback from most Senior Programme Managers of other members of UN-Water.

The UN Economic and Social Commission for Asia (UN ESCWA) was among the most forthcoming. They report contributions to ISARM, WHYMAP and WWAP, and to the UN-Water Task Force on Transboundary Cooperation with UNECE, which IHP coordinates, but note that the Task Force has not been very active in the past couple years. In the Asian Region, ESCWA does not contribute directly to any IHP programmes. However, our intervention appears to have inspired ESCWA to talk to the Cairo office, which has proved "quite positive on pursuing avenues for cooperation". Following our intervention, they are exploring more formalised arrangements, especially as ESCWA is coordinating a regional climate change initiative in the Arab region.

Through its various branches, the UNU also had extensive and very positive collaboration with UNESCO-IHP, including organising 10 workshops with IHP between 2008 and 2013. The UNU Institute for Sustainability and Peace (UNU-ISP) in Tokyo jointly organised a number of regional working groups in South-East Asia making use of the IHP report on regional intensity-duration-frequency of rainfall estimation in developing a course module in the climate change downscaling approaches and applications within the framework of the UNU's *University Network for Climate and Ecosystems Change Adaptation Research* (UN-CECAR). UNU-ISP hosted the UN-Water Decade Programme on Capacity Development (UNW-DPC) in Bonn and supported IHP in the International Year of Water Cooperation (IYWC). The UNU Institute for Environment and Human Security (UNU-EHS) in Bonn collaborated on the Groundwater and Human Security-Case Studies (GWAHS-CS) project. And the UNU Institute for Water, Environment and Health (UNU-INWEH), Hamilton, Ontario, worked continuously with IHP on a number of UN-Water related initiatives, including co-chairing the Water Security Task Force, the World Water Day celebration in 2013, and the development of the 2014 World Water Development Report, also involving the UNU Geothermal Training Programme in Reykjavík. INWEH also produced joint publications on water issues in the Arab region with IHP and collaborated on groundwater under GEF IV.

The general lack of response from other members may be read in a number of ways. It seems particularly remarkable as the brief questionnaire (just 3 questions) was circulated by the new Vice-Chair of UN-Water (as of January 2014). UN-Water was created in 2003 following the landmark 2000 World Water Forum (WWF) to coordinate responses and has been particularly effective in serving the needs of the World Water Development Reports (WWDR). Of concern however is the lack of response experienced regarding IHP as a core component and flagship of water-related activities within the UN system. Unfortunately we received no feedback from potentially important partners of IHP such as FAO and WHO, both of which have a strong focus on water.

Food and water security go together and are increasingly recognised as a joint focus for international programmes. Water-related food security should have far more emphasis in IHP-VIII. It appears as a relatively minor element in Themes 2 (groundwater), 5 (ecohydrology) and 6 (education). It is unclear whether FAO is to participate in IHP-VIII, but IGC minutes show a marked lack of participation in IHP-VII. FAO should be involved more specifically on the food-water interface. FAO has published a document entitled *Water and Food Security*

(note the order), which outlines the FAO Water Management Field Programme as well as its *Water Strategy for Africa*. Both fall squarely within the ambit of IHP, yet IHP is not mentioned, only UN-Water.

The WHO is also an organisation that has been rather neglected, yet collaboration between WHO and IHP offers the prospect of fruitions greater than the sum of the separate parts. Water-borne disease and pollution are critical problems, especially now in Africa and Southeast Asia. Over 3 million people die annually from water-borne diseases. More die of water-related diseases like malaria. Collaboration with WHO in IHP-VII was minimal – a workshop. Pollution does figure in Focal Areas 3.4 and 3.5 in IHP-VIII and it is to be hoped that WHO get more involved in this, but the interface between infectious disease and water management is sadly lacking. IHP has a unique opportunity to make a mark here, combining its water management expertise with the world authority on human health that, not without good reason, happens to be part of UN-Water. The US EPA rate acid mine drainage as the next biggest environmental threat after climate change and ozone depletion and levels of mining are increasing in Africa. There is an opportunity here that is currently being missed in IHP-VIII and one which surely many African Member States that are not represented on the IGC would want.

The WMO is a clear exception. An agreement with UNESCO was renewed in 2013, which sets out the working rules for collaboration, following a strong push from Member States for the partnership. UNESCO-IHE also works with WMO in offering a fellowship scheme for Meteorological Services personnel. Some concern was expressed by WMO that the IHP International Drought Initiative is encroaching on the field normally regarded as WMO territory. It was noted at the 19th session of IGC in 2010 that the WMO's Integrated Drought Management Project (IDMP) *could potentially contribute* to the International Drought Initiative, but progress does not appear to have been made: letters exchanged, mutual attendance at meetings, but nothing concrete reported. However, WMO proceeded to plan the IDMP with the Global Water Partnership in November 2010 and the collaboration was finally established in 2013.

WMO also notes that the EU-funded flood protection project in Namibia was won by IHP on the basis of good contacts and an active local UNESCO team, which WMO did not have. Current working links are strong, with the WMO represented on the IGC and UNESCO on the WMO Commission for Hydrology, and the UNESCO-WMO Liaison Committee for Hydrological Activities coordinating the collaboration between the two agencies. However, there is a general lack of reporting of contributions from WMO to IHP-VII in the IGC minutes.

The publication of *Methodology for the Assessment of Transboundary Aquifers, Lake Basins, River Basins, Large Marine Ecosystems, and the Open Ocean* volume 1 (2011) under the GEF Transboundary Waters Assessment Programme TWAP and in collaboration with UNEP *et alia* is a good illustration of successful multi-agency cooperation in which UNESCO-IHP is entrusted with the execution of the global Assessment of Transboundary Aquifers and Small Island Developing States (SIDS) Groundwater Systems.

Collaboration with the UNECE has been progressing well for several years in ISARM and as co-leaders in the Theme area of transboundary waters. In 2012, they signed a decision to cooperate on the Convention on the Protection and Use

of Transboundary Watercourses and International Lakes, and have recently started cooperation on water and climate change.

4.3 Wider collaboration

A significant number of collaborative projects were undertaken with organisations outside of the UN system during IHP-VII, at all levels from global to organisations in individual countries. The organisations were both governmental and non-governmental, such as the Bureau de Recherches Géologiques et Minières (BRGM) and the French Development Agency (AFD). Most of these have been successful. We note just a few.

Some half dozen affiliates of the International Council for Science (ICSU) have the right to attend IGC meetings according to the Statutes, but there have been successful collaborations with only about half of them. Collaboration with IAHS has been good on a number of major tasks, including publications and the series of joint biennial international scientific meetings. However, lack of available funds after the American withdrawal led UNESCO to cancel the Kovacs Colloquium in Paris in 2012, which was intended to mark the culmination of IAHS's Decade on Prediction in Ungauged Basins (PUB) project, and to review the synergies between FRIEND, HELP and PUB. It was a lost opportunity. Links with HELP and FRIEND have been lost and the cancellation was sorely felt within IAHS. Fortunately, the final book on PUB has now been published, but with private funds. Now IAHS has plans for a major contribution to global water security through a Decade of Research entitled "*Panta Rhei – Change in Hydrology and Society*" which IHP needs to engage with. Hopefully, the 11th Kovacs Colloquium due to be held in Paris in June 2014 will not be cancelled.

Although IWRA is not mentioned in the IGC reports, a senior representative of IWRA reports that there has been good liaison. Cooperation with IAH is similarly reported to have been successful.

Collaboration with the ICSU affiliates ICOLD (International Commission on Large Dams) and the International Association for Hydro-Environment Engineering and Research (IAHR), and the non-aligned International Water History Association (IWHA) has been less successful. The IWHA, IHP and UNESCO-IHE have collaborated on conferences and short courses up to 2013. However, cooperation on a proposed joint book series with IWHA on the *History of Water and Civilisation* foundered. IWHA has proceeded to publish 6 volumes separately with IB Tauris up to 2014, but the IHP and UNESCO Publishing have not published a planned overview volume yet due to lack of funds. IWHA has little appetite for further collaboration and feels UNESCO is 'too political'. The IWHA's published statement of intent that the "International Water History Association seeks to provide a forum for the widest possible debate, free of political or institutional influence or control" succinctly expresses their stance.

At the 19th IGC in 2010, IAHR expressed its wish to extend collaboration with IHP and more generally with UNESCO. No follow-up is recorded in the minutes of the IGC that were available to the reviewers. This is unfortunate as IAHR has much to offer from technical engineering to environmental protection, its Standing Committee on Global Water Issues, and its publication *Urban Water Journal*, which should be a vehicle for UWMP. IAHR is not on the list of UN-Partners provided to us. IAHR informs us that although IHP has "long been a

valuable reference and guideline for IAHR, contacts over the past (several) years seem to have decreased. No specific reason comes to mind, but perhaps the change in leadership of the IHP programme contributed". The IAHR Standing Committee on Global Water Issues is involved in many issues related to the IHP Programme, notably: dealing with water-related hazards and climate change; improving flood and drought prediction; and developing urban flood resilience measures. In the past, IAHR actively participated in IFI and ICHARM. Contact needs to be resumed and IHP is sure to find an eager partner in IAHR and the recent signing of a Memorandum of Understanding between IHP and IAHR some 6 months ago is a first encouraging sign of renewed collaboration.

ICOLD was involved in the initial discussions with IHP-VII over collaboration under the Water-Energy nexus in Theme 2, but according to them were not involved any further. At interview, ICOLD expressed a lack of understanding as to why this happened and reaffirmed their interest in renewing joint projects. ICOLD still holds UNESCO in high regard. The Water-Energy nexus was amongst the least successful Themes of IHP-VII (IGC reports indicate that it was moved from Focal Area 2.5 to 2.3 to replace the Financial Focal Area, which was discontinued without any reported outcomes or activities). It is ironic that Water & Energy is now the theme of World Water Day 2014.

Water & Energy is not a theme that is being carried forward explicitly in IHP-VIII. This is unfortunate considering the growing interconnection between the two, and the growing concern about environmental impacts of hydropower and nuclear, and the less visible issues of water pollution from increased mining of uranium, fracking *et cetera*. Worldwide 15% of all energy is derived from hydropower and large volumes of water are required for cooling thermal and nuclear power stations. Faced with increasing urbanisation, the amount of energy required to provide drinking water and treat wastewater is bound to increase well above the current 8% of the total global energy production. The Union of Concerned Scientists (UCS) is a non-profit charity administered from MIT with over 400,000 members that is interested in this field and could also be approached: their interest in Fukushima rhymes with JIIHP.

The International Commission on Irrigation and Drainage (ICID) is another very active NGO that has a worldwide network with 55 active National Committees, plus 14 deemed inactive. It has a Working Group specifically focused on African affairs. It has developing interests in flood and drought management and in the impacts of climate change. It is a partner organisation of UN-Water and has contributed to the Stockholm Water Week and the UN Commission on Sustainable Development (UNCSD) Rio+20 2012, amongst other joint meetings. ICID signed the Framework of Cooperation with UN-Water's Decade Programme on Capacity Development (DPC) for the UN-Water Project on "Safe Use of Wastewater in Agriculture" (2011-2013). The latter project included UNU, UNEP, FAO and the International Water Management Institute (IWMI), but not UNESCO or IHP. There is the potential here for more valuable cooperation on projects. It is unfortunate that food is not receiving more attention under IHP-VIII, although it has recently been reported that UNESCO has appointed a task team on food and water security.

IHP has yet to move into the topics of virtual water and water footprints, but these are bound to become important issues in coming years. The Water Footprint Network estimates that "between 15 and 20 per cent of the water

problems in the world can be traced back to production for export to consumers elsewhere in the world": a significant issue. The same applies to the move to make institutions and businesses responsible for calculating their water footprints along the lines of carbon footprints. IHP cannot address every issue and most Member States are perhaps unlikely to raise these issues on their own. But could there sometimes be a case for IHP to nudge them into requesting investigations? The Water Footprint Network would be a valuable collaborator, especially as one of its founders has worked at UNESCO-IHE and developed teaching material for the World Bank Institute.

Many charities are also doing good work in capacity building and testing new approaches and installing new technology, especially simple, easily-maintained 'human-scale' technology, like elephant pump wells and treadle pumps promoted by Pump Aid or WaterAid. Many of these international charities are doing considerable work towards achieving the Millennium Development Goals on water and sanitation, e.g. Oxfam, Cafod, CARE and the Global Water Initiative (Appendix VI). They have good grass-roots connections with myriads of smaller organisations in developing countries. In this brief review of IHP activities, we have thus far found no reference to collaboration with such charities, yet there are many Themes in IHP-VIII that they could contribute to at low cost to IHP, e.g. rural settlements in Theme 4 and water education in Focal Areas 6.3 and 6.4.

Two other large organisations with strong water-related activities are conspicuous by their absence: the International Union for the Conservation of Nature (IUCN) and the Organisation for Economic and Cultural Development (OECD). IUCN has a long-standing and wide-ranging interest in water, especially through its Global Water Issues Committee (see *Competition and Comparative Advantage*). It is one of the three organisations collaborating in World Water Week 2014. IUCN is an example of an international Union or Association that works with charities: a possible model for IHP. Although IUCN has not had any extensive collaboration with IHP, only interaction in various fora in the past, they are open to suitable suggestions from IHP, so long as transaction costs are manageable and the partners "could genuinely help and complement each other".

The OECD is another major competitor and could offer expertise in business and finance. Note that this was an aspect of IHP-VII which was discontinued without producing any outcomes (the original Focal Area 2.3). Financing water projects and liaising with business is going to be more important for progress in delivering improvements consistent with the MDGs in the immediate future. Our interview with OECD proved encouraging. OECD did collaborate in the IHP-led Working Group on Groundwater Governance. Their interest in economic aspects offers a competence in an increasingly important area that IHP lacks. Conversely, OECD has not been involved in the management of transboundary water resources, which are going to have important, wider economic ramifications (even though most OECD Members themselves are 'upstream' users). Further, OECD's links with FAO on water governance guidelines stalled. OECD would be open to collaboration in the future, especially on groundwater governance. OECD lacks the network on the ground at river basin scale that is IHP's great asset and collaboration could be mutually advantageous (after the next WWF).

There are many other routes into collaboration with business. We note IUCN's collaboration with Danone, Nokia and others, and the fact that UNESCO has collaborated with firms like Nokia in the past. The aim is to avoid product placement and control from the business side. Projects need to be determined by IHP and businesses invited to offer support for pre-planned projects.

4.4 Conclusions

There have been many successful collaborations and a few less successful ones. Amongst the Category II Centres considered in details during this evaluation, IGRAC is one of several examples of a successful collaborator in IHP-VII. According to the Secretariat this also applies to ICHARM, ICIWARM, HIDROEX and CEHICA. The Centres in Dundee and Beijing have also collaborated well over the period, but there are some warning signs that need addressing.

Some of the IHP Programmes have contributed well to IHP-VII. WWAP by its nature is the most collaborative and has fulfilled its role well. With (recently approved) secure annual funding from the Italian government, the WWAP Secretariat is now entering a phase of financial stability. WHYMAP is also fulfilling its role well. PCCP has collaborated well in the recent past, but we are concerned that it shows signs of reduced activity and rather limited resources. IHP should view this field as one that it is uniquely placed to serve and develop.

A major weakness is the widespread lack of harnessing the work of Water Centres and Chairs into IHP Phases. This has been identified in previous evaluations (e.g. the review of IHP-VI called for "clarity" in the role of UNESCO Chairs and UNESCO Category II Centres in the implementation of IHP), but little if any action seems to have taken place. These entities should be flagships for IHP, spreading its brand around the world and focusing on the aims and objectives of IHP. Too many follow their own agenda once established. A much tighter rein is essential, set in the written conditions for bestowing the UNESCO brand upon them. This should be a requirement at the next stage of renewal of contract.

Of particular concern to us is the number of instances where the written material given to us for evaluation is at variance with what we have been told in our interviews with the people involved. This is compounded by the frequent cases in which the information posted on the UNESCO-IHP website is out-of-date or otherwise misleading.

Within the wider UN-Water the main sphere of collaboration has been in contributing to the WWDR. Otherwise, there is little cohesion and there seems to be a real need to encourage cooperation and to dispel the aura of indifference that was evident in the responses of many to our approaches. The one strong point is WMO, but even there greater dialogue and mutual understanding would not go amiss, and indeed are essential to maintain the relationship.

While concerns have been repeatedly expressed that IHP has lost focus and tries to do too much with too little resources, it is equally concerning if emerging water issues are ignored as it robs the programme of opportunities to regain its reputation as an international promoter of cutting edge research. A carefully selected set of themes that match the unique strengths of IHP is required for IHP to remain globally relevant in the years to come.

5. ADMINISTRATIVE ISSUES

5.1 IHP Secretariat: workload, efficiency & restructuring

The Secretariat is doing a reasonable job with limited resources. Most members appear to be overworked. They are handling a vast network of Centres, Chairs, Field Offices, programmes, projects and collaborations with other organisations both within and without the UN system. The IHP-V evaluators were concerned that the Division is understaffed and underfunded especially in light of the ambitions of future Strategic Plans.

Problems have been intensified with the loss of some posts over the last 4-5 years. Morale and working relationships are said to have suffered during the period of the interregna 2009-2012. The Secretariat needs a period of stability under the new Director once important issues of staff resources, funding, bureaucracy and some necessary restructuring have been completed. The Director has already set out a proposal for restructuring and staff redeployment, which has been discussed with the Director–General of UNESCO. An important component of this proposal involves reducing the number of sections in the Division. This is entirely appropriate and should be expedited.

Staff numbers and skills

Can a small Secretariat effectively manage this large network and heavy programme? Some staff are working very long hours. This is a long-standing problem aggravated by recent losses of staff. The IHP-VI evaluators commented on it: "staff numbers, their specialities and profiles at both the IHP-Secretariat and regional level ….. appear to be inadequate to effectively respond to the challenges". The problems have not been addressed and appear to have become worse. Some of the shortcomings in publications, website maintenance and post-programme follow-up may well be due to overwork.

The Director would like more scientists in the Secretariat who are better able to interpret the technical information they receive from the field. In view of the way global water issues have shifted more away from water availability towards governance, poverty, peace and security, the Director would also appreciate more social scientists. This is entirely appropriate and we second this move.

We commend this proposal to UNESCO and the 'Water Family'. We recognise that there are issues surrounding employment of social scientists within a Science Division, but it is necessary to better equip IHP for emerging demands in global water management.

In the *Funding* section of this report, we recommend that the Secretariat also employ a dedicated fund-raiser to highlight funding opportunities and to write proposals in collaboration with Secretariat personnel. A professional fund-raiser could relieve staff of the burden of writing and submitting proposals and bring to bear expertise that can increase the rate of success.

It is our understanding that enhancing staff resources will require some redistribution of funds internally within IHP, but that this should not be impossible. But more funding from other sources would be welcome. Even so,

the Division currently has 31 staff. Under the plans for IHP-VIII, they will cover 6 Themes each comprising 5 Focal Areas. Crudely speaking, on average this is one Focal Area per member of staff. Of course, it is not as simple as that suggests. There are two continuing cross-cutting and a dozen other long-running IHP programmes, but these mostly have their own secretariats. Also only 18 staff are permanent employees. A further 13 are 'consultants' on limited-term contracts and the remainder are unpaid interns. Any loss of interns or consultants would increase the workload for the permanent staff. Increasing capacity is not necessarily all about funds.

Innovative staffing: a few innovative ways of improving staff capacity and skills have been proposed to us. One is to hire professionals who have a 'track record' behind them: scientists who have completed a career in their chosen specialism and now wish to take on a new challenge. These professionals would bring their years of experience to the Secretariat, as well as their own networks, and would be more focused on management rather than trying to undertake original science.

Another is to offer sabbaticals for mature scientists and engineers from universities or industry. This would certainly be a cost-effective exercise and could expose permanent staff to invigorating new ideas. It could be one solution to the lack of social scientists. This also applies to secondments from research institutes or governmental agencies as currently practised in water-related disasters.

Students doing practical work experience from universities or UNESCO-IHE, as well as other types of applicants for internships, are often highly motivated, trained and enthusiastic, eager to gain experience at an international organisation. This too could relieve some of the pressure on staff.

Some years ago there was a proposal for a Prize for young scientists (cf. IHP-V Review). This has languished[10]. It should be revived and part of the prize could be a period of time working in IHP programmes, either in the Secretariat or in the field, or preferably both.

IHP Secretariat and the Division of Water Sciences

There is a certain tension between the permanent sections of the Division and the necessary fluidity of the Themes of IHP. Yet the same personnel are operating both. This engenders a tendency for the 'permanent' sections of the Division to be represented from one phase to the next, and dilutes the response to newly emerging issues. The Director, in consultation with the Director-General, has proposed reducing the number of 'permanent' sections in the Division. We suggest this should go further: to remove the permanent sections altogether. This would improve flexibility, prevent the development of entrenched fiefs, and facilitate responses to emerging issues. It might even improve inter-personal relations amongst the staff.

Reducing bureaucracy

[10] The prize still appears on the UNESCO-IHP website, but the link is inoperative. It should be removed if there is no prize.

Heavy bureaucracy is a major contributor to staff workloads. Although many other UN partners suffer high levels of bureaucracy, UNESCO's seems to be higher than most, as recent UN-wide academic research confirmed as well as interviewees from other organisations indicated. Some of the bureaucracy has increased in recent decades, much of it for valid reasons: getting the US to renew its support on a previous occasion may be one. Nevertheless, it requires a serious, urgent and thorough-going review at UNESCO level. Staff complain about the long time it takes to get funding clearance to attend conferences or to fund visits by external professionals: a number of cases have been reported to us where authorisation came too late and trips had to be cancelled. This damages the profile of IHP and goes against the recommendations of previous evaluators to maintain presence at international meetings and dialogue with the wider specialist community. Something seemingly as small as preventing the IHP logo being printed on the cover of a recent joint publication[11] with UNESCO's affiliate the International Hydropower Association (IHA) is not so inconsequential, it weakens the visibility of the IHP.

Internal bureaucracy within the IHP Secretariat is also high and sometimes counter-productive and ineffectual. Staff report spending an average of 70% of their time on administration, mainly internal bureaucracy, such as lengthy approval procedures for travel etc., which takes time away from administering the actual IHP work. This is a quite unsustainable level given the severe staff shortage. One partial remedy could be that the Secretariat employs two dedicated persons, perhaps a secretary assisted by an intern on a rotational basis, who do this to relieve the others.

Internal project assessment and tracking procedures need to be revisited. It is not as effective as external peer-reviewing and introduces a bias towards overly positive reporting. One member of staff suggested a "trust-based autonomy" supplemented by random checks as an efficient way forward. Current efforts are geared to prevent misconduct by introducing a control-based culture that burdens everyone in order to prevent a tiny minority from wrongdoing. When this results in staff spending such a high proportion of their time on these controls, causing direct losses in productivity as well as damage to the external image of UNESCO, then the associated direct and indirect costs of this distrust-based approach become truly tremendous.

5.2 The Intergovernmental Council, the Bureau and Member States

An oft-repeated complaint from Member States is that they lack representation on the committees that formulate IHP Programmes (cf. evaluation reports for both IHP-V and IHP-VI). The IHP-VI evaluators reported that "current governance structures do not enable Member States to effectively participate in how the programme is planned or implemented" and that "most countries would actively participate in IHP activities at the global level if they were members of the IHP Council and/or Bureau but will not otherwise". The earlier recommendation from the IHP-V review called upon UNESCO to "make sessions of the Intergovernmental Council and the Bureau more efficient and effective"

[11] *GHG Measurement Guidelines for Freshwater Reservoirs* (2010).

and that the members "normally represent their countries' interests rather than regional interests due to lack of formal regional and sub-regional governance structures". They further complained that key Member States that are affected by transboundary issues or climate change "do not have valid legal frameworks to represent views and interests".

We quote these reports at some length because we have encountered the root issues in the course of our much more restricted time evaluating IHP-VII. We posit to UNESCO that reform is too-long delayed and now urgently needed. This is not a recommendation made lightly. We recognise that it will pose fundamental difficulties and require legislative reforms.

It is necessary because Member States are supposed to be the prime beneficiaries and if they cannot get their voice heard they will walk away from the Programme. And IHP needs the support of Member States at all levels from the micro to the macro: from funding IHP Centres, Chairs, field projects *et cetera* to votes in the UN and UNESCO.

We have encountered other organisations that admit all Member States to planning meetings. WMO's Commission for Hydrology is one. OECD may have an easier time with just 34 Member States. Having a constituency that comprises some 84% of all nations on Earth is, however, a unique advantage that gives IHP unrivalled legitimacy. It should thus be viewed and treated as an asset even though coordinating such large number of Member States comes at a price. Improving participation through providing incentives may be one way to ensure better inclusion of all Member States, given that more than half of all IHP members were not involved in drafting IHP VII.

As a final addendum, Secretariat staff have pointed out that their required preparation and attendance at both IGC and Bureau meetings can be very time-consuming and repetitive and they would welcome a more streamlined arrangement.

5.3 Water-related Centres and Chairs and Field Offices

As identified under the heading of *Collaboration*, there is a marked lack of transparency in the processes of establishing Centres and Chairs. These need reforming in order to: (i) ensure that the recipients of the UNESCO endorsement are adequate for purpose; and (ii) that they tied into the Programme sufficiently for them to contribute to the aims of the Programme. Too many are not contributing and go their own way.

We recommend new structures that include pro-active, open calls for bids for Centre status and Chairs to investigate Themes, rather than the present reactive policy, which simply responds to outside requests, which are often mainly politically motivated instead of serving science. Good current collaboration seems to depend on individual staff being well-motivated. Future sponsorships should combine motivation with explicit contract requirements.

Chairs

We received only 3 replies from the 31 Chairs (just 10%), even when the requests were sent out from the Secretariat. This alone tells us that relationships are not very close and confirms the view that once established many Chairs have

little interest in UNESCO-IHP (see also reports of cooperation in the *Collaboration* section).

However, the issue is not one-sided. Lack of proactive communication from the Secretariat is also a problem. One respondent said:

> *"There is a lack of communications between the chairs and IHP. Sometimes, we do not know whom should we contact in the IHP. We should boost the cooperation among chairs, between the chair and headquarters and north-south and south-south cooperation. During the last two years, we did not have that many activities with regional offices of Amman and Cairo because of the absence of scientific officers in both offices. We need to have a meeting for water chairs once every two years."* (We added the red emphasis)

Another respondent said:

> *"more support needed to realize a full potential of the Chair that was established to assist UNESCO with the implementation of the IHP in sustainable management of groundwater" and "the relationship with the IHP Secretariat can still be improved. It seemed the UNESCO Sections failed to function jointly. As a result, the Chair was not fully involved in any UNESCO projects that were supposed to run under the framework of the relevant phases of the IHP activity."* (We added the red emphasis)

Water Centres

Just 10 of the 27 Category II Centres responded (40%) to questions regarding communication with the Secretariat. Most of them say links are good, but some make the point that the Secretariat should give Centres and others some "small recognition" for work that is well done. It was also suggested that Centres should be strengthened and regarded as the "front line" of IHP activities. Many stated that networking between Centres is "very important", but there appears to be little evidence of this occurring.

Regional Field Offices

There appears to be fundamental uncertainty as to exactly how many scientists in UNESCO Field office contribute to IHP or any water-related matters. Apart from the replies from the Regional Hydrologists who are located in various regional offices of UNESCO, a total of just 4 other officers replied. They reported a wide range in their experiences. The strong points – Montevideo, Beijing and Jakarta – are happy with relations. The Regional Bureau in Jakarta maintains strong links with Paris and runs an enthusiastic regional IHP steering committee. Beijing also maintains strong relationships with Paris and Jakarta. Other responses were less positive. One of the criticisms voiced by an otherwise rather enthusiastic and positive respondent is that only Regional Hydrologists have a formal role in IHP. This confirms the need to take stock of the number of scientists in Field Offices and develop clear guidelines and frameworks for how they fit into IHP and what is expected of them. There seems to be no records as to which Offices and scientific officers are involved in IHP or other water-related projects. There appears to be a lack of clear task descriptions for all positions, especially for scientific field officers and a lack of mapped structures. A Task Force should be set up to investigate and rectify this as a matter of urgency given the cost of these offices to the Division.

Regional Hydrologists

Three of the 5 Regional Hydrologists currently in post replied to our email providing positive as well as critical messages regarding the quality of cooperation with the Secretariat. Reports from the Cairo office detail many good

examples of cooperation: in water education, G-WADI, FRIEND/Nile, groundwater management, water governance, and the Water Science for peace development in Africa. Notwithstanding this, there are indications that there is a need for clarification and strengthening of the collaboration between headquarters and these key IHP staff in the field. Even a Regional Hydrologist who claims to be working closely with the Secretariat says there is still room for improvement for Paris to inform them of IHP activities in their region.

5.4 Conclusions

The Secretariat has suffered in recent years from lack of a divisional Director and reduced funds, which have affected staff relations and morale as well as hampered the delivery of results in some areas. It now needs a period of stability under the new Secretary, who also has plans for substantial reorganisation.

The global network, which is rightly seen as a major asset, is not functioning as it should. Many links are ineffectual. Most Chairs do not visibly contribute in a tangible manner. Many Water Centres tend to follow their own paths. Most National Committees in developing countries are non-operative or non-responsive. Several National Committees in developed countries are critical of IHP, some to the point of either going their own way or else withdrawing completely. Some are frustrated because they believe their voices are not being heard.

Chairs and Category II Centres need to be monitored more effectively, encouraged to participate more and have this enshrined in the founding agreements.

Within UNESCO and the Secretariat bureaucracy is too intrusive and counter-productive. It is damaging IHP in many ways: taking staff attention away from the essential process of running projects; preventing staff representation at international conferences; preventing adequate use of the logo and badging of products; hindering publication; and probably contributing to lack of supervision of the website. Staff workloads in the Secretariat seem too high as a result.

6. FUNDING THE FUTURE

Core funding is now significantly reduced. The withdrawal of the US from UNESCO in 2011 poses the greatest problem. The annual contribution from the US amounted to nearly $80m USD or 22% of UNESCO's budget. Israel followed. Given that the argument over the admission of the Palestinian Authority is intractable under US law and that the US withdrew before, in the mid-1980s, over issues of administration and accounting in UNESCO, the organisation is going to have to live with a significant reduction in funding through Member States' assessed contributions for the foreseeable future, perhaps indefinitely. In fact, the US has been in arrears for 3 years now. The lingering results of the recent global financial crisis are only going to aggravate the situation, with slow, uncertain and protracted recovery and many Member States short of funds. A hopeful note is that UNESCO has recognised water as second only to education in its priorities. As a consequence, the Division has been allocated 82% of its previous budget whilst other parts of the Sciences Sector have been confronted with more substantial reductions.

The programmes of IHP during the 8th Phase continue to be very ambitious. UNESCO and IHP have traditionally operated these effectively through outsourcing: through capacity added by collaboration with other organisations, through partners funded by outside bodies and through voluntary contributors. Financial shortages amongst these partners will quite likely reduce this capacity as well. Even in the UK, collaboration between UNESCO-IHE and the Dundee Category II Centre have now been curtailed through lack of funds from Dundee University.

Adding to these problems is the acceleration in the number of new Global Water Initiatives in recent decades, all competing for funds and partnerships. Possible solutions are the following: (i) to cut back on the range of the Programme, which may not be too unconscionable a result for some activities (see *Administrative issues*); (ii) to reconsider the internal allocation of funds to prioritise those activities that are judged most effective, productive, in need, significant for the international profile or simply what IHP does best (see *Competition etc.*); and/or (iii) to raise more extrabudgetary funds. One issue that a review of internal allocations might investigate is the large proportion of Regular Programme funds going to UNESCO Field Offices. Is this money well spent? To what extent is this money supporting specifically water-related activities? Half of the Regular Programme funds for the Water Division go out to support UNESCO Field Offices, yet staff in the Secretariat do not seem to know exactly how much water-related work is being undertaken by Science colleagues in the field (apart from the Regional Hydrologists). It does not appear to fit the current work programme or the finances. We recommend that the Secretariat establishes which Field Offices are contributing to water initiatives.

Certain sections of the Division already raise significant sums, like Groundwater. The Groundwater section has already raised some $10 million to support its programme over the next 5 years, largely from FAO. But lack of funds is already a key factor in the shortcomings of a number of other IHP activities, including delivery of results and publications.

The challenge is for IHP to 'sell its product'. There are already examples within the UN system, even within UNESCO. UNESCO-IHE raises a third of its money directly from the EU, the Bill Gates Foundation and Rotary International, amongst others. A further third comes from tuition fees. UNESCO training courses are typically free, but when PCCP contributed to courses organised with UNESCO-IHE trainees were charged €2700 for a 3-week module. True, UNESCO-IHE stood the costs of housing the courses and the students, but this still proved a profitable means of raising funds. The implication: introduce charges for courses. They need not be overly burdensome at the start.

The Secretariat should employ a fund-raiser to help staff identify sources of funding and to assist in presenting proposals in a manner most likely to find favour with the donors. Given that staff complain that they spend 70% of their time on administration, one would have thought such professional help would be welcomed. Such help would not preclude the input of specialist subject knowledge from the staff. But it would add professional capacity in an area that is largely lacking.

It could be an advantage to follow the UNESCO-IHE in developing and monitoring a future 'client base'. UNESCO-IHE makes extensive use of its former graduates to attract new recruits. A database of people trained in the numerous IHP workshops etc. could be used to track alumni(ae). Newsletters could keep them informed of progress in IHP and as some of them become decision-makers in the future their feedback could be solicited. Contact and feedback from 'graduates' in national water authorities could add useful insights into the needs of Member States and supplement the formal requests from ambassadors. Indirectly, this could increase funding in a number of ways.

6.1 Conclusions

The current reduction in core funding (regular programme budget) has negatively affected the quantity and scope of activities. Some Member States and institutions may well also reduce support for IHP-related activities in the future. IHP needs to become more commercial in raising extrabudgetary funds if it is to maintain its Programmes. Within UNESCO, the Division needs to be aggressive to secure, or if possible enhance, the proportion of funds it gets from the diminished resources available.

7. CONCLUSIONS

UNESCO-IHP has a long and enviable record of work in support of hydrological science and its application to practical improvements in water management. It has been working under severe difficulties in recent years, including a prolonged period without a permanent Director of Water Sciences and a reduction in core funding, in particular caused by the withdrawal of US contributions to the Regular Programme Budget. In addition to these internal issues, the wider world has been experiencing changes which impact upon the Programme: the credit crisis and recession affecting many of the global partners and governmental support for water centres and regional activities that IHP relies on so much for implementing its programmes; the rise of more competitors in the field of water and delivery of the aims of the MDGs; and the rapidly changing foci of public concerns, which demand flexibility in programme selection.

The big question is: how may UNESCO-IHP maintain its global position and adapt to meet the emerging challenges?

It is clear that there are two camps: many scientists see IHP programmes as failing; yet many international organisations within and without the UN system see IHP doing good work and having a strong global cachet. The latter camp cite IHP's presence on the ground around the world through Field Offices, Category II Centres and Chairs, which provide a network for implementing programmes, spreading good practice and receiving feedback, especially in developing countries. Some also see the UN mandate itself as a great advantage: the large number of Member States involved in decision-making adds legitimacy; and the possibility for the development of legal instruments, like Conventions, that confer powers to promote causes, with the potential for sanctions against malpractice. The OECD lacks both the networks[12] and access to the legal tools. Possibly only the ICID compares in terms of devolved global networks, but they are an NGO.

UNESCO commands worldwide respect, but this has come under pressure. It is more needed today with the effects of globalisation and increasing pressure on water, especially where there are shared resources. UNESCO has been doing well in conflict resolution, e.g. in the Nile Basin. Even in the US, surveys show over 80% of the populace supportive of renewed US participation and the Obama administration itself has tried to circumvent the 1990s legislation that blocks participation. The UN system also opens gateways to cross-disciplinary collaboration between organisations, and this is crucial for virtually all the water problems emerging this century. The work of WWAP and collaboration in the organisation of the World Water Day events and other events (such as the World Water Forum) are both a great service to the world and a high-profile achievement that commands respect.

Unfortunately, not everything in the system is fit for purpose. Funding and management issues have been taking their toll. A few moves may have been a 'step too far' and it is proving difficult to handle the large and in many ways unwieldy collaborative network. Communication and/or attempted communication between field offices and HQ are more often than not inefficient

[12] 90% of OECD work is done at the Paris Headquarters.

and at the very least time-consuming: we have reports of 500 emails a day for one person in Paris, and of field operatives not knowing who to consult in HQ. Add to this the widespread lack of references in the minutes of the IGC to contributions from Category II Centres and Chairs and reports from a number of respondents that they have not participated in IHP-VII (see Appendix III).

Too many Water Centres and Chairs are not playing the role for which the system was intended – to support the activities of IHP. At present, the Secretariat have very little control over these entities and very little means of encouraging greater engagement with IHP Themes, short of the end-of-contract reviews, which are cumbersome, few and far between and generally lacking in robust action when needed. Some Regional Hydrologists are not known to members of National Committees.

Far too many IHP National Committees are not working as intended. There is frustration to the point of withdrawal among key committees in developed countries, matched by general lack of functionality in many developing countries, ostensibly associated with overly political control. Again, as entities that are not under the direct control of the Secretariat, although they should be major planks in the implementation structure, it is very hard for Paris to enliven them. This needs serious attention. The IHP Secretariat must actively explore the causes of the problems with committees, country by country, because no two are the same. This could require sending missions to meet these non-performing Committees to discuss their problems and incentivise them if possible.

Why is Africa increasingly relying on its own structures like AMCOW? Have they lost trust in the UN system? Some of our respondents refer to the lack of representation of many Member States on the IGC. IHP needs to build upon recent successes in the Nile Basin and the Horn of Africa, and enthusiasm in Kenya with the new Category II Groundwater Centre. Finding and mapping groundwater in these regions coupled with science-based water conflict prevention and mitigation are IHP's strong points that IHP needs to build upon around Africa. The Principal of the new Centre singles out ecohydrology and spreading IWRM across the African continent as more priority issues that IHP is well placed to serve.

The structure and operation of the Division of Water Science and the Secretariat of IHP needs reviewing. There is an odd tension in the structure between the 4 'permanent' sections and the fluidity of the focuses of IHP phases. The 'permanent' elements can show a tendency to reappear in Themes from one phase to the next, and so dilute the response to newly emerging issues. The Director has proposed reducing the number of 'permanent' sections in the Division. We suggest this should go further, to zero sections. We expand this point under *Administrative issues*.

Then there is the other camp: the scientists and engineers in academia who say that IHP is no longer serving the science. They point to HELP and even FRIEND as no longer as healthy as they used to be, and to UNESCO running 'political hydrology'. They have a point. The IHD was founded on pure science and it produced results and some founding principles for hydrological process studies. There is still pure science to be done, in sediment and erosion, for example. But there is also the unavoidable fact that population pressures, urbanisation and climate change have radically altered the way science needs to

serve the world. IHP is right to focus on the social interfaces. As the UNESCO slogan says: "building peace". IHP must encompass socio-economic and even political aspects, but also harness sound science to serve them.

There are two problems here that feed poor opinions – in addition to the shortcomings caused by failing networks: poor projection of the IHP brand and lack of clear branding of good products. Visibility is low. The reviewers of IHP-V pointed to the importance of maintaining advocacy and nothing has changed. IHP ownership is not clearly displayed on most publications. Logos are a powerful force in the modern world. IHP is particularly poorly served by the UNESCO website (see *Competition etc.*). Many outcomes of IHP projects are hidden away, either embedded in long lists of UNESCO 'publications' which include many abbreviated minutes of meetings, or in separate sections of the UNESCO website. One such is the Venice Office webpage, which contains information on the IHP Danube Cooperation programme [13]: a major activity and a significant contribution to environmental protection and international peace that deserves to be more widely advertised, but there is no link to or from the IHP section of the UNESCO website. The Venice Office website is also not of a very good quality, offering no access to relevant publications under "ouputs" (*sic*) and a disclaimer under "Advertence" (*sic*) that "not all information may be available". Lack of updating is a common problem. This all displays poor attention to detail and a lack of oversight. To the casual observer, to the teacher in any level of education, and perhaps more critically to potential sponsors, this does not give a good impression.

All of the serious competitors of IHP have better websites, more comprehensive lists of publications and more visible branding of products. Even many individual IHP Programmes present themselves better on separate websites.

It is not, however, all about presentation. There are serious issues with the governance of IHP that must be addressed if it is going to be fit for purpose in the coming decades:

- the structure, skills and capacity within the Secretariat;
- communication with the wider network of Water Centres, National Committees and Chairs;
- introducing fresh rules for establishing new Centres and Chairs and applying strict and timely evaluation procedures for existing ones;
- motivating Member States, National Committees and all the other regional and local entities to participate;
- meeting the challenges of reduced funding with greater efficiency;
- a change from the culture that depends heavily on Member States' assessed contributions to one actively attracting more sponsorship;

[13] Ironically, changing world politics has not always served UNESCO well in recent decades. The shift from an essentially bipolar world to a multipolar world since the end of the Cold War has made some work more difficult. The Danube Basin is a notable case. When the IHP Danube Cooperation programme was launched in 1987, the Iron Curtain still existed. It is now proving more difficult to get agreement between the now independent countries of the former Eastern bloc and the initiative may be in danger.

- designing phases of the programme, themes and projects that are manageable and that serve global agendas as the key issues change[14]; monitoring the competition and avoiding themes that competitors do better; collaborating with more competitors and deepening collaboration with partners in UN-Water, as more and more issues demand interdisciplinary cooperation;
- exploring more collaboration with other Divisions and programmes of UNESCO, e.g. Ecological Sciences, MAB and Earth Sciences; and
- reaching out anew to scientists, engineers and managers so they want to contribute to IHP Programmes and do not dismiss them as 'political hydrology'.

[14] IHP cannot address all emerging issues. Its agenda is naturally driven by the requests of Member States. But the Secretariat should maintain a watching eye on developments. These currently include: water ethics, especially water as commons – despite the UN declaring access a right, privatization and the associated profit motive still clash with this; similarly, PPPs are being revisited a decade or so after the World Bank and Regional Banks made these a common requirement for loans; water pricing is an issue in the EU; water and energy continues to command increasing attention; and drugs in water has yet to fully emerge; both virtual water and water footprints clearly demands wider adoption in mainstream water management, to name but a few.

8. RECOMMENDATIONS

1. Improving links and motivation within the UNESCO Family global network

Integrating the network

IHP needs to have tighter control over certain elements of the Water Family, particularly Water Centres and Chairs.

(ii) For Water Centres and Chairs this should include new statutes and assessment procedures for the renewal of contracts and for the establishment of new ones that explicitly require contributions to current and future IHP Phases and Programmes.

(iii) The Secretariat should be proactive in soliciting bids for new Water Centres, not just respond to requests from Member States. New Water Centres should only be established when there is strong evidence that they will add directly to the Themes or permanent programmes of IHP.

(iv) Lines of communication need to be clarified so that everyone knows who is responsible for what in their region and at headquarters, and more dialogue should be encouraged between all elements.

(v) Assessment needs to be both effective and swift. It is currently sparsely applied, extremely slow and lacking in robust action.

Motivating the network

All elements of the network show undeniable signs of needing more nurturing.

(i) Entities should be given more feedback, praise for good work and assistance from the Secretariat with any problems or queries.

(ii) Collaboration with UNESCO-IHE should be strengthened without implying 'ownership'.

Engaging more National Committees

A thorough review is needed on how to motivate and engage more National Committees. This should not be confined to the LDCs, where activity is especially low.

(i) There is an urgent need to prevent Committees in developed countries from deciding that there is little reward for them and withdrawing.

(ii) National Committees in LDCs need more assurance of the benefits and closer collaboration.

Reinforcing associated and cross-cutting programmes

Some scientists single out FRIEND, HELP and GRAPHIC rather than the Phases as the unique strengths of IHP.

(i) Attention should be paid to maintaining, and where deemed appropriate, expanding the associated and cross-cutting programmes.

(ii) Special attention is needed for elements of HELP, ISI and FRIEND that are showing dysfunction in order to rectify the problems.

(iii) PCCP should be strengthened. It is a strategically important area where IHP has a unique contribution to make to current global agendas as transboundary resource issues are on the rise.

2. Improving operation of the Secretariat

The number of permanent staff is relatively small and staff workloads appear to be high. We propose a number of innovations below.

Restructuring the Secretariat

The Division and Secretariat need restructuring. The Director has agreed plans with the ADG to reduce the number of sections and to reassign staff, which we broadly support.

(i) We suggest that this could be even more radical and abolish the currently existing fixed sections completely in order to increase flexibility in response to changing demands of phases while establishing dedicated units to strengthen collaboration with end users and partners.

Diversifying staff skills and experience

Supplement staff numbers by:

(i) Offering sabbaticals for mature scientists and engineers from universities or industry.

(ii) Introducing a work experience in the Secretariat as part of the Prize for young professionals proposed in 2010.

Diversify and improve overall staff skills by:

(i) Employing more scientists and social scientists who better understand the substance of reports from the field. This is a particular request of the Director.

(ii) Hiring professionals with a 'track record' having completed a specialist career and are looking for a new challenge. These professionals would bring their years of experience and personal networks.

(iii) Improving project assessment procedures. Current self-assessment naturally tends to result in positive judgements, which fail to give early warning of any problems. A small working group should undertake a more extended review.[15]

Reducing bureaucracy and workloads

The level and slow execution of bureaucracy at both UNESCO and Division levels need urgent attention. They are hindering work on a variety of fronts, from project management to publications.

(i) Means should be found for staff not having to attend both IGC and the Bureau. It is very time-consuming and repetitive and staff would welcome this.

[15] We have been informed that the Executive Board has just established a Preparatory Group that is looking at this issue with the intention to propose a new mechanism to the next Board.

(ii) Employ a fundraiser to assist staff in raising extrabudgetary funds. Only a minority of staff are currently engaged in this, but we suggest that this needs to take a higher profile in future (see section 4 on Funding).

Improving operation and inclusivity of the IGC and Bureau

(i) A mechanism is needed for all Member States to be able to directly influence the formulation of IHP Programmes, as recommended by evaluators after both IHP-V and IHP-VI. Competitor organisations do this and it would help motivate countries and the Centres and Chairs they fund to participate more fully. Reform is too-long delayed and now urgently needed.
(ii) Make the operation of both IGC and Bureau more efficient – a frequent request in the past.

3. Raising the profile of IHP

The rapid rise of competing organisations means that IHP needs to be as efficient, effective and visible as possible and emphasise its unique strengths in order to maintain its position.

There is no field of study that is unique to IHP but it does have a number of advantages, which it must capitalise upon, including: the legitimacy bestowed on it by the UN mandate and UNESCO's strong worldwide collection of Member States; its network of regional and local institutions; and its position as the only UN programme that is specifically mandated to cover water.

IHP needs to:

(i) Raise its profile and visibility with both public and professionals.
(ii) Maintain visible ownership of products with wider use of the IHP logo and a new policy to ensure its use.
(iii) Facilitate staff attendance at international conferences by reducing bureaucratic delays.

Reconstruct the website

Reconstruct the website along lines similar to competitors, collaborators and the separate sites of IHP Programmes like G-WADI.

(i) Better presentation of aims and results on the website, including improving the navigation. Clear statements free from jargon that tell non-specialist readers what is actually being done.
(ii) Present publications better on the web, free from administrative clutter.
(iii) Regularly update and rigorously supervise the website.
(iv) Advertise recent history of successes like the Danube Initiative.

Promote publications

The results of all projects should be collated and published in book/eBook format at the end of each Phase, supplemented by more scientific and technical papers in international peer-reviewed journals. **More details are given under section 6 below.**

(i) Insist upon high-visibility acknowledgments in joint publications.
(ii) Relaunch the *Technical Documents* series as soon as funds allow.

Consider a Data Portal

(i) IHP should consider hosting a data and information portal, which provides a gateway to the websites of the international databases, like GRDC, GEMS/Water, GPCC, as well as IGRAC, FRIEND and HELP. This could raise its profile amongst the scientific community.

(ii) IHP should consider becoming a member of ICSU's World Data System and sending representatives to the ICSU International Conference on Data Sharing and Integration for Global Sustainability in November 2014.

4. Dealing with reduced core funding

IHP needs to respond to reduced future funding with a thorough review of its budget and its requirements with a view to:

(i) Establish internal priorities in administration and programme activities.

(ii) Focus on those activities that it is most able to deliver, that define IHP and increase its competitive edge.

(iii) Reallocate funds accordingly.

More specifically:

(i) IHP should become more innovative in raising more extrabudgetary funds. IHP should explore the possibilities of sponsorship from business in Public Private Partnerships, with the necessary safeguards to ensure the not-for-profit nature of collaboration. The culture of reliance on funds handed down from UNESCO needs to be transformed into a proactive approach, in effect selling its expertise.

(ii) IHP Secretariat should seriously consider employing a professional fund-raiser to assist staff in raising extrabudgetary funds.

(iii) The Division of Water Sciences needs to capitalise upon UNESCO's recognition of 'water' as its second priority in its negotiations for funds from UNESCO.

(iv) A review is needed on the large amount of funds that goes out to Field Offices with little in return.

(v) IHP should plan for the future 'client base'. UNESCO-IHE makes extensive use of its former graduates to attract new recruits. A database of people trained in the numerous IHP workshops etc. could be used to track alumni. Newsletters could keep them informed of progress in IHP and as some of them become decision-makers in the future their feedback could be solicited. Contact and feedback from 'graduate' in national water authorities could add useful insights into the needs of Member States and supplement the formal requests from ambassadors. This could repay the effort and lead indirectly to better support from countries in the future.

5. More efficient collaboration within UN-Water and beyond

The new Vice-chair of UN-Water should strive to achieve greater cooperation among its members.

(i) The relationship with WMO is important and IHP should make every effort to maintain this link.
(ii) Relations with IAHS need to be improved. IAHS has been a valuable partner, but problems have emerged recently. We have received numerous and forceful calls from senior hydrologists for IHP to deliver more for the science.

One way in which IHP might increase output at little cost would be by extending the field of collaboration to organisations that did not contribute to IHP-VII, e.g. ICOLD, IUCN, IAHR and OECD, all of which have expertise to offer.

(i) ICOLD should be approached again for possible collaboration as it has an increased interest in environmental impacts and could contribute to IHP-VIII on aspects of Theme 1 Water-related Disasters and Theme 5 Ecohydrology.
(ii) IUCN could potentially offer expertise in a wide range of fields, from nature to business, that would assist IHP.
(iii) IAHR also has considerable expertise and it is worth exploring further collaboration, especially given their initial keenness to participate in IHP-VII which was not capitalised upon.
(iv) The OECD is open to approaches and could add expertise especially on financial aspects.
(v) The Water Footprint Network could offer valuable new insights.
(vi) IHP might profitably explore the possibilities of collaborating with established international charities, with a view to utilising their vast knowledge and strong networks of grass-roots collaborators in developing countries, as IUCN does.

6. Design and operation of Phases

Designing the Strategic Plan

The formulation of the Strategic Plans needs to be reviewed as well as the delivery.

(i) Future Strategic Plans and assessments must be designed to:
- Align wording of Plans with reported results.
- Make objectives, activities, outcomes and benchmark results more amenable to quantitative evaluation.
- Maintain closer checks on progress at interim stages of the Phase.
- Use these where necessary to give feedback. The current process appears to end with summary reports to the IGC.

(ii) Future Plans need to be rigorously checked at the outset for deliverability by balancing specificity against generality to ensure the results are testable. It might be helpful to tabulate aims, activities and benchmarks in a similar format to Appendix II, to highlight issues more clearly and make it easier to determine which are quantitatively testable.
(iii) Overlaps with the agendas of other Global Water Initiatives should only be avoided when a competitor is demonstrably better placed to cover the field and it would involve unnecessary cost in money and effort to compete.

Length and content of Phases

IHP should earnestly review the aims and organisation of the Phases: IHP-VIII is longer than any competitors'. Every competitor we questioned thinks 8 year Phases are too long, notwithstanding the biennial reviews. Flexibility is a watchword in a rapidly changing environment.

(i) IHP should review whether Phases are the most appropriate structure for the future: as a model it is approaching 40 years old and many current competitors prefer to operate according to topical issues, which may not all require the same amount of time devoted to them.

(ii) Operating on timescales that differ according to the requirements of the topic under investigation could free capacity to focus on the remaining topics and spread the cost and effort of publishing reports. A major failing of the current *modus operandi* is that these summative reports never do get published.

(iii) The breadth of topics covered needs to be carefully assessed. Although the specialists we consulted were ambivalent on whether Phases are too broad, we note that two focal areas in IHP-VII failed to deliver and IHP-VIII is equally broad. This is also contingent upon the number of staff operating focal areas.

We recommend a Task Force be established to monitor emerging issues and focus of competitors. Flexibility must be the watchword in a rapidly changing environment.

(i) Work on transboundary issues should be strengthened. This is a focal area that IHP is very well placed to contribute to through PCCP and groundwater studies, especially the Horn of Africa initiative. Numerous respondents have highlighted this, even dubbing it IHP's "unique advantage". It is regrettable that it is marginalised in IHP-VIII.

Consulting end-users

There needs to be a specific requirement for project leaders to consult end-users.

(i) Build into each project a specific requirement to report results at the end of the Phase.

(ii) There should be a specific requirement for feedback to be sought from end-users after the end of a Phase. Current procedures lack follow-up assessment of Programme effectiveness.

Publishing results

There is a marked lack of end-of-project reports. These are important not only to publicise the work of IHP but also to attract more individuals and organisations keen to become future collaborators.

(i) Build into each project a specific requirement to report results at the end of the Phase.

(ii) Encouragement should be given to staff to publish in international journals. Publishing in the right journal papers can reach scientists, managers and policy-makers who are not directly involved in IHP, spread the word and increase motivation for scientists in or 'on loan' from universities.

(iii) There needs to be proper tracking and reporting of results beyond the end of each Phase.

(iv) 'Final Reports' are needed collating the results from Themes and projects. Results should be collated in a digested presentation and published. This should involve end-users. Lack of such reports is a frequent criticism from professionals we have consulted.

Appendix I: Methods of sampling the principal role players in IHP

Table 1 below lists all the **12 principal role players of IHP** and the extent to which they have been sampled for our review using **3 different methods**:

1 ***Interviews*** personal face-to-face, Skype, telephone organised by Secretariat or ourselves

2 ***Questionnaires*** various types differing in number of questions sent out either by us or by IHP secretariat (list of all questionnaires available)

3 ***Personalised email requests*** for answering written questions, which generally overlap with questions in questionnaire but were somewhat more tailor-made

TABLE 1: Categories of IHP relevant sampling populations including methods of data gathering, sampling rates and response rates used in this evaluation

Sampled population		**Total no.**	**Method of data collection**									
Main category		(in 2014)*	**Interviews** (face-to		**Questionnaires** (various types)			**Personalised email requests**			**Total sample**	
sub-structure			no.	sample rate	sent out	replies	response rate	sent out	replies	response rate	no	sample rate
IHP Secretariat/ Hydr. Sci staff	**total**	**32**	**11**	**34%**				**6**	**6**	**100%**	**11**	***34%***
permanent		*19*	*9*	*47%*				*6*	*6*	*100%*	*9*	*47%*
consultants		*7*	*1*	*14%*							*1*	*14%*
(unpaid) seconded		*1*	*1*	*100%*							*1*	*100%*
administrative, interns		*5*	*0*	*0%*							*0*	*0%*
UNESCO Water Chairs	**total**	**31**			**31**	**4**	**13%**	**1**	**1**	**100%**	**5**	***16%***
UNESCO - IHE (Cat. I centre)	**total**	**1**	**1**	**100%**	**1**	**0**	**0%**	**2**	**0**	**0%**	**1**	***100%***
UNESCO Water Centres (Cat. II)	**total**	**25**			**25**	**10**	**40%**	**1**	**1**	**100%**	**11**	***44%***
UNESCO Science Field officers	**total**	**60**			**60**	**4**	**7%**				**4**	***7%***
IHP Regional Hydrologists	**total**	**5**			**5**	**3**	**60%**				**3**	***60%***
IHP National Committees	**total**	**168**	**3**	**2%**	unknown	**1**	unknown	**1**	**1**	**100%**	**5**	***3%***
IHP Programmes	**total**	**10**	**3**	**30%**				**4**	**4**	**100%**	**7**	***70%***
UN-Water (members)	**total**	**29**	**1**	**3%**	**25**	**1**	**4%**	**3**	**3**	**100%**	**5**	***17%***
UN Funds and programmes		9			9	0	*0%*	1	1	*100%*	1	*11%*
UN Institutes		*2*			2	0	*0%*				0	*0%*
UN special agencies		9	1	*11%*	9	0	*0%*	2	2	*100%*	3	*33%*
UN Regional Commissions		5			5	1	*20%*	1	1	*100%*	2	*40%*
Non-UN IHP partners	**total**	**67**	1	**1%**				4	4	**100%**	**5**	***7%***
Intergovernmental Org.		*30*	1	*3%*	1	0	*0%*	1	0	*0%*	1	*3%*
International NGOs		*37*	3	*8%*	1	0	*0%*	2	2	*100%*	5	*14%*
UNESCO Environmental Programmes		*4*	1	*25%*							1	*25%*
International water scientists	**total**	**396**			396	31	*8%*	10	10	*100%*	**41**	***10%***
Other water organisations	**total**	unknown						2	2	*100%*	**2**	unknown
Total		**824**	**20**	**2%**	**544**	**53**	**10%**	**32**	**29**	**91%**	**100**	**12%**
method not used								total no. of entities approached			**596**	***72%***

** determined from mailing lists supplied by IHP Secretariat or other sources were not availabe*

- In total 595 individuals and institutional 'entities' have been approached by us using the 3 methods listed. This represents 72% of the total number of identified role players. Given the limited time and resources available, we believe this is a relatively large population. (NB: no value could be reasonably estimated for the total number of 'other water institutions'.)

- Out of the 595 entities approached, 100 provided information, equalling 12% of the total population termed *'sample rate'*, i.e. the proportion of the total

number of approached entities that provided information to us; the higher the sample rate the higher is the representativity of the results obtained.

- The highest sample rate (100%) occurred where only one specific entity was successfully approached, which in our case was UNESCO-IHE.

- Values for the sample rate range from 0% - in both cases because the entities have not been approached – to 100%.

- The sampling rate for the various IHP role players is as follows, in descending order of representivity:

  IHE (100%) > IHP programmes (70%) > Regional Hydrologists (60%) > Water Centres Cat. II (44%) > IHP Secretariat (34%) > UN Water members (17%) > Water Chairs (16%) > International water scientists (10%) > Non-UN IHP-partners (7%) > UNESCO Science Field Officers (7%) > IHP National Committees (3%).

- Interpreting the above order one needs to keep in mind that high sample rates are more difficult to obtain the higher the total number of the respective population is from which information is solicited.

- This partly explains the low sample rate for the 168 National IHP Committees together with the more important fact that this group has not been formally approached in its entirety, but only a few individual Committees selected by the reviewers.

- Since IHP National Committees are the actual end-users of IHP, the low representivity is of concern, as is the fact that it was not even in the framework of the review that these Committees were to be probed. Reports from the IHP Committees to the IGC/Bureau were not provided to us by the Secretariat, but we sourced some from internet. In our view, this reflects a general tendency in IHP that pays little or no attention to the actual end-users of its results.

- While the sample rate also reflects the extent to which a sample population has been approached, not just the success in doing so, the listed 'response rate' only reflects the proportion of approached members that did respond to our requests. As such it is a kind of success rate. (NB. As interviews need to be agreed upon before they take place, no response rates can be meaningfully calculated: it will always be 100%)

- Comparing response rates between the questionnaires and personalised email requests, it becomes clear that the latter method is more efficient by far, with an average response rate of 91% (n = 32) compared to 10% (n = 543) of the questionnaires. Of course, personalised emails are much more time-consuming and cannot be used for large volume sampling populations.

- However, response rates may indirectly also indicate to what extent the targeted sampling population has an interest in the matter at hand.

- In this context, it is of concern that the response rates of IHP role players such as UN water members (4%) and UNESCO Science Field Officers (7%), for whom a special interest in IHP can be assumed, was significantly lower than that of an arbitrarily selected population of nearly 400 international water scientists (10%) (see Appendix III). This also applies to the low response rate of UNESCO Water Chairs (13%).

- The best response rates were achieved from the Regional Hydrologists (60%, in part due to their relatively small number) and the Category II Water Centres where 10 out of 25 centres supplied information (40%).

Appendix II: Summative Tables - reported achievements of IHP-VII

The tables below have been created from the aims and outcomes specified in the Strategic Plan for IHP-VII and annotated according to the results reported in sessions of the IGC. Note that they are purely indicative, as the wording in the reports is not always easily correlated with the wording in the Strategic Plan. In addition, simply noting 'publications' or 'meetings' may underplay cases in which there are a relatively large number of meetings and publications. Furthermore, benchmarks are frequently stated as requiring 'significant uptake' of guidelines, methodologies *et cetera*, but rarely if ever is there a note in IGC reports that this has been followed up and measured.

Note on colour codes used:
Green = reported in 20th session of IGC (2012).
Yellow = reported in 19th session of IGC (2010) and not repeated in the 20th session of IGC.

1 Adapting to the impacts of global changes on river basins & aquifer systems

Focal area	Objectives	Activities	Outcomes	Benchmarks	Other activities
1.1 global changes & feedback mechanisms in hydrological processes in stressed systems	Spell out the effects of global changes – urbanisation, landuse, population increase etc. Focus especially on coastal, small islands, permafrost, glaciation, megacities	Develop indicators for assessing effects of change Develop methods of identifying adaptation measures for global change in different hydro-climates Evaluate changes in global dynamics in systems under stress (drought in arid; temperatures in cold) Consider processes such as thaw in permafrost, erosion, sedimentation, landslides, mudflows in highlands & risk mitigation	Documentation of best practice & capacities to prevent/remediate impacts of change in stressed systems, esp. in Africa & LEDCs Cooperative actions with International Sediment Initiative (ISI) on research on erosion & sediment processes & global change Evaluation of impacts of change on coastal areas, small islands, & megacities	Setting up inter-regional cooperative networks with other UN agencies & international & national associations Publication of guidebooks with best practice examples for coping with impacts in different hydro-climates	Conferences Training courses workshop
1.2 climate change impacts on the hydrological cycle & consequent impacts on water resources	To facilitate & support local research & capacity in developing countries Develop capacities for coping with climate change in cold & mountain areas Impacts on arid/semiarid = separate focal area	Participation of IHP Focal Points & National Committees in developing case studies & dissemination of guidelines Develop methods to assess impacts of climate change & uncertainties Develop indicators to assess impacts of climate change on water Improve understanding of spatio-temporal impacts of climate change through improved access to remote sensing Develop networks to exchange information on best practices in cold climates Maintain & strengthen links with PUB & improve modelling of gauged & ungauged basins Develop methods to mitigate impacts from declining hydrometric networks Maintaining & strengthening links with HELP & FRIEND Improving links with modelling & observational programs World Climate	Guidelines & case studies from network of established IHP Focal Points & National Committees Documentation of best practices on risk assessment & coping especially climate change Compilation of case studies with lessons learnt for mountain areas – publications, seminars Improved capacity in monitoring Valuation of snow & ice in stabilisation of climate change	Collaboration with PUB, HELP & FRIEND Contribution from IAHS, IAH, International Centre for Water Hazard & Risk Management (ICHARM) Contribution from strengthened links with observational & modelling programs (WCRP-GEWEX & UNESCO-ESA TIGER initiatives in Africa) Cooperation with database centres at regional/international levels (support from IGRAC & National Committees)	Publications meetings

		Research Program's WCRP-GEWEX, Arctic-HYDRA, UNESCO TIGER & ESA program on space tech for water management			
1.3 hydro-hazards, hydrological extremes & water-related disasters	Implicitly to improve responses to extreme events, natural/human	Support capacity building in Member States to better understand & handle hazards Propose effective methodologies for identifying & establishing inventory of surface/groundwater bodies less vulnerable to natural/human impacts in pilot regions & get case studies Publish guidelines to be used in emergencies (climatic, geological, conflicts) Promote cooperation by riparian states in transboundary basins Improve prediction of extremes (linking with UNESCO's International Flood Initiative (IFI)), IAHS, WMO Develop links with ICHARM Establish international network to address Groundwater Resources Management in Emergency Situations GwES	Documents of best practices on risk assessment, case studies of representative disasters Inventory of strategic surface/groundwater bodies for emergency use Establish partnership with Global Environmental & Ocean Sciences (GEOS(+ links with UNESCO's IFI, ISI & GwES initiatives Toolkits for assessing hydrological components of hydro-hazards & extreme events Adaptive strategies for environmental security, ecosystem protection, maintenance of productive capacity	Networking on water hazard & risk management (coordinated by ICHARM) Regional organisation of data capture, case studies, seminars	Technical support in Benin & Namibia floods + Haiti earthquake
1.4 managing groundwater systems' response to global changes	Need understanding of processes controlling movement & quality of groundwater resources Improve protection & sustainability	Raise awareness of decision-makers & public of importance of groundwater Assess impacts of global change- climate change, human pressure of groundwater Improve understanding of groundwater contribution to water cycle Better define growing population pressures on groundwater Improve understanding of effectiveness of Rainwater harvesting in Managed Aquifer Recharge (MAR) (supporting IAH-MAR initiatives) Better define submarine discharges	Documents of methodological approaches databases, GRACE satellite, modelling, paleohydrology Implement Groundwater Resources Assessment under the Pressure of Humanity & Climate Changes (GRAPHIC) projects to investigate fluxes with National Committees, ICHARM, IGRAC, GEWEX, GEOS, IUGS, IAHS, UNU-EHS, category I & II centres Evaluate availability of renewable/non-renewable groundwater especially in LEDCs Coordinate small island networks on capacity assessment, protection,	Information leaflets & publications Educational & training material, course, workshops Demo projects & research catchments to monitor global change, effective coastal groundwater management & MAR in variety of hydro-climates	*Journal of Hydrology* review paper in top 3 downloaded Conference contribution Training courses

			adaptation, remediation Toolkits for assessing response of groundwater Case studies in representative critical situations – semiarid, hard rock, coastal, islands Set up cooperation between IHP & UNU to develop joint program on groundwater & human security (with National Committees) Adaptive strategies to secure groundwater supplies & protect baseflows, ecosystems etc. (as part of MAR, reuse, demand management, dams, desalination)		
1.5 global change & climate variability in arid & semiarid regions	Special attention to arid/semiarid regions particularly vulnerable to climate change with consequences for society & environment	Define global changes in arid/semiarid zones – including climate change/variability Improve monitoring, data capture, processing, storage at regional level Evaluate impacts of climate change on drylands Prepare guidelines, best practices, case studies Develop regional networks & inter-regional transfer of knowledge (with National Committees & UNESCO Category II Centres in arid zones)	Dissemination of information on water development for arid zones through G-WADI project Regional network program development in C Asia & SADC Guidelines for monitoring hydrological processes in arid/semiarid zones	Set up regional networks Adoption of guidelines & best practice	Website Publication Workshop Training courses

2 Strengthening water governance for sustainability

Focal area	Objectives	Activities	Outcomes	Benchmarks	Other activities
2.1 cultural, societal & scientific responses to the crises in water governance	not explicit	Develop methods & practices to study relationship of population to water (historical, cultural, ethical) Foster public/stakeholder information/participation Develop better understanding, tools, best practices for integrating water resources management Develop better understanding of groundwater	Develop practical systems for public participation & adoption of best practice Identify & analyse critical case studies (including gender(Dissemination of lessons learnt	Conducting series of public participation events adoption by key stakeholders of best practice	Project Ground-water governance Extended Water & Culture program
2.2 capacity development for improved governance; enhanced legislation for wise stewardship of water resources	not explicit	Promote cooperation among basin authorities, regional basin commissions et al. (with support of National Committees, FAO, EU Framework Directive et al.) Capacity building & development of training materials Ensure due regard for cultural traditions & develop appropriate technologies	Case studies & best practice on public/stakeholder participation Organising training courses, for lawyers, engineers, water scientists Comparative studies with FAO & IHP Centre Dundee Case studies & networking with international & national organisations	Cooperative meetings among basin/river agencies Dissemination of training material	Publications Conferences Training courses toolkits
2.3 governance strategies that enhance affordability & assure financing Discontinued	not explicitly stated	Establish sustainability targets for water-related developments Evaluate direct costs, external economic effects, jobs & opportunities (with other UN agencies) Promote best practice for choice of financing options for capital investment Support UN agencies promoting local credit schemes aimed at affordable price & reducing poverty Comparative analysis of financing systems	Develop techniques to establish future targets under different climates & economic development Compare current tools for meeting targets A Handbook of best practice	Adoption of affordability issues in water-related investments, at pilot scale Dissemination of best practice in costs & economic externalities	NB: This Focal Area has been replaced – see below
2.3 originally	not explicitly	Identify key drivers drawing up case studies	Case studies & regional analyses	Intersectoral coordination for	Workshop

2.5 addressing the water-energy nexus in basin-wide water resources	stated	in several regions Capacity building to address multiple demands Develop technologies for stakeholders to better coordinate	Consultative & participatory seminars & meetings Development of management tools (e.g. hydro-economic models) Create operational networks of scientists & hydropower experts to build synergies	sharing water Development of new agreements at national level	participation Measurement guidelines published
2.4 managing water as a shared responsibility across geographical & social boundaries	not explicitly stated build on From Potential Conflict to Cooperation Potential PCCP	Reports on different interests in sharing common resources Development & implementation of cooperative national;/international management tools Assessment of existing approaches for joint multinational use of groundwater & surface/groundwater interaction Inventory & assessment of vulnerability of regionally integrated aquifers	Reports complementing existing ones on ongoing programs Examples of successful resolution of basin-wide problems Increased knowledge of essential factors in management	Adoption of internationally agreed norms for sharing resources Joint approaches by international financing agencies to technical & financial support of programs aimed at increasing global environmental gains (as defined by UN & GEF)	Training courses Conference Publications Using database UNESCO Chair study

3 Ecohydrology for sustainability

Focal area	Objectives	Activities	Outcomes	Benchmarks	Other activities
3.1 ecological measures to protect & remediate catchment processes	Scientific basis for establishing water management policies based on ecohydrology Biota should be seen as means of controlling hydrological & biogeochemical processes not just as protection target	Managing erosion sedimentation etc. by ecological measures Minimise mobile solvents etc. transported by ecological measures Managing interdependencies between water& biota for restoring biodiversity & biogeochemical cycling Bio-remediation & phyto-technologies for water & landscape rehab Enhancing water retention in landscape & developing ecohydrological methods for floods & drought mitigation	Inventory of regulatory feedbacks between hydrological & biogeochemical processes Setting up criteria for water management policies ensuring sustainable landscape development Demonstrate best in varied ecological & climatic zones	Strengthen cooperation with HELP & Man & the Biosphere MAB to reinforce IHP demo projects in ecohydrology Strengthen cooperation with WWAP, UNEP, GEMS/WATER et al. Elaborate mathematical models to quantify ecohydrological processes & provide tools	Workshops Field research on sediment problem Publication

3.2 improving ecosystem quality & services by combining structural solutions with ecological biotechnologies	Strengthen efforts to develop soft engineering, harmonising traditional with ecosystem needs Active participation in elaboration of transdisciplinary, cost-effective solutions	Combining structural solutions with ecological biotechnologies for risk mitigation Defining sustainability indices/ ecosystem carrying capacity & opportunity/limits for their enhancement Improve knowledge on use of hydrological-process/biota interactions Assess ecological effects of structural solutions	Developing models/tools & operational procedures for harmonising solutions Creating effective system for incorporating transdisciplinary solutions into national legislations (coordinated with IHP National Committees)	Setting up demo network of successful cases of soft complementing hard engineering Report on additional benefits from modified operational procedures, e.g. for dams Training/technology transfer	
3.3 risk-based environmental management & accounting	To incorporate profound environmental risk assessment in management strategies for risk mitigation/disaster management, taking account of global changes Major objective: establish quantitative techniques for assessing risk-based water requirements & provide guidelines	Strengthening risk-based environmental management esp. climate change Elaboration of risk mitigation methods (water quality, biodiversity, ecosystem stability) Elaboration of disaster management methods (social & environmental)	Establish principles for risk-based environmental management, accounting, protection Increase awareness of management & mitigation Report on transferability potential of above	Establish links with observational & modelling programs/networks for risk/disaster assessment, management, accounting Networking on hazard coordinated by ICHARM (cross-cutting with Theme 1) produce information leaflets, publications, media coverage of risk issues	Training courses
3.4 groundwater-dependent ecosystem identification, inventory & assessment	Strengthen ecohydrological research (building on) previous IHP studies on surface/groundwater interactions & groundwater-	Ecohydrological management of groundwater dependent ecosystems Understanding linkages between surface & groundwater Understanding linkages between fresh & saline water	Improved understanding of ecohydrological processes in groundwater dependent ecosystems	Improved integrated approach for managing surface & groundwater Identify best practices Establish case studies	Workshop

	dependent ecosystems To improve understanding of interactions in critical areas e.g. wetlands, river corridors, ecotone zones & role of feedback between s/gw & vegetation as a regulatory tool esp. arid, semiarid, estuaries, coasts				

4 Water & life support systems

Focal area	Objectives	Activities	Outcomes	Benchmarks	Other activities
4.1 protecting water quality for sustainable livelihoods & poverty alleviation		Inventory of natural contaminants in groundwater Provide assessment of risks to humans (arsenic, radioactivity etc.) Develop scientific evidence on reliable & sustainable evaluation of contaminant attenuation rates Disseminate information on methods for assessing residence times in aquifers & streams Provide scientific basis for planning protection Build public awareness	Guidelines for assessment & evaluation of natural & anthropogenic contaminants Database on attenuation rates of pathogens & contaminants Case studies of good practice Incorporation of these in curricula, training etc.	Significant uptake of water protection Targets adopted by Member States supporting MDGs & Water for Life	Workshops Conference Project Consultation initiative
4.2 augmenting scarce water	Identify & evaluate methods	Expanding methods of harvesting & increasing water retention in landscapes	Review innovation methods including MAR, rain harvesting,	Significant uptake of MAR & water reuse	Conference

resources, esp. in SIDS	to increase supplies	Improve Managed Aquifer Recharge (MAR) methods Providing scientific support to human/ environmental health implications of unintentional water reuse & guide safe reuse Research to enhance resilience of water supplies in coastal, island, arid areas Identifying means of conjunctive uses of different sources	reuse Establish network of exemplar sites Regional training programs Biennial symposia with IAH etal. To foster research & dissemination Guidelines for MAR & reuse	Substantially contributing to MDGs & Water for Life decade	Meeting Planning new project
4.3 achieving sustainable urban water management	Develop scientifically sound support for urban IWRM Increase use efficiency Mitigate flooding Consider emerging paradigms & novel approaches	Document best practices Assess effectiveness of strategies, including conservation, demand management etc. Evaluate strategies to improve quality of life Evaluate urbanisation pressures & methods to assess ecological status Promote best practice Capacity building	Reports/ guidelines on innovation Evaluate alternative water systems Reports/ guidelines on monitoring methods Tools for assessing urban water conditions & enhancing integration Capacity building & education	Major steps to improve URBAN water environments & quality of life for urbanites Dissemination of knowledge on improved approaches	Film Workshops Working groups Conference Publications
4.4 achieving sustainable rural water management	Develop scientific & public support for management in RURAL areas	Strategic assessments of socio-economic role & benefits of water in rural environment (considering climate variability) Archiving, disseminating, piloting best practice Develop knowledge of sustainable rates of utilisation Development of policies for fossil groundwater management Safeguarding water quality for health & food production Advocacy to anchor best practice in national/ regional governance	Reports on methods, case studies of best practices Development of materials for improved agricultural & aquacultural production in water-stressed areas using recycling, protection vs salinization, pesticides, fertilisers (partnership of FAO, Member States & NGOs) Assuring good quality drinking & for food production	IHP program accepted as part of national/ regional development programs	Background study Workshop

5 Water education for sustainable development

Focal area	Objectives	Activities	Outcomes	Benchmarks	Other activities
5.1 tertiary water education & professional development	Enhance tertiary education & training programs Catalyse wide dissemination of research Make communication & adoption strategies integral to ALL IHP projects (IHE & Cat 2 centres key partners)	Develop interdisciplinary materials foster interdisciplinary dialogue strengthen collaboration between UNESCO-IHE & others in UNESCO & UN contribute to book	Guide on communicating information Recommendations for broader curricula Assessment & pilot studies of regional needs	Increased coordination of university & professional development courses in UNESCO UNESCO-IHE, water-related UNESCO Category 2 centres, water chairs et al.	Workshops Action plan
5.2 vocational education & training of water technicians	Expand integration of principles & technologies for technicians	Prepare case studies, workshops, technical support for national demo projects, contribute to book	Guidelines for technician training Case studies, best practice publications	Inc capacity to focus on sustainable water management for technicians	Technical report
5.3 water education in schools	Improve capacity for water as a significant topic in K-12 curriculum	Providing technical support for Education Sector of UNESCO et al.	Book & support materials	Improved teaching tools	Cartoons Children's newspaper contribution Conference participation
5.4 water education for communities, stakeholders & mass-media professionals	Train water scientists/ managers to educate	Preparation of support material Develop website IHP book on education	Support material Community education website Demonstration projects	Improved strategies for community education Improved strategies for media reporting	Use TV channel Workshop Publication

Appendix III: Interpretation of results from an independent questionnaire survey

1) The Questionnaire

Sent out via email to:	364 scientists on IGU Commission for Water Sustainability mailing list, plus 32 scientists selected by Professor Jones
Total no. of recipients:	396
Date of sending:	31.1.2014
No. of questions:	18 main questions plus 8 sub-questions = 26 questions in total

Original text in email:

As Assessors for the 7th Phase of the UNESCO International Hydrological Programme IHP (2008-2013), we would appreciate your brief answers to following questions. Your opinions and experiences will help us identify areas in which the Programme might be improved during the next phase.
We guarantee complete anonymity, answers will be summated and no individual returns will be included in our Report.

Please just highlight or ~~delete~~ the appropriate answers, and be as brief as possible in questions requiring you to add a more specific answer.

1. Have you heard of the International Hydrological Programme before?
   YES/NO
   If no: please ignore all questions below and return the email to us – thank you!
   If yes, in connection with what?

2. Do you consider that IHP is adequately promoted worldwide?
   YES/NO/UNSURE

3. Which of the following activities do you believe the IHP is involved in?
   i. [Secondary] collating hydrometric data;
   ii. Capacity building in developing countries;
   iii. [Taking precedence] Improving water governance;
   iv. Networking amongst water organisations;
   v. aiding water charities;
   vi. Other areas (please specify);
   vii. Unsure.

4. Have you been involved in any part of the IHP?
   Past (YES/NO); Present IHP-VII (YES/NO)

5. If so, has your involvement been predominantly concerned with:

SCIENCE/POLICY/CAPACITY BUILDING/OTHER.

6. Have you been happy with the results?
YES/NO/PARTIALLY

7. Have you been happy with the assistance given to your project by the IHP administration?
YES/NO/PARTIALLY

8. Was there sufficient feedback given to you on the overall achievements of your sub-project?
YES/NO/PARTIALLY

9. Who facilitated your involvement?
   i. The National IHP Committee of your country
   ii. The UNESCO Commission of your country
   iii. Fellow researchers (national or international)?
   iv. Others (please specify):……..

10. Is competition between the activities of global water initiatives good or bad?
GOOD/BAD/UNSURE

11. Is overlap between the activities of global water initiatives good or bad?
GOOD/BAD/UNSURE

12. Do overlaps offer the following (tick all appropriate answers):
   i. Different insights & operational approaches;
   ii. Competition for limited funding;
   iii. Spread effort thinly.
   iv. Other (please specify):……..

13. Are you involved in a competing OR collaborating water organisation?
Competing (YES/NO); Collaborating (YES/NO)

14. If so, are relations with IHP GOOD/POOR/ NONEXISTENT?

15. Has involvement with IHP-VII (or earlier phases) made possible initiatives that would not otherwise have been funded?
YES/NO/UNSURE

16. What do you consider the **unique advantages** of IHP compared with other global players?

17. What do you regard as a specific weakness of IHP?

18. How would you improve the programme?
   i. In your opinion, is IHP too wide in scope or not wide enough?
   YES/NO/UNSURE

ii. Is there an important water-related topic that is not yet addressed by IHP and should be incorporate?
YES (please specify)/NO/UNSURE

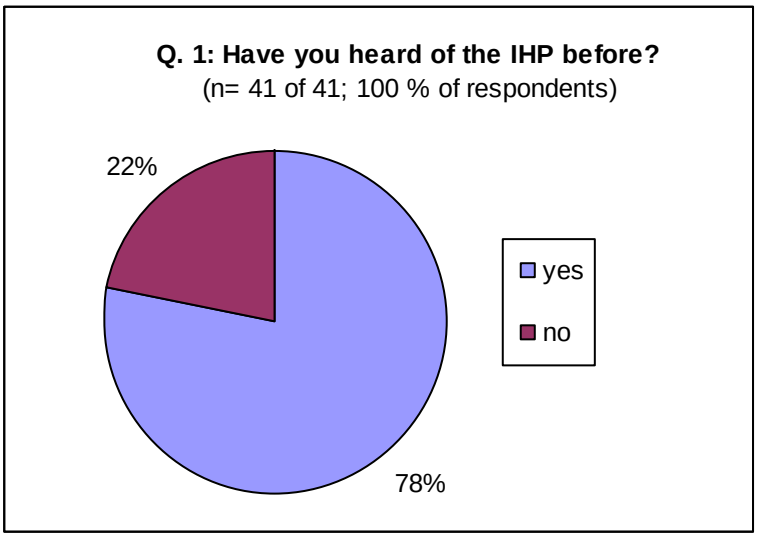
iii. Is there a focal area in IHP you would like to remove from the programme?
YES (please specify)/NO/UNSURE

Please identify your profession:
Academic: scientist; engineer; management
Practitioner: scientist; engineer; management
Economist/civil servant/ other (please specify)

Please feel free to forward this questionnaire to any colleagues who you think might be interested in expressing an informed opinion.

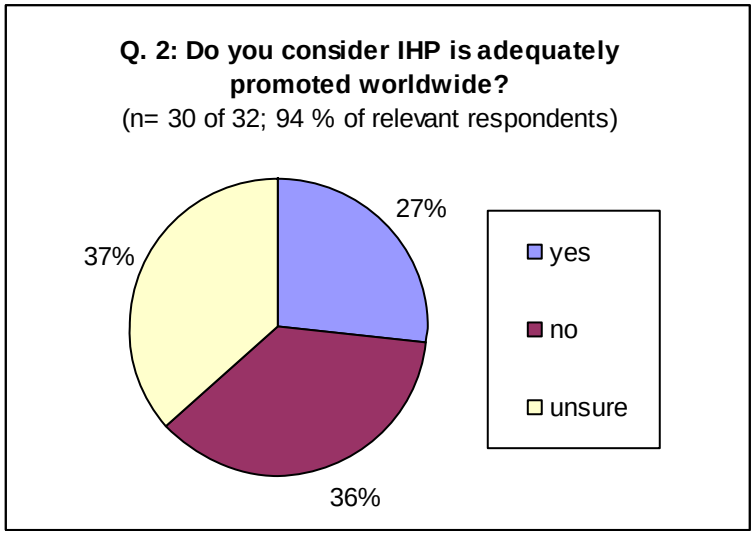
Please return this email questionnaire to: tonyandjenjones@btinternet.com
Thank you very much for your help
Tony Jones (UK) & Frank Winde (South Africa)

2) Interpretation



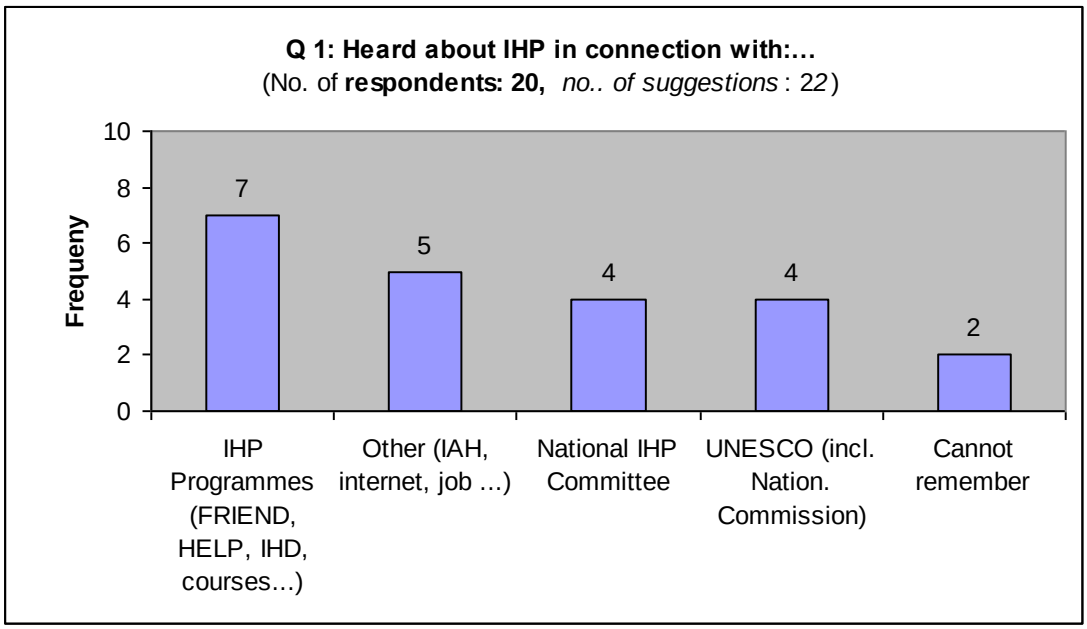
- The high percentage of 'yes' replies presumably reflects the fact that persons who had not heard of IHP before are less likely to send the questionnaire back than those who had.

- Sent out to approximately 400 people the 41 returns equal a response rate of ca. 10%. This is higher than from some of the Water Family members.



- Only those who had answered more than the 1st question were considered 'relevant respondents'.

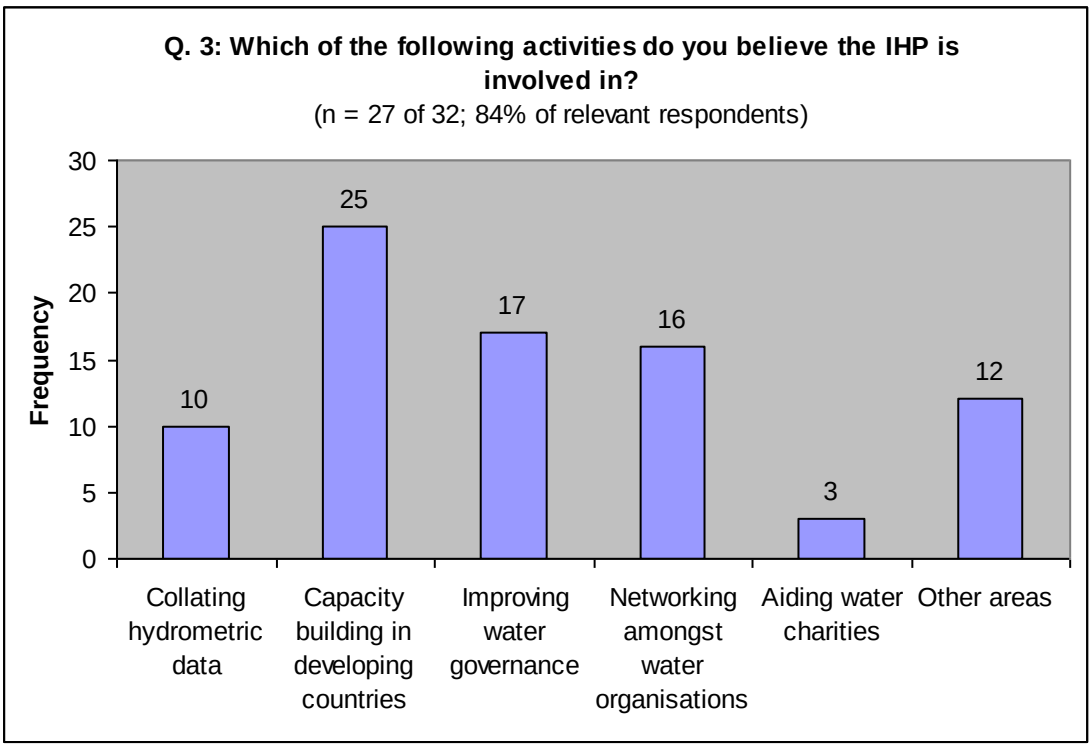
- 2/3 do not agree that IHP is adequately promoted.
  → This confirms our experience/ impression.



- Direct contacts to 'UNESCO' and 'National IHP Committee' combined are the most important entry point (8 out of 20 = 40%).
  → This means that other entry points such as the internet, fellow researchers etc. are less important. This is consistent with the low visibility finding.

- Approximately a third of respondents indicate that working in IHP programmes as main context
  → No surprise given that ca. half of all respondents worked in IHP.

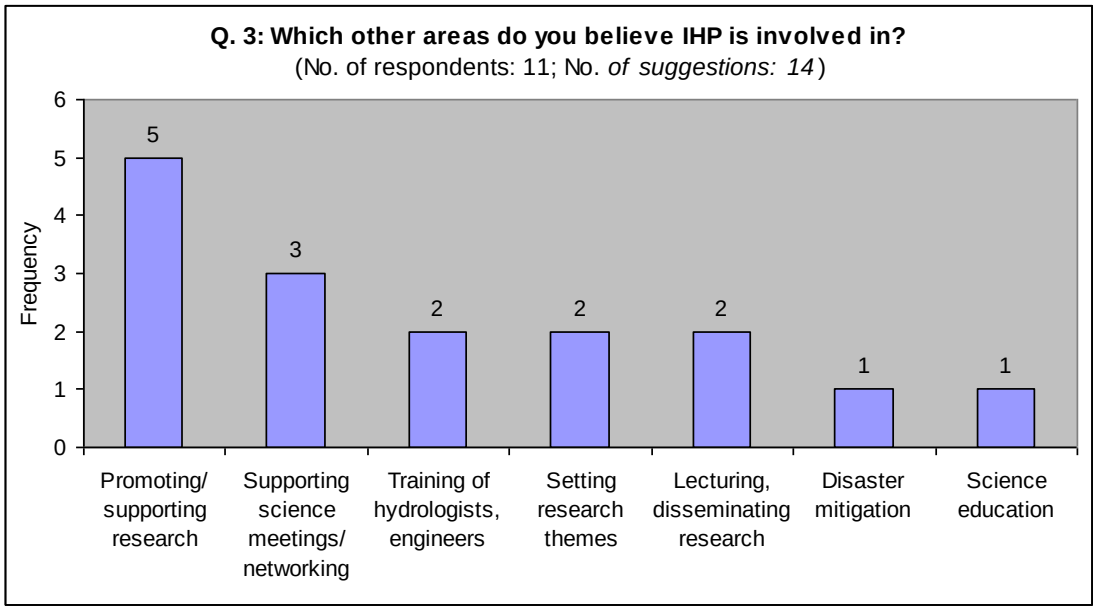
→ By implication that may mean that fellow researchers are the second most important entry point into IHP after direct contacts with IHP Committees/ UNESCO.



- 'Capacity building in developing countries' is the most commonly cited activity of IHP, marked by 93 % of all respondents that answered the question.

- In contrast, 'collating hydrometric data', as the original starting point of the IHD, meanwhile only ranks second to last in total (mentioned by only 37% of respondents) and last among the 4 given applicable activities (i-iv).
  → This may reflect the perceived decline in hard science within IHP in favour of the growth of other aspects such as 'improving water governance' (63%) and 'networking amongst water organisations' (59%).

- A total of 44% of respondents identified activities in 'other areas' not listed in the question to IHP.



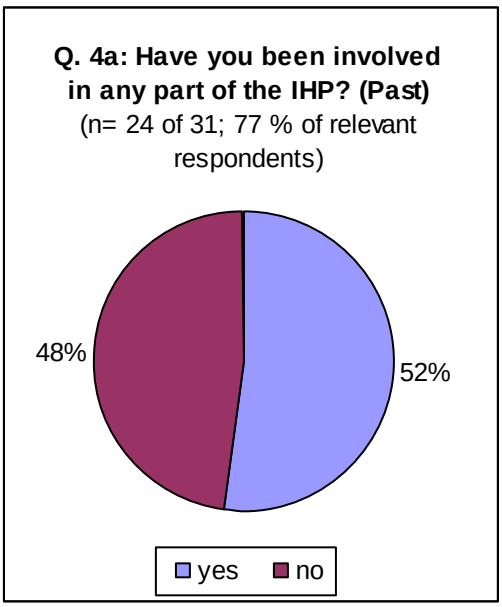
- Most respondents (45%) who selected activities belonging to the category 'other areas' felt that 'promoting and supporting research' (category named based on the text answers of respondents) is a major activity of IHP.

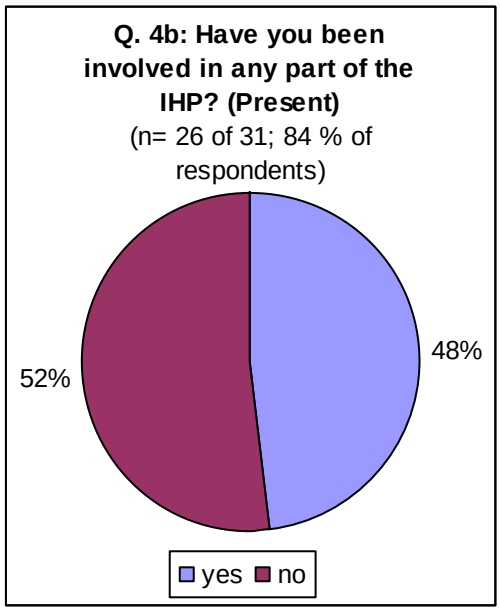
- 27% proposed that the 'support of scientific meetings' and 'networking' amongst scientists is also an IHP activity.

- If combined, the 3 categories 'training of hydrologists, engineers', 'lecturing, disseminating research' and 'science education' account for 45% of responding water scientists relating IHP mainly to capacity building and education (with some overlap to category ii in question 3).

- This means in the perceptions of water scientists there is a balance between the science focus of IHP and its educational task.

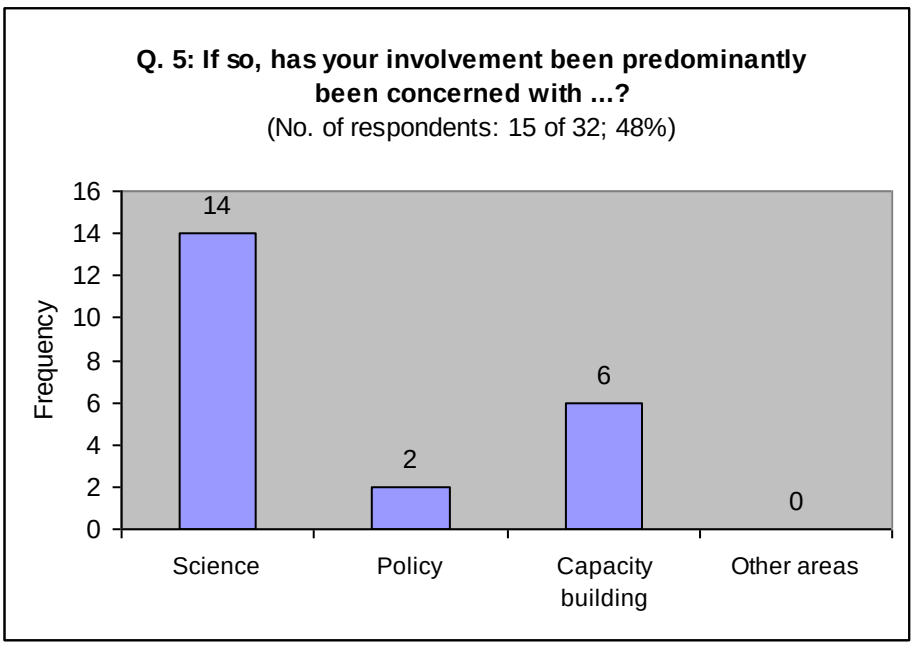
- Only 2 out of 27 (7.5%) respondents to question 3 felt that IHP is 'setting research themes'.
  → This low percentage corresponds to our findings elsewhere that the ability of IHP to set global water research agendas was questioned.





- Nearly half of all respondents that answered more than the first question ('relevant respondents') have been involved in IHP either in the past or at present.

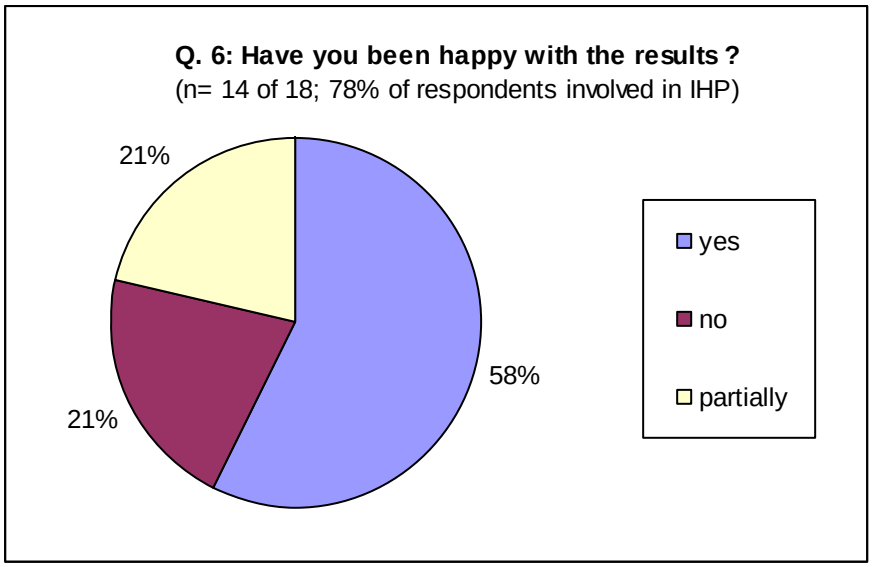
- This is certainly not representative for the almost 400 scientists approached and is thus believed to reflect a bias of replies towards those scientists that have been involved in IHP and felt a stronger need to reply than those that had not been involved or never heard of IHP before (relates to interpretation of question 1 – sub question re context).



- More than 1 category could be chosen resulting in more answers than respondents.

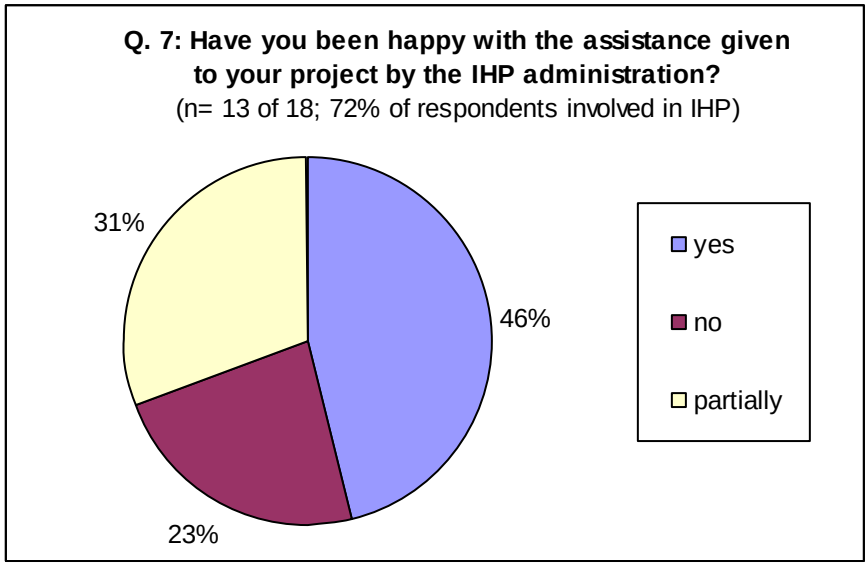
- The overwhelming majority of scientists that had been involved in IHP worked in 'Science' (93%).
  → This corresponds with the fact that 91% of the respondents are indeed scientists (Question on 'professional background').

- The fact that less respondents were involved in other areas such as water policy or capacity building is likely to reflect the bias of selecting colleagues working in our own fields of interest.



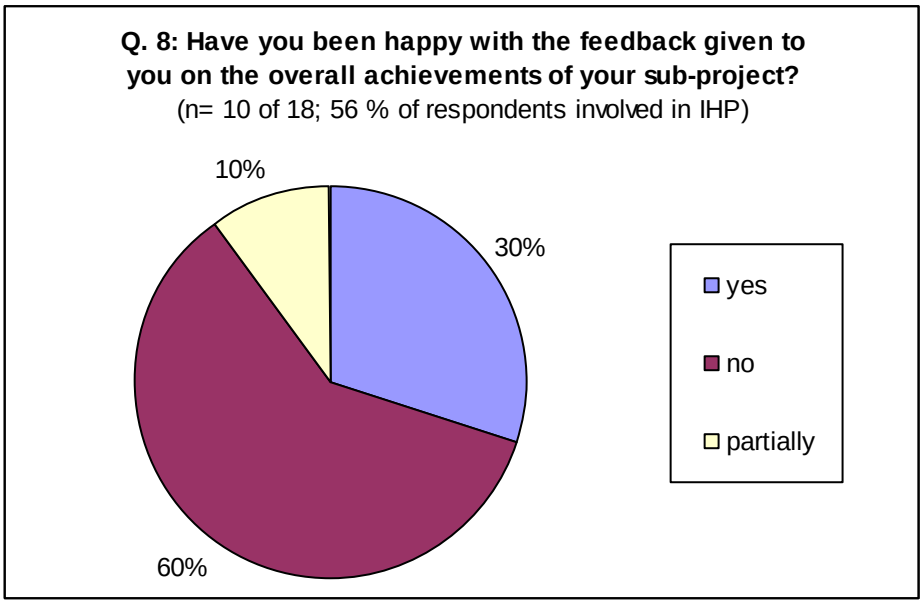
- The fact that 42% of respondents that have been involved in IHP are not fully happy with the results should be of concern.

- A possible follow-up investigation into the underlying reasons for the dissatisfaction could be considered.



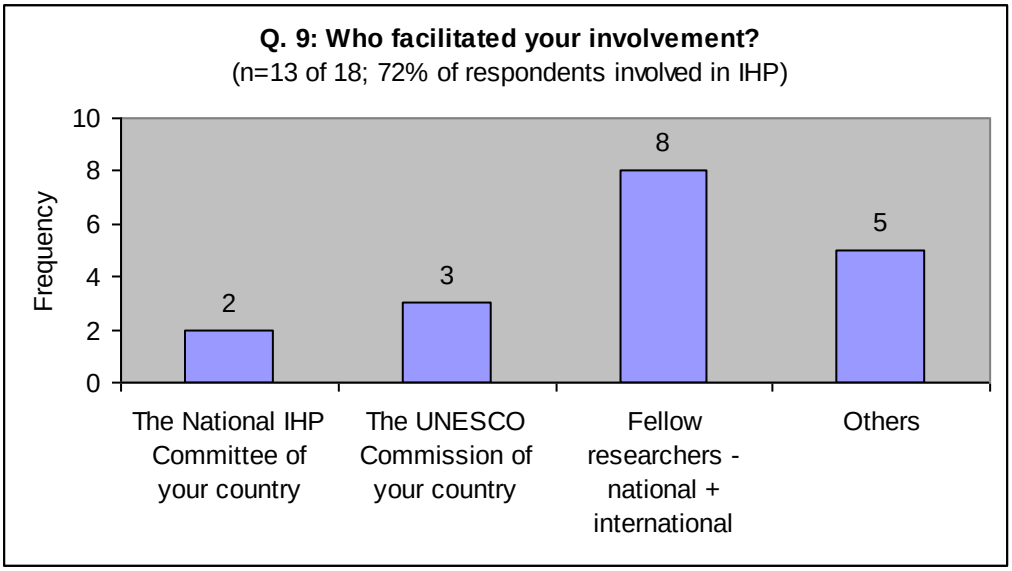
- Even less positive is the perception regarding the administrative assistance given during IHP projects where the majority is either negative or only partially satisfied.

- As administrative support is a core function of the IHP Secretariat reasons for such sub-optimal perceptions should be investigated.



- The poorest response received. The feedback provided on achievements with 70% of respondents not being fully satisfied and 60% being downright not satisfied.

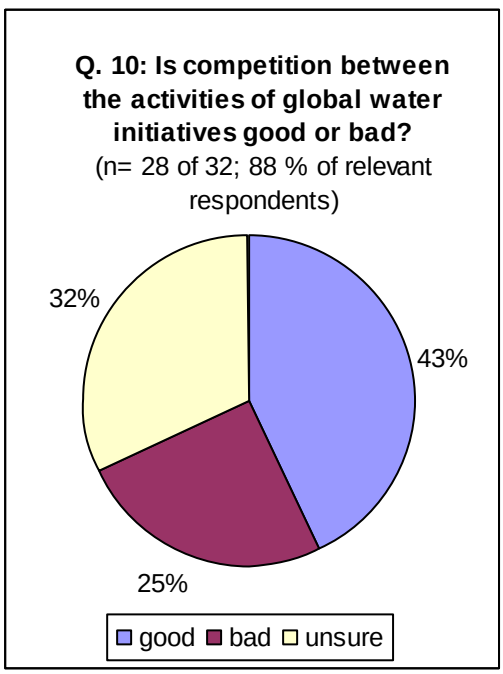
- This category falls largely under the responsibility of the Secretariat and needs to be addressed.

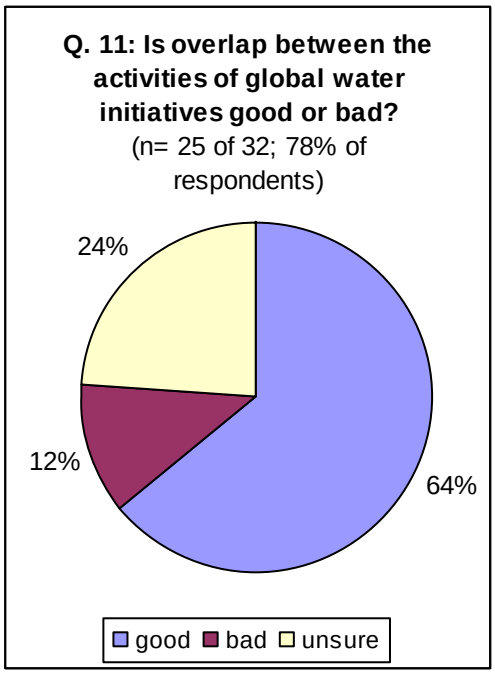


- More than 1 option was possible, potentially resulting in more answers than the number of respondents

- This question relates to question 1 sub-question on context and largely confirms that the two major entry points into IHP are fellow researchers (62% of scientists) or direct contacts to either UNESCO Commissions (23%) or IHP Committees (15%)

- Other entry points were used by as many people as UNESCO and IHP put together





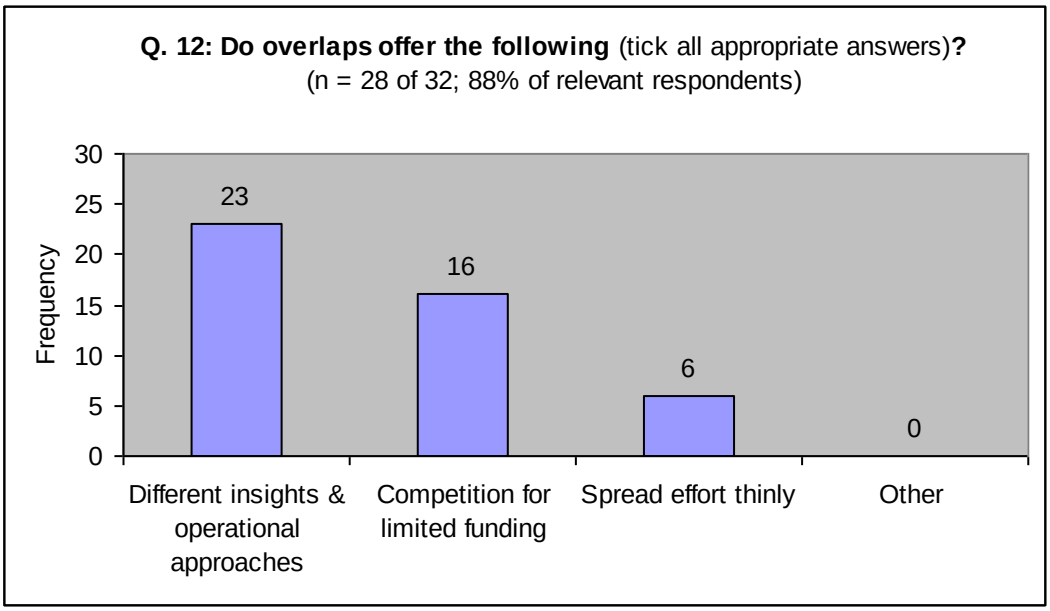
- More answers on 'competition' than on 'overlap'.

- While a quarter of respondents think that competition is bad only half of that proportion think that overlap is bad, two thirds regard overlap as positive, while less than half think the same of competition.

- Thus, generally 'competition' is viewed more negatively than 'overlap'.

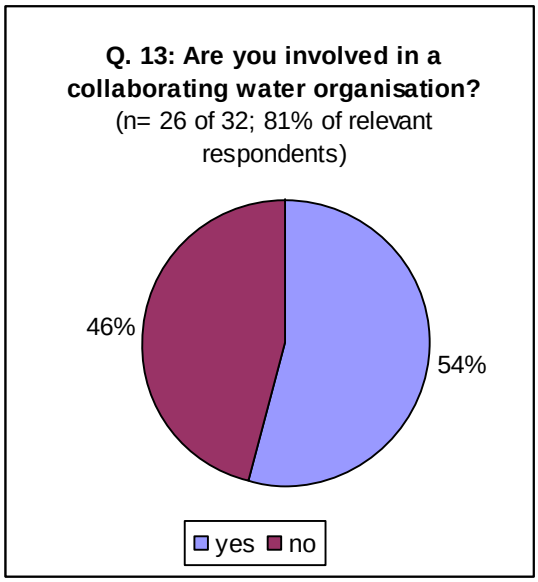
- Regarding possible implications for developing/modifying IHP strategies that would mean that overlaps between themes are considered beneficial and should not be curbed while competition is seen much more ambiguous and should rather be avoided.

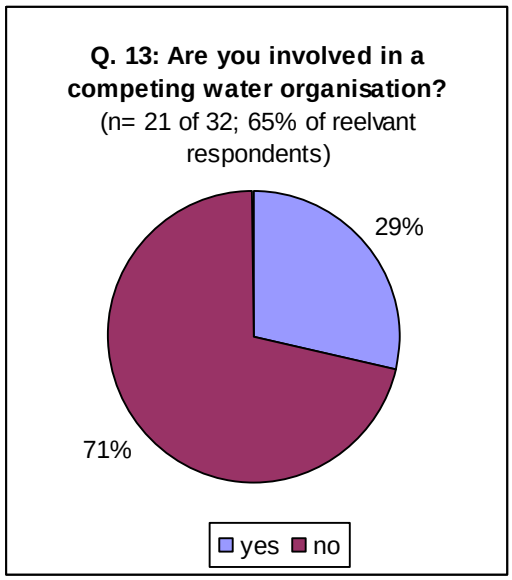
- This relates to question 12 where perceived effects of overlaps are explored.



- 82% of all respondents see that overlap is ***positive*** by providing 'different insights and operational approaches'. This compares with a total of 78% who see ***negative*** effects (ii + iii).

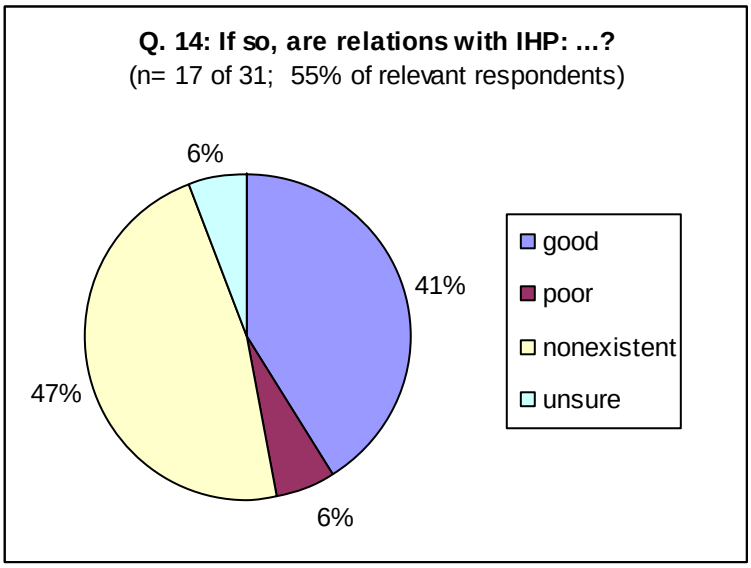
- The consequences for design of IHP phases could include increasing overlap between various disciplines researching similar topics in order to increase robustness of findings by comparing the respective results and methods while preventing negative side effects, such as completion for funding and human resources. But there is currently no mechanism for rigorous comparison.





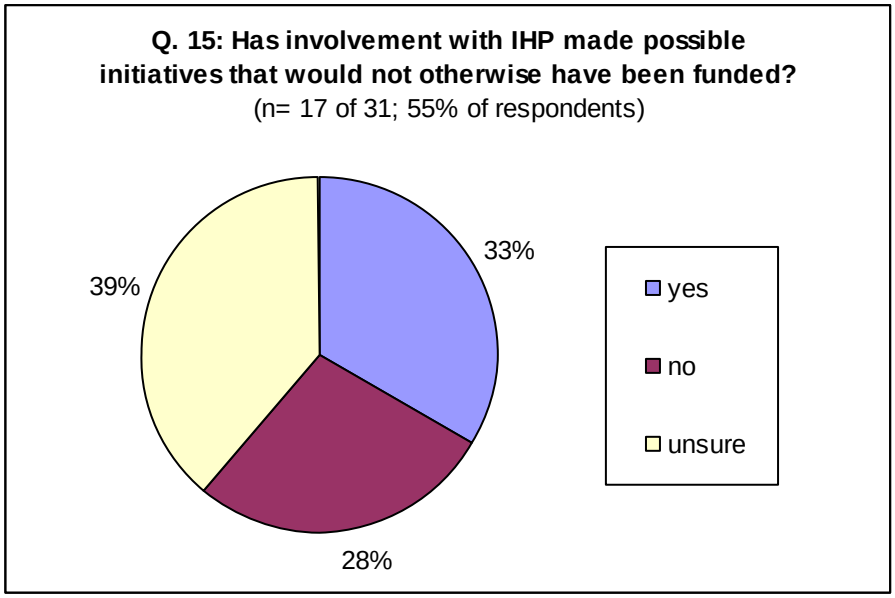
- More scientists answer the question on 'collaboration' than on 'competition' (26 vs. 21).

- The proportion that claims collaboration is nearly double those who admit to competition.
  → This may reflect the sentiment discussed in questions 10 and 11.



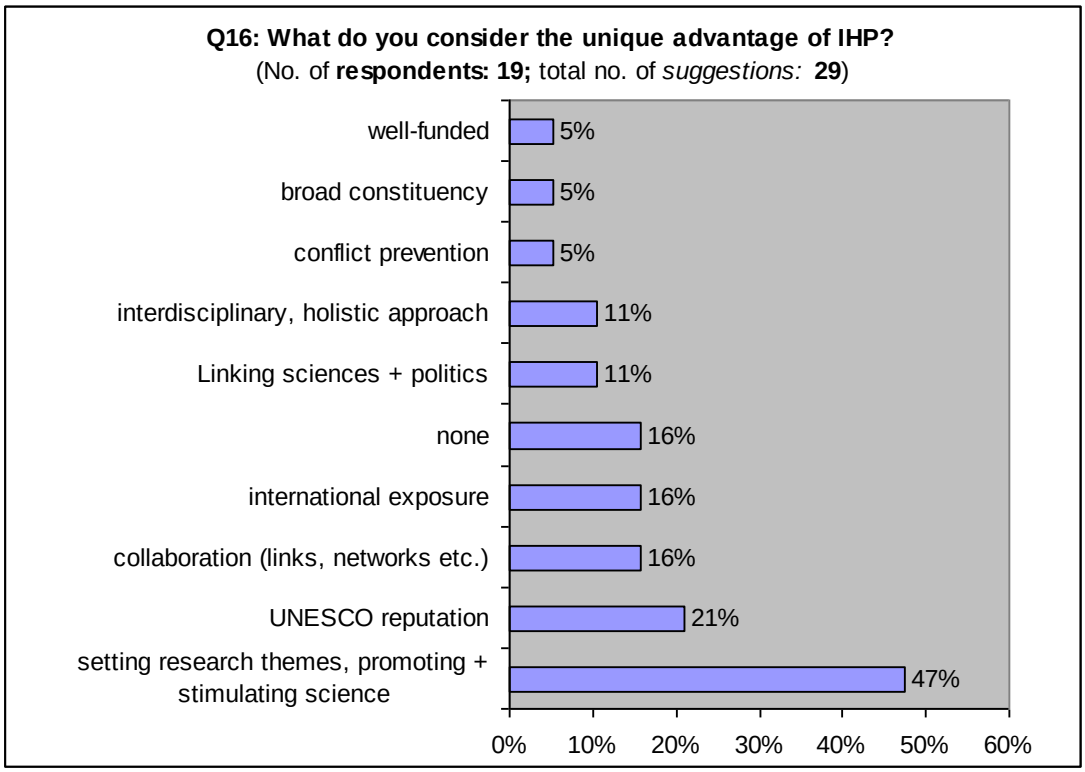
- Has relevance to questions 7 and 8 and confirms the overall negative perception of administrative support and feedback with over half of all respondents (53%) stating poor or non-existing relations with IHP and another 6% that is unsure.

- This is clearly of concern and should be addressed by the Secretariat.



- In 36% of all case, IHP involvement is perceived as having opened up other opportunities, with potentially more among the 35% of 'unsure' replies.

- This aspect needs to be strengthened and used in advertising IHP.



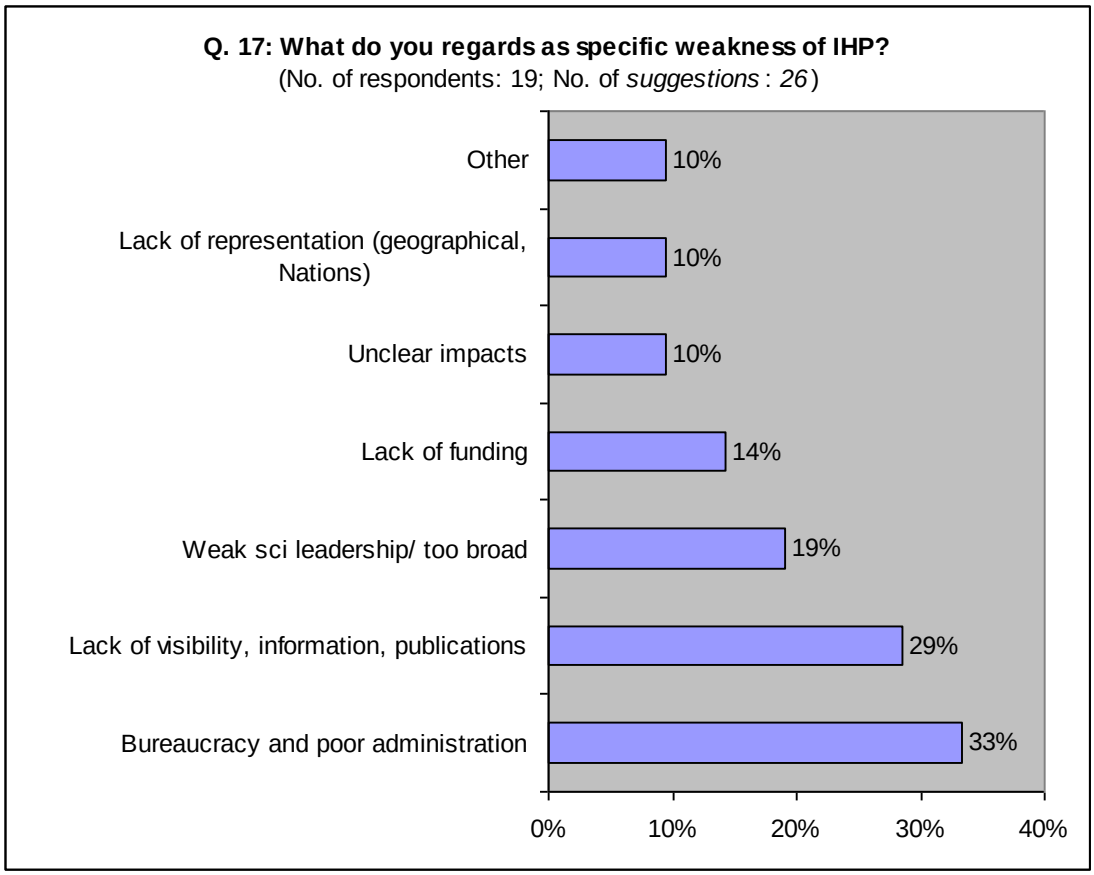
- Considering the increasing competition for funds, this question is regarded as crucial for strengthening the position of IHP in the future.

- The displayed categories could be used as pointers of what can be emphasised within IHP in order to sharpen its profile and gain advantages over competitors that are visible to potential donors.

- The most commonly mentioned 'unique advantage' is the ability of IHP to set and support certain research themes and stimulating science.

- This is followed by the good reputation of UNESCO (based on good work in the past) and the possibility of international networking and collaboration.

- While not being so prominent in the perceptions of the scientists approached, we believe that the 'broad constituency' as well as its potential for 'conflict prevention' (and resolution) are very important points that warrant increased attention.



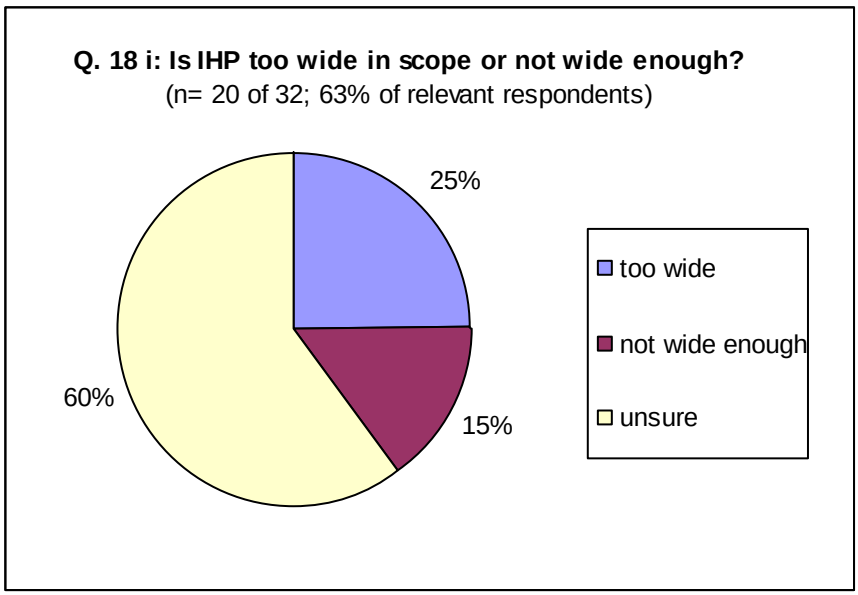
- Again this question too is important for the future of IHP as it identifies the areas that need improvement

- The leading complaint of 'Bureaucracy and poor administration' concurs with our findings from other questionnaires and interviews as well as our own experience in dealing with UNESCO administration procedures. Solving this problem may be of crucial importance for the future of IHP

- The second biggest concern of 'low visibility' also echoes what many interviewees and other respondents stated

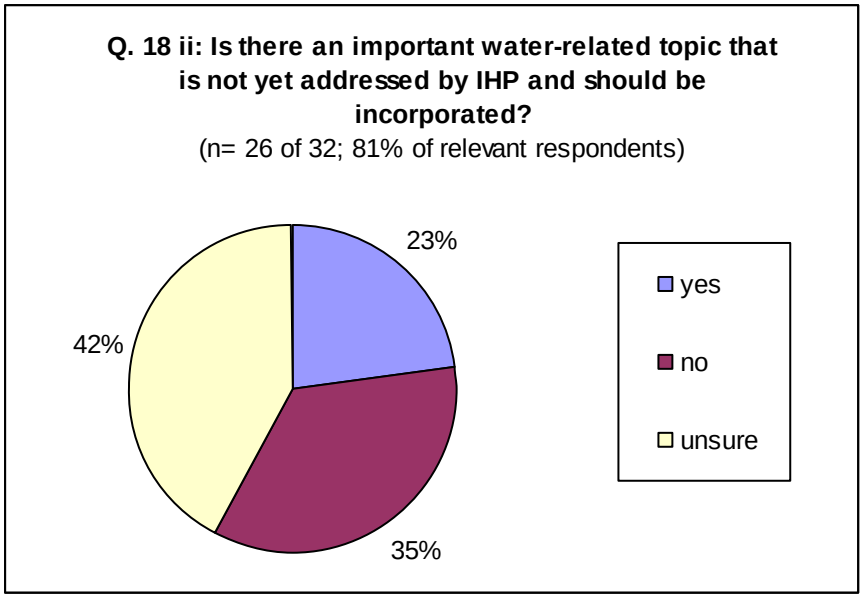
- Interestingly, the often lamented 'lack of funding' is clearly perceived as less important as made out by some administrators in Paris and features only in fourth position after 'weak scientific leadership and too broad a scope' of IHP

- Lastly, the 'vagueness of impacts' has been repeatedly pointed out by previous IHP reviews and thus confirms the high visibility of this flaw



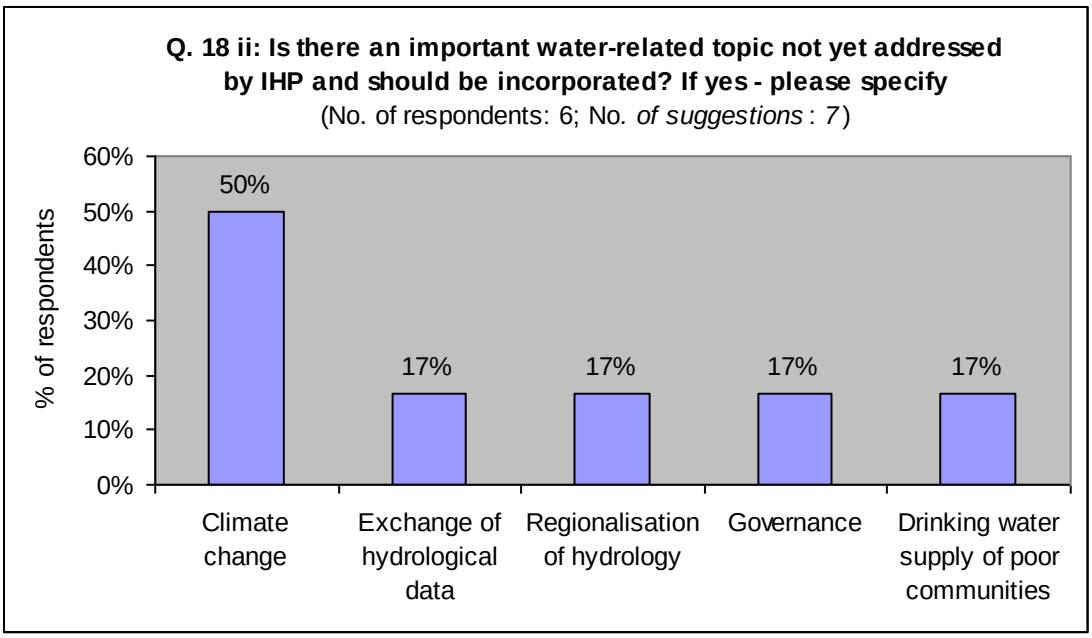
- The question was unfortunately wrongly formulated being an either/or type it was given a yes-no-unsure reply (which is nonsensical). This resulted in many answers not being usable and in a unusual large percentage of 'unsure' replies

- However, a few answers could still be meaningfully interpreted and indicate that a quarter of all respondents believes the scope of IHP is 'too wide', with a minority conversely stating it is 'not wide enough'.



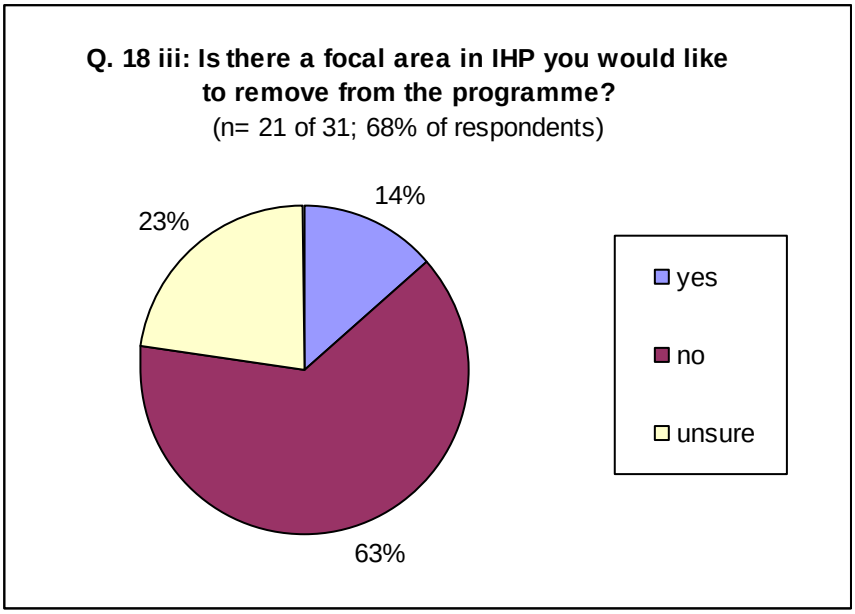
- The important part of this question is the follow-up one that enquires on what exactly is to be added (Q. 18 ii – if yes, please specify)

- A quarter of respondents thought there is an important topic missing (see next question).



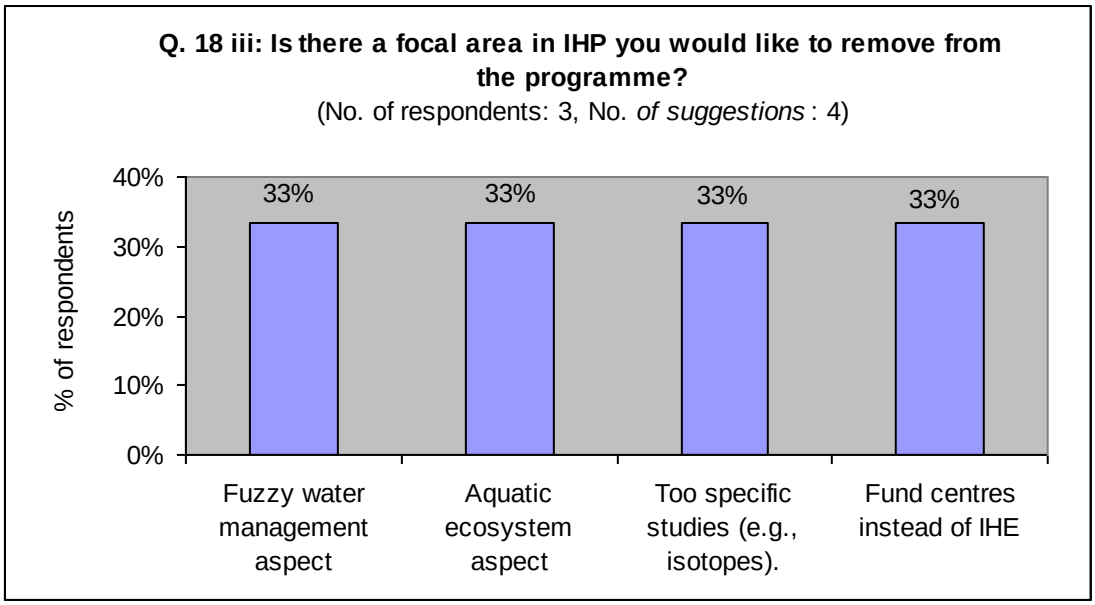
- The merits of the suggestions are debatable and may in some cases reflect a lack of knowledge of the latest IHP phase strategy.

- However, it may be used as an indication of what is regarded as important among water scientists.



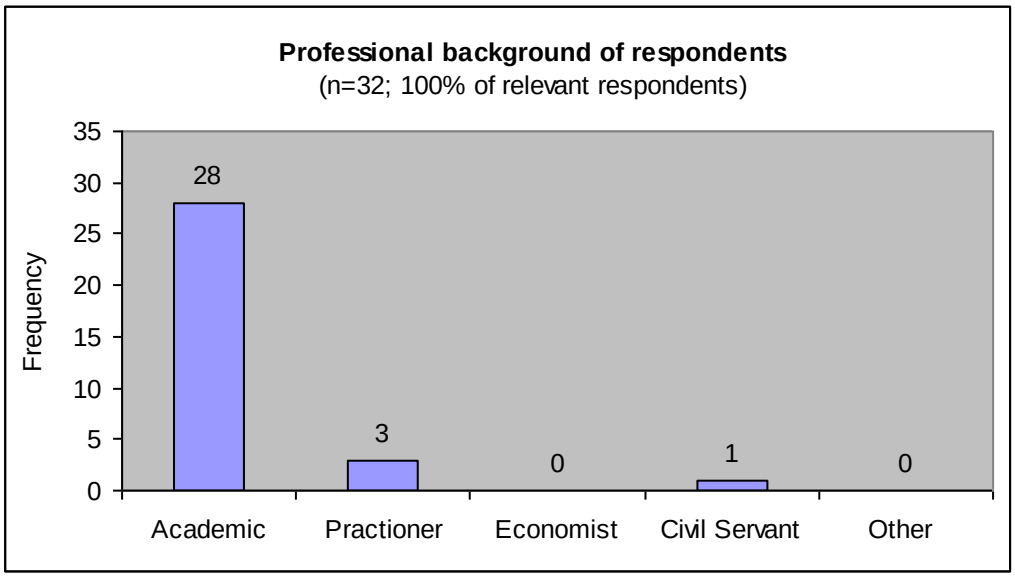
- Not many respondents dared to suggest that any topics should be removed from IHP, in fact only 3 did.

- However, the weight of these suggestions should not be underplayed given that all 3 respondents are senior researchers with 2 having long years of experience with IHP (see Q. 18 iii –'please specify areas that should be removed').



- As pointed out earlier, these suggestions are not based on many respondents, but they do come from senior scientists with long term experience in IHP, which is perhaps necessary for them to feel confident enough to suggest the removal of topics.

- The suggestions speak for themselves and should be considered/discussed.

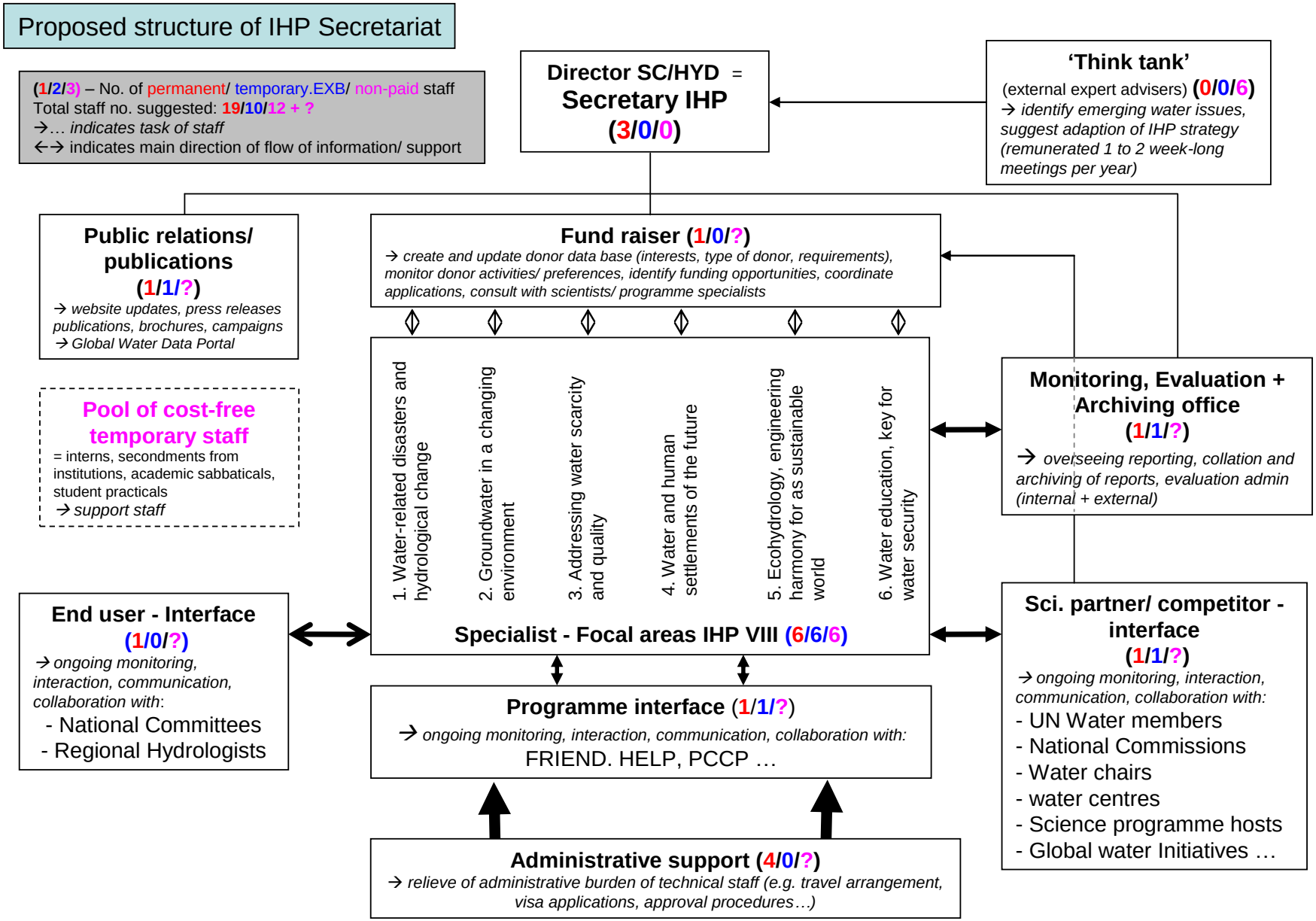


- Although we received a total of 41 replies 9 respondents only answered the first question leaving only 32 questionnaires that could be further evaluated ('relevant respondents'). 88% of these questionnaires were filled out by academic scientists.

- In order to assess the representivity of the selected population better, one would need to know the number of academic scientists in the total work force concerned with IHP.

Appendix IV: Organogram and Motivation for Restructuring the IHP Secretariat

The following graph outlines a possible restructuring of the Secretariat, illustrating and expanding upon suggestions made in the main text.


Proposed structure of IHP Secretariat
(1/2/3) – No. of permanent/ temporary.EXB/ non-paid staff
Total staff no. suggested: 19/10/12 + ?
→… indicates task of staff
←→ indicates main direction of flow of information/ support
Director SC/HYD = Secretary IHP (3/0/0)
'Think tank'
(external expert advisers) (0/0/6)
→ identify emerging water issues, suggest adaption of IHP strategy (remunerated 1 to 2 week-long meetings per year)
Public relations/ publications (1/1/?)
→ website updates, press releases publications, brochures, campaigns
→ Global Water Data Portal
Fund raiser (1/0/?)
→ create and update donor data base (interests, type of donor, requirements), monitor donor activities/ preferences, identify funding opportunities, coordinate applications, consult with scientists/ programme specialists
Pool of cost-free temporary staff
= interns, secondments from institutions, academic sabbaticals, student practicals
→ support staff
1. Water-related disasters and hydrological change
2. Groundwater in a changing environment
3. Addressing water scarcity and quality
4. Water and human settlements of the future
5. Ecohydrology, engineering harmony for as sustainable world
6. Water education, key for water security
Specialist - Focal areas IHP VIII (6/6/6)
Monitoring, Evaluation + Archiving office (1/1/?)
→ overseeing reporting, collation and archiving of reports, evaluation admin (internal + external)
End user - Interface (1/0/?)
→ ongoing monitoring, interaction, communication, collaboration with:
- National Committees
- Regional Hydrologists
Programme interface (1/1/?)
→ ongoing monitoring, interaction, communication, collaboration with:
FRIEND. HELP, PCCP …
Sci. partner/ competitor - interface (1/1/?)
→ ongoing monitoring, interaction, communication, collaboration with:
- UN Water members
- National Commissions
- Water chairs
- water centres
- Science programme hosts
- Global water Initiatives …
Administrative support (4/0/?)
→ relieve of administrative burden of technical staff (e.g. travel arrangement, visa applications, approval procedures…)

Explanation:

Director/ Secretary IHP
The Director of Water Sciences doubles as Secretary of IHP and is assisted by two full time specialists intimately familiar with IHP and UNESCO administrative procedures. Both have the authority to act as Deputy in the absence of the Director.

'Think Tank' – a standing scientific advisory panel
In order to regain its reputation for setting international research agendas, IHP needs to stay informed on latest developments and emerging issues of global significance in the water sector. The IHP Secretary should appoint a standing Task Force of internationally renowned water experts advising the Director on latest developments of strategic importance to IHP and suggesting associated adjustments of the scientific foci for IHP. The panel would act in a 'think tank' like manner and meet once a year, allowing sufficient time to discuss the trends identified among themselves and subsequently with the Secretariat. The Task Force should be in close contact with the UN General Secretary's recently established Scientific Advisory Board as well as the Water Security Task Team of the FAO.

Focal area specialist/ scientists
Instead of thematically fixed divisions that limit the ability of IHP to respond to emerging water issues falling outside or between established topics, we recommend that the staffing structure reflects the Focal Areas of the now 8-year long phases of IHP. By replacing the rigid theme-based sections with more flexible Focal Areas that are directly related to IHP, it is also hoped that a more balanced distribution of staff, funds and capacities between the different Focal areas can be achieved than currently is the case with the sections. These Focal Areas are not replacing current sections but are combined in a single unit in which each scientist has a specific area of responsibility. The main idea here is to put the themes of IHP - as ultimate core delivery of the Water Division - firmly in the centre of attention without interference of sections that may differ in width, depth and focus of topics covered. Thus, instead of 4 sections we only propose one in which 6 Focal area specialists working closely together - and perhaps more closely than before.

Since the main task of staff at the Secretariat is not to conduct original research but to coordinate scientists to do so, the appointment of suitable mature scientists should be considered, who have a demonstrable track record of field research and publications, as well as an established network of working relationships with colleagues in Member States. Based on peer respect and experience, such candidates may be better able to initiate and maintain collaboration than early-career scientists who lack both.

Fund-raiser
Given that core funding is reduced, even if not for ever, there will be increasing pressure on staff to raise extrabudgetary funds. Increased competition from a range of newly established players in global water research reduce opportunities for IHP and make a professional approach to fund-raising imperative. The dedicated fund-raising officer should closely interact with scientific staff in order to spot and utilise funding opportunities arising from their work in their Focal Areas. To this end, an initial task of this officer should be to compile a comprehensive database of donors and funding

agencies of potential relevance to IHP, as well as their fields of interests, funding requirements etc., enabling them to submit attractive and well-targeted project proposals with high success rates. Apart from relieving staff, this would also allow for better coordination of applications within IHP and collaborators outside, avoiding potentially embarrassing duplication and unnecessary competition.

Public relations/ publications office

Given the poor visibility of IHP internationally, even amongst water-focussed organisations and scientists, a dedicated office for raising the public profile of IHP is needed. The current situation of leaving this task to scientists and administrative staff is not working. Apart from continuously updating website information, their duties should also include the administrative streamlining of publications, relieving the scientists involved, drafting of press releases on major achievements, formulating a stricter logo policy and ensuring its implementation, designing and distributing easy-to-read brochures on IHP topics, producing video clips on You Tube, advertising campaigns at major events such as World Water Fora, international water-related conferences etc. This office should also be in charge of the suggested Global Water Data Portal.

Monitoring, Evaluation and Archiving office

Given the reoccurring complaints of evaluators about lack of meaningful quantitative reporting on achievements and failures, as well as the generally poor efficiency and quality of internal monitoring and evaluation procedures, a dedicated unit responsible for systematically archiving reports, achievements, etc. and internal evaluation should be created to systematically collect all data required for evaluations. This unit would also design procedures and protocols that allow all IHP objectives to be benchmarked and assessed. Insistence on and overseeing of the compilation of a final report after completion of each IHP phase is part of their duty.

Administrative support to Focal area scientists

All staff in the Secretariat are to be supported by a dedicated administrative unit attending to bureaucratic procedures such as travel arrangements, approvals, budgetary admin etc.

Scientific partner/ competitor Interface

A major challenge for IHP is to maintain meaningful relations with its large network of collaborators, many of which complain about lack of feedback and interaction. Instead of burdening scientific programme specialist with time-consuming communications (up to 500 emails per day were reported), the task is taken over by this unit in close interaction with the scientists. At the same time this unit is monitoring the activities of competitors in order to identify projects and areas for possible collaboration or adjust IHP to avoid unnecessary overlap.

End-user Interface
Since it is the end-users in the form of Member States and more specifically their IHP National Committees that ultimately give legitimacy to IHP, the way links to these 'clients' are supervised and maintained needs to be improved. Instead of expecting Focal Areas scientists to ensure the maintenance of meaningful interaction with the 168 entities in the network, the task should be given to this dedicated unit.

Programme Interface
Given the importance of Programmes for the public profile and recognisability of IHP, a dedicated office is recommended that monitors all programmes in order to detect possible problems early and draw the attention of management. Currently even some of the permanent programmes at the core of IHP are experiencing problems, often rooted not only in lack of funds but also in a lack of communication, coordination and feedback. This unit is there to avoid this and to maintain close ties with the hosts of Associated Programmes in close collaboration with scientists in the respective Focal Areas.

Pool of unpaid, temporary support staff
In order to supplement staff in a near cost-neutral manner, increased use of highly-motivated interns is recommended. Target groups could include:

- IHE students/ graduates doing internships as part of their curriculum
- Launch a campaign to advertise internships for the best students sourced on a competitive base from Member States, emphasising the attraction of being in a large international organisation
- Mature academics / professors in water sciences doing research projects or sabbaticals at the Secretariat
- Encourage and advertise the opportunity of secondments of practitioners from industry, governmental officials and scientists from research institutes etc.

Staff type and funding
All staff numbers and type of funding are really only very first estimates based on anticipated workload. They need to be refined after implementation. Overall we do not envisage a large increase in staff numbers and costs, but rather a better use of the available resources.

Appendix V: Sample selection of charities and NGOs involved in water-related work

Organisation	Aims and roles
Aquaid	This is actually a commercial company that sells water coolers and dispensers, but it also contributes large sums to charity for water-related schemes, in partnership with Christian Aid and Pump Aid. It has donated over £4.8m.
British Red Cross	Deals with thousands of emergencies each year, alone and in collaboration with emergency services, followed by long-term aid to recover from disease and conflict
Business and Professional Women IFBPW Taskforce Women for Water	Focuses on bridging gaps between principles and practice in sustainable water management and in particular on the role of women in this process. The key question is how gender issues can be incorporated into better water management schemes.
CARE International	Aims to serve individuals and families in the poorest communities in the world. CARE's programmes include Water and Sanitation, and Environment.
Children's Water Fund	A project of Children's Hunger Relief Fund. The aim of this fund is to provide clean, disease-free water systems to families otherwise forced to drink disease-infested water in Africa.
Churches Action on Relief and Development CARD	International work based in Malawi offering disaster relief, e.g. earthquakes in Haiti and Chile, floods in India, and supporting projects in Iraq and throughout Africa.
Climate Care	A British carbon-offset charity using contributions from air passengers and others to promote green energy solutions such as treadle pumps for irrigation and hydropower
Eau Vive	French charity focusing on development in the Sahel rural settlements. Through concrete actions, it aims at creating capacity building in these areas.
FogQuest	An innovative, international, non-governmental, non-profit organisation, which implements and promotes the environmentally appropriate, socially beneficial and economically viable use of fog, rain and dew as sustainable water resources for people in arid regions of developing countries.
Global Nature Fund	A non-profit NGO working for environmental protection. In 1998 GNF launched the global network Living Lakes.
Global Water	An international non-profit, non-governmental organisation. By emphasizing volunteer help, it serves as a vehicle for caring individuals to get involved in the world-wide effort to provide clean drinking water for developing countries.
Green Cross International	Works to prevent conflicts in water-stressed regions. It promotes the need for international mediation to prevent and resolve water related conflicts, the need for an international fund for water, to be used particularly in times of emergency, and the recognition that a basic entitlement to safe water is a universal human right.
Hydraulics without Borders	Aims to make the experience and capability of water specialists available for those who need it but lack financial means to pay for related services.

Hydroaid	An Italian association concerned to train personnel in order to build capacity for sustainable water management in developing and emerging economies.
International Development Enterprises	A UK body designing and developing low-cost systems for irrigation, linking with local manufacturers, e.g. working through Oxfam. Supported by BT, Marks & Spencer and Arup.

Islamic Aid	Helps install wells, tube wells, hand pumps and gives training to communities. Particular current concern for Gaza's people and wrecked infrastructure.
Islamic Relief	Fighting poverty, restoring wells, installing water purification plants & supply systems, e.g. in West Java using cheap, non-melting bamboo pipes. Promotes Islamic microfinance – interest-free loans.
Lifewater International	A non-profit organisation of Christian water resource specialists based in the United States. It has over 150 serving volunteers, including well drillers, geologists, engineers, health care professionals, scientists and businessmen. Volunteers train nationals in developing countries with technical skills to improve their drinking water supplies.
International Federation of Red Cross and Red Crescent Societies	The umbrella organisation for numerous national societies, especially dealing with emergencies in war zones and natural disasters. Red Cross Christian and Red Crescent Muslim work together and now operate as secular organisations, partially funded by governments.
International Rivers	Aim to protect rivers and the rights of dependent communities with an international network of dam-affected people, human rights advocates, environmentalists, *et al.* to stop destructive river projects and promoting better options.
Oxfam	Originally a British charity now operating worldwide, especially focusing on drought, malnutrition, climate change and the world food crisis, with long-term projects, emergency relief and international campaigns.
Pump Aid	Promotes clean water and sanitation, especially through Elephant pumps and toilets, and sustainable use of water for irrigating 'nutrition gardens' for communities.
Samaritan's Purse International	Provides disaster relief worldwide and promotes safe water and sanitation in Africa. Over 4000 water filters installed. Operates 'Turn on the tap' campaign. Based in UK.
Save the Children	Worldwide operation from national branches in UK, US and Canada. Particularly focusing on the needs of children, including long-term water and sanitation projects and emergency relief. Pioneered the Stop Polio Campaign. Promotes education and supports the hand-washing campaign to contain diarrhoea and cholera.
Tearfund	A Christian organisation currently with a 10-year mission to release 50m people from poverty through its network of 100,000 local churches worldwide, irrespective of race or creed. Focuses on helping communities adapt to climate change, providing safe water, sanitation and hygiene education. Operates in over 50 countries.
The Center for Sustainability, Environment, Equity and Partnership	Dedicated to issues in water quality. Devotes its time, tools, techniques and resources to address water issues at local, state, national and international levels.
Water for Children in Africa	A charitable non-profit organisation dedicated to providing safe water for children living in rural villages in Africa.
Water for People	A non-profit, charitable organisation in the United States and

	Canada that helps people in developing countries obtain safe drinking water. It works with local partner organisations to provide financial and technical assistance to communities, depending on their needs.
WaterAid	An independent charity working through partner organisations to help poor people in developing countries achieve sustainable improvements in their quality of life by improved domestic water supply, sanitation and associated hygiene practices.
WaterLife Foundation	A global organisation which helps small, under-served communities in the developing world create and maintain their own safe and sustainable drinking water supplies, leading to better health and higher standards of living.
Water.org formerly WaterPartners International	A non-profit organisation that addresses the water supply and sanitation needs in developing countries, promoting community water projects.
Water Supply and Sanitation Collaborative Council WSSCC	A cross between a professional association and an international NGO, mandated by UN General Assembly but not affiliated to UN, aiming to maintain the momentum of the Decade for Drinking Water Supply & Sanitation.

Source: *Water Sustainability: a global perspective* J A A Jones (2010), with additions.

The projects cited are merely indicative of the type of projects undertaken.

The listing of an organisation in this Table does not imply endorsement or recommendation.

Appendix VI: Terms of Reference

Evaluation of the 7th Phase of the International Hydrological Programme (IHP)
Water Dependencies: Systems under Stress and Societal Responses

Terms of Reference – Part I

INTRODUCTION

BACKGROUND

The International Hydrological Programme (IHP) is the only intergovernmental programme of the UN system devoted to water research, water resources management, and education and capacity building. The programme, tailored to Member States' needs, is implemented in six-year phases.

IHP-VII, the seventh phase of the IHP, comprises the Programme's strategic priorities for the six-year period 2008-2013. The IHP-VII Strategic Plan (IHP/2009/IHP-VII/1) was first developed on the basis of a concept discussion paper, prepared by a task force of external experts established by the IHP Bureau at its 35th session in 2003. The draft Strategic Plan was endorsed by the IHP Council at its 17th Session on 3-7 July 2006. A consolidated version was prepared based on further comments by the IHP Bureau, IHP National Committees, UN Agencies, IGOs, and NGOs. The Strategic Plan was approved by IHP Council members on 1 September 2007. During its 18th Session on 9-13 June 2008 the Intergovernmental Council of IHP confirmed its ample and categorical support to the implementation of the seventh phase of the IHP (IHP-VII), taking note that over 80 Member States had actively participated in the preparation of the strategic plan of IHP-VII.

The IHP-VII Strategic Plan sets out the strategic vision and programmatic framework for IHP's seventh phase of activity of six years (2008-2013). The phase has been titled: 'Water Dependencies: Systems under Stress and Societal Responses'. Its main aim has been to produce policy-oriented results to the benefit of Member States. The core pillars of IHP-VII, structured into themes and focal areas, are the following:

- Promoting leading edge research that provides timely and appropriate policy-relevant advice to Member States;
- Facilitating education and capacity development as a response to the growing needs linked to sustainable development;
- Enhancing governance in water resources management to achieve ecosystem sustainability.

Throughout the implementation of the seventh phase, the Programme has targeted its main audience, UNESCO's Member States, through the IHP National Committees and in collaboration with a myriad of partners including different members of the 'UNESCO Water Family' (e.g. WWAP, Category I and II Institutes,

UNESCO Chairs) other governmental bodies, non-governmental organisations as well as other academic and research institutions.

IHP-VII is expected to be a key contributor to the achievement of the following two expected objectives, as specified in the 34 C/4 Medium-Term Strategy for UNESCO: "UNESCO's leadership for United Nations system activities in the areas of freshwater and the oceans at the global and national levels firmly established, including in United Nations system country programming exercises" and "Global monitoring reports produced periodically for the state of freshwater and the oceans."

The present evaluation was requested by the IHP Bureau, at its 49th session. The timing of the previous evaluation (IHP-VI) did not coincide with the IHP policy cycle, as a result of which the evaluation's findings were not optimally used in the design and implementation of IHP-VII. Consequently, the Bureau stressed the need for better alignment between the current evaluation and the commencement of the next Phase (IHP-VIII). In addition the Bureau suggested that the focus of IHP's evaluation should be on water security challenges and opportunities for the future and less on past experiences. As a result, the Bureau stressed the need for an efficient and forward-looking evaluation.

OVERALL PURPOSE

In line with the expectations of the IHP Bureau and ICC the main purpose of the evaluation is to draw lessons from IHP-VII in order to develop a forward-looking perspective on the strategic role and implementation capacities and modalities of the IHP-VIII programme.

The evaluation will inform UNESCO's Governing Bodies (including the IHP Council), Senior Management of the Organisation and the IHP Secretariat in their decision-making processes on the allocation of financial and human resources, as well as strategic decisions regarding the implementation of the IHP-VIII Phase and achievement of its goals.

OVERALL SCOPE

Drawing on the experience of the IHP-VII Programme, the evaluation will develop a forward-looking perspective on:

1) The role and comparative advantages of the IHP Programme within the framework of the 'UNESCO Water Family'[161] and other UN agencies, taking into account the capacities, results and specific contributions to the global agenda on Water and Development.
2) The organisation of the IHP Secretariat and FO staff, reviewing capacities, resources, their geographical and thematic distribution and reporting lines.

[16] A term used to refer to the different UNESCO entities working on water-related issues: IHP, WWAP, UNESCO-IHE, Category 2 Centers working on water-related issues, UNESCO Chairs on water-related issues. The evaluation will build on the experience (as captured by existing documentation and interviews) of the IHP-VII Programme.

3) The quality of collaboration and coordination of different partners within the 'UNESCO Water Family' working on Water issues including national commissions and IHP committees.
4) Implementation modalities and partnerships, identifying opportunities for improved cooperation and fundraising with external partners.
5) The overall intervention logic of the IHP-VIII programme (2014-2021) taking into account its three strategic axes:
   - Mobilizing international cooperation to improve knowledge and innovation to address water security challenges.
   - Strengthening the science-policy interface to reach water security at local, national, regional and global levels.
   - Developing institutional and human capacities for water security and sustainability.

Addressing the abovementioned scope elements in a satisfactory manner would require quite divergent human capacities in terms of competencies and professional backgrounds. Consequently, the Terms of Reference have been divided into three parts, each part covering specific elements of the scope of the evaluation and with particular requirements in terms of the type of external support needed for its implementation.

PART I

SCOPE (PART I)

Part I of the evaluation will cover the following aspects of the IHP evaluation:
1) The role and comparative advantages of the IHP Programme within the framework of the 'UNESCO Water Family'2 and other UN agencies, taking into account the capacities, results and specific contributions to the global agenda on Water and Development.
2) The quality of collaboration and coordination of different partners within the 'UNESCO Water Family' working on Water issues including national commissions and IHP committees.
3) The organisation of the IHP Secretariat and FO staff, reviewing capacities, resources, their geographical and thematic distribution and reporting lines.

METHODOLOGY (PART I)

Given the short timeframe for the evaluation (October to February 2014), as well as the decision of the IHP Bureau for an efficient and forward looking exercise, part I of the evaluation will adopt the following methodological approach.

A) A desk study, comprising:

1) Mapping of the major activities and projects including financial resources contributing to the achievement of the objectives of IHP-VII. This should include:

a) The activities and projects implemented by UNESCO Headquarters or by National, Regional or Cluster UNESCO Offices, funded through regular Programme and extrabudgetary resources;
b) To the extent not covered by the above a mapping of types of activities and projects implemented by UNESCO (Category I and II) Institutes, Chairs and other associated entities.

2) Mapping of the institutional entities and capacities contributing to IHP-VIII and their respective roles in contributing to the achievement of the objectives of IHP-VIII.
3) Review of evaluative evidence on the relevance and effectiveness of IHP-VII activities and projects e.g. SISTER inputs, project documents, annual progress reports, final narrative reports and external evaluations of extrabudgetary projects, SPO3 evaluation, IHP-VI evaluation, other UNESCO documentation; (annual) reports and evaluations conducted by/on Category I and II Institutes; UNDAF documents; UN studies and research conducted by other (UN) organisations active in the field of Water and Development.
4) Review of documentation on the mandates, roles and activities of UN organisations and other international organisations active in the area of Water and Development.
5) Review of documentation on organisational structure, and human and financial resources.

B) Interviews (telephone / Skype / face to face) with IHP staff, partners in the 'UNESCO Water Family', other stakeholders. A purposive sample of stakeholder interviews will be defined on the basis of lists provided by the IHP Secretariat.

ROLES AND RESPONSIBILITIES (PART I)

The IHP Secretariat is responsible for managing the evaluation and for assuring the quality of the deliverables. IOS will backstop the evaluation by providing specific inputs to the Terms of Reference, selection of the external consultant, the inception report and the final report. Part I of the evaluation will be conducted by (an) external consultant(s). The IHP Bureau will serve as a reference group, commenting on the Terms of Reference and the final report.

KEY QUALIFICATIONS OF THE EXTERNAL CONSULTANT (PART I)

The external (senior) consultant will be selected through an open call. He/she should possess the following qualifications:

- At least 10 years of professional experience including extensive experience in programme and policy evaluation (preferably within the context of developing countries);
- Advanced degree (PhD preferred) in Natural or Water-related Sciences, or;
- Advanced degree in another field but with extensive professional experience in Water-related research and policy initiatives;
- preferred Current or past (long-term) affiliation with an academic institution (fellow, staff, emeritus);
- Excellent oral communication and report writing skills in English.

- The evaluation can be conducted by a senior consultant or a senior and junior consultant.

LOGISTICS (PART I)

The external consultant will be responsible for his/her own logistics: office space, administrative and secretarial support, telecommunications, printing of documentation, etc. The external consultant will also be responsible for the execution of the data collection work plan. IHP will facilitate this process to the extent possible by providing contact information such as email addresses. IHP will also provide the necessary documentation to the consultant for the desk study.
The assignment will include one mission to Paris (UNESCO).

DELIVERABLES AND SCHEDULE (PART I)

The external consultant will be responsible for the following deliverables:

1) Inception note (max. 3 pages), which encompasses an evaluation matrix (connecting different aspects of the evaluation (see scope) to data sources and methods) and a proposal for purposive sampling of respondents within the population of UNESCO entities of the 'UNESCO Water Family';
2) Comprehensive final report (max. 30 pages excluding Annexes), including an executive summary (max. 4 pages), the exact structure of which will be determined in consultation with IHP (and IOS). The report will comprehensively cover the three aspects described under scope, presenting a forward-looking analytical perspective with concrete recommendations for future improvements.

Activity	**Deadline**
Call for proposals	4 October 2013
Selection of consultant	22 October 2013
Inception note + inception meeting virtual	30 November 2013
Mission to Paris interviews	January 2013
Draft report	15 February 2014
Final report	15 March 2014

Appendix VII: Inception Note

INCEPTION NOTE

For the evaluation of IHP phase VII 2008-2013 PART 1

JAA Jones & F Winde

Aims and objectives

The evaluation will take a forward-looking approach, focussing on identifying the strengths of the UNESCO IHP Programme and making recommendations for improvement where relevant. It will constitute a first phase (PART 1) in the overall evaluation procedure and form a basis for subsequent analyses of partnerships, funding and intervention logic (PART 2), to be covered by others.

The methodology will comprise an extensive Desk Study supported by purposive sample interviews of key personnel, both within IHP, UNESCO, the wider UN community involved with water, and outside, to identify synergies, duplications, capacity and best practice as relevant. This will involve *inter alia* a - short summative assessment of the outputs from IHP-VII in terms of the 5 Themes and 22 Focal Areas in the Strategic Plan. This assessment will form a basis from which to conduct the interviews, judge the efficacy of the programme and make recommendations to carry forward to IHP-VIII.

Operational approach

1. Compilation of an abbreviated basic summative assessment of the extent to which IHP-VII has achieved its goals as set out in the Strategic Plan *Water Dependencies: Systems under stress and societal responses*.
2. Based on this assessment, the strengths and weaknesses of IHP will be identified in comparison with the activities of other UN-agencies and other members of the UNESCO water family.
3. The results of this Desk Study (2) will form the bases for purposive sample interviews of key personnel within the IHP, the wider UNESCO, selected partners within the UN Organisation, and external players involved in water issues, including NGOs and professional bodies, such as IAHS.
4. Assess collaboration & administrative efficiency within UNESCO Water Family.
5. Recommend improvements to:

(a) sharpen the profile of IHP and increase its competiveness vis-à-vis similar activities in other UN agencies and outside, and

(b) improve internal processes to maximise administrative efficiency and achieve task-adequate structures and resources.

Timetable

December 2013	Conduct Desk Study, consult Director and colleagues, identify interviewees
January 2014	Conduct interviews, visit IHP HQ, draft report
February 2014	Submit Draft Report 15th
March 2014	Edit and submit Final Report 15th incorporating feedback from UNESCO IHP

Evaluation Matrix

Aspects to be evaluated	Associated activity	Target group	Data sources	Method of evaluation
1. Significance of IHP within UN-water research *a **Role** of IHP within UNESCO water family and other UN-activities in achieving global water goals* *b **Advantages** of IHP compared to other **UN-agencies*** *c **Advantages** of IHP compared to other members of "**UNESCO Water Family**"* * *d **Advantages** of IHP compared to other external Global Water Initiatives*	a Mapping of major activities + projects relevant to IHP-VII	UN-Agencies concerned with water (31 in WWAP): - FAO - WHO - WMO *et alia*	Reports relating to UN-agencies *Key informants*	Scan for information Review/ In-depth review *Semi-structured interviews* Compile synoptic summary
	b Mapping of major activities + projects of IHP-VII	UNESCO Water Family: - IHP Intergovernmental Council - IHP Bureau - IHP Secretariat HQ and Field Offices - National IHP Committees (168) - Regional and cluster offices (9) - Category 2 Water Centres (18) - UNESCO water-related Chairs (31) - World Water Assessment Programme - UNESCO-IHE	Reports relating to UNESCO water family *Key informants:* *→ selection criteria based on:* *1. Role & responsibility for delivering outcomes* *2. At least 2 personnel from each to maintain anonymity* *3. Geographical representativity*	Scan for information Review/ In-depth review *Semi-structured interviews* Compile synoptic summary
	c Mapping of institutional entities + projects contributing to IHP-VIII	To be determined from pertinent reports	Draft Strategic Plan for IHP-VIII	Scan + Review Extract pertinent information Compile synoptic summary
	d Defining role of mapped entities in IHP-VIII	To be determined from pertinent reports	Relevant documents *Involved staff*	Review *Interviews (if necessary)*
	e Review of existing evaluations on the relevance and effectiveness of IHP-VII	UNESCO Water Family: - IHP Intergovernmental Council - IHP Bureau - IHP Secretariat HQ and Field Offices - National IHP Committees - Regional and cluster offices - Category 2 Water Centres - UNESCO Chairs on water-related issues - World Water Assessment Programme - UNESCO-IHE	SISTER inputs Project documents Annual progress reports Final narrative reports External evaluations of extra-budgetary projects SPO3 evaluation IHP-VI evaluation Other documents, reports & evaluations UNDAF documents UN studies Other UN water research *Key informants*	Scan Scan Scan Review Scan In-depth review Scan Scan/review Scan Scan Extract pertinent information Compile synoptic summary *Semi-structured interviews*

* the term "UNESCO Water Family" is used here as defined in the Terms of Reference for Part 1 of the Evaluation of the 7th Phase of the International Hydrological Programme IHP and in Bureau documents.

Evaluation Matrix - continued

Aspects to be evaluated	Associated activity	Target group	Data sources	Method of evaluation
2. Quality of <u>collaboration</u> and <u>coordination</u> within UNESCO Water Family	(a) Define parameters for assessing 'collaboration' and 'coordination'	UNESCO Water Family: - IHP Intergovernmental Council - IHP Bureau - IHP Secretariat (HQ and Field Offices) - National IHP Committees - Regional and cluster offices - Category 2 Water Centres - UNESCO Chairs on water-related issues - World Water Assessment Programme - UNESCO-IHE	IHP-Bureau/ IHP Secretariat/ Internal Oversight Service (Evaluation Section) general literature	ask question review
	(b) Retrieve relevant information		*Key informants* involved staff managers, scientists, *etc.* of members of UNESCO Water Family	*Semi-structured interviews* with identified key informants: e.g. Director IHP Secretariat Compile synoptic summary
3. Administrative efficiency of IHP Secretariat and Field Office staff	(a) Map organisation of IHP secretariat (b) Map organisation of Field Offices staff (c) List capacities of IHP Secretariat/ Field Offices (qualifications etc.) (d) List resources (budgets, equipment, salaries…) (e) Map geographical distribution (f) List research themes (g) Map reporting lines	- IHP Secretariat - IHP Field Offices	Relevant reports *Key informants*	Scan and review *Semi-structured interviews* with identified key informants on all levels of hierarchy Compile synoptic summary

Appendix VIII: Composition of the Bureau of Intergovernmental Council (IGC) of IHP (1975 to 2014)

Member States that served on the Bureau at least once between 1975 and 2014

		Executive Board Grouping	1975-76	1977-78	1979-80	1981-83	1984-85	1986-87	1988-89	1990-91	1992-95	1995-96	1996-98	1998-2000	2000-2002	2002-2004	2004-2006	2006-2008	2008-2010	2010-2012	2012-2014				
	Date joined	**No. of years**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**1**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**No. of Bureau membership**	**No. of chairs**	**No. of years**	**% of 39 years**
Brazil	11/4/1946	III					1	1		1	1							1	1			6	1	12	31%
Argentina	9/15/1948	III				1			1				1			1	1					5		10	26%
China	11/4/1946	IV			1	1					1						1					4		9	23%
Egypt	11/4/1946	Vb		1								1	1	1								4	1	8	21%
Germany	7/11/1951	I				1											1		1		1	4	1	8	21%
Mexico	11/4/1946	III	1	1																1	1	4	1	8	21%
Netherlands	1/1/1947	I						1						1	1	1						4	1	8	21%
Nigeria	11/14/1960	Va							1							1	1	1				4	1	8	21%
Tunisia	11/8/1956	Vb					1	1		1	1											4	1	8	21%
Japan	7/2/1951	IV								1				1	1				1			4	1	7	18%
Russian Federation	4/21/1954	II	1								1	1										3	1	7	18%
Ghana	4/11/1958	Va	1		1	1																3	1	6	15%
Hungary (3)	9/14/1948	II				1	1									1						3	1	6	15%
Poland	11/6/1946	II						1						1	1							3		6	15%
Sudan	11/26/1956	Vb																	1	1	1	3	1	6	15%
Thailand	1/1/1949	IV					1	1	1													3		6	15%
Canada	11/4/1946	I	1						1	1												3	2	5	13%
Kenya	4/7/1964	Va								1										1	1	3		5	13%
Benin	10/18/1960	Va												1	1							2		4	10%
Botswana	1/16/1980	Va										1	1									2	1	4	10%
Croatia	6/1/1992	II															1	1				2	1	4	10%

Iran (Islamic Republic of)	9/6/1948	IV		1												1						2		4	10%
Malaysia	6/16/1958	IV	1															1				2		4	10%
Republic of Korea	6/14/1950	IV																		1	1	2	1	4	10%
Serbia (9)	12/20/2000	II																		1	1	2		4	10%
United States of America	10/1/2003	I			1															1		2		4	10%
Angola	3/11/1977	Va									1											1		3	8%
Czech Republic	2/22/1993	II		1						1												2		3	8%
Israel	9/16/1949	I									1											1		3	8%
Australia	11/4/1946	IV		1																		1		2	5%
Bulgaria	5/17/1956	II			1																	1		2	5%
Chile	7/7/1953	III										1										1		2	5%
Colombia	10/31/1947	III													1							1		2	5%
Cuba	8/29/1947	III			1																	1		2	5%
Finland	10/10/1956	I										1										1		2	5%
India	11/4/1946	IV											1									1		2	5%
Indonesia	5/27/1950	IV										1										1		2	5%
Iraq	10/21/1948	Vb							1													1		2	5%
Jordan	6/14/1950	Vb															1					1		2	5%
Kuwait	11/18/1960	Vb																1				1		2	5%
Morocco	11/7/1956	Vb													1							1		2	5%
Norway	11/4/1946	I					1															1		2	5%
Panama	1/10/1950	III												1								1		2	5%
Romania	7/27/1956	II											1									1		2	5%
Sao Tome and Principe	1/22/1980	Va					1															1		2	5%
Saudi Arabia	11/4/1946	Vb														1						1		2	5%
Slovakia	2/9/1993	II																	1			1		2	5%
South Africa (10)	12/12/1994	Va																	1			1		2	5%
Switzerland	1/28/1949	I											1									1		2	5%

Syrian Arab Republic	11/16/1946	Vb				1																	1		2	5%
The former Yugoslav Republic of Macedonia	6/28/1993	II							1														1		2	5%
Uganda	11/9/1962	Va						1															1		2	5%
United Kingdom	7/1/1997	I																1					1		2	5%

Analysis:

- Of the 195 UNESCO Member States (204 including associated States) **53** served at least once at the Bureau of the Intergovernmental Council IGC of IHP between 1975 and 2014 (40 years) for a period of 2 to 3 years.
- Over two thirds (68%) of the 168 Member States never served at the Bureau. (with 5 or 6 Members of the Bureau and 19 periods at least 95 countries (56%) could have been Bureau members if each country had only served once)
- Several countries served more than once (2 to 6 times).
- 10 countries served between 4 to 6 periods.
- 6 periods: covering a total of 12 years Brazil served the most frequent and longest at the Bureau followed by Argentina 5 times
- 8 countries serving 4 times for a total of 7 to 8 years
- 17 countries served 2 to 3 times
- Another 26 countries served once
- 15 countries provided the Chair of the Bureau once and 1 country (Canada) twice. Of the countries serving at least once at the Bureau are:
    - 16 from Africa (Regions Va; Vb)
    - 10 from E-Europe (Region II)
    - 9 from Asia and SE Pacific region (Region IV)
    - 9 from W-Europe, Israel and North America (Region I)
    - 7 from Latin America/ Caribbean (LAC, Region III)

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Part II of the evaluation report

Evaluation of the IHP Programme VII, Part 2

A Strategic Approach

Abel Mejia

ABSTRACT

The implementation of the IHP Programme VII was successful overall, and it left a rich balance of lessons to further enhance IHP's impact in the years to come. In turn, the 8th IHP Programme offers a strategic opportunity to focus on water security issues to continue serving the international water community while fulfilling UNESCO's unique mandate in water science and capacity building in member countries. This report is about partnerships and funding of IHP and has three main recommendations: build effective global partnerships through the UNESCO Water Family network; create a multidonor trust fund to attract partners and donors; and, restructure the Secretariat to respond with flexibility to emerging demands and be accountable for results.

Preamble

Water is at the core of economic growth and social development. But water is under unprecedented pressures by population and economic growth, along with increased climate variability, which will further exacerbate current water stress. Therefore, most global projections of the balance between supply and demand for water indicate that the world will not be able to meet the major development challenges of the 21st century unless countries improve management of their water resources and water services to satisfy increasing demands of people and economic activities, as well as from the environment.

The International Hydrological Programme (IHP) of UNESCO is posed to continue playing a key role in addressing these multidimensional development challenges at country, regional and global levels by assisting decision makers in improving water resources management and services.

The evaluation of the IHP VII Programme has been conducted in two parts over a period of about four months, from December 2013 to March 2014. For Part 1, two external evaluators received a large number of documents and circulated a survey across regional offices and Chairs. The number of responses to the survey was low and the consultants concluded that the documentation received was old and of limited use for the evaluation. According to the Evaluation Report IHP-VII (2008-2013) of March 2014[17], the Programme was relatively well implemented, in spite of limited means and some obstacles. The evaluation concluded that unless some drastic changes are implemented, IHP will continue losing its global importance.

This report corresponds to Part 2 of the evaluation. A different evaluator conducted it over a period of about 10 days focusing on two specific issues of the IHP VII Programme: partnerships and fund raising. It builds on the findings and recommendations of the Part 1 evaluation report, and information about the institutional setting of IHP and its financing over the past years. This report takes into account inputs received from the Secretariat during an informal discussion held at UNESCO's headquarters in Paris on April 15, 2014. Annexes 1 and 2 present the terms of reference for Part 2, and the main sources of information consulted.

[17] Draft Part 1 Evaluation by Emeritus Professor J.A.A. Jones, and Professor Dr. habil. Frank Winde.

Introduction

The objective of the IHP VII Programme was to promote leading edge research to water policy and implementation; facilitate education and capacity building to support sustainable development; and enhance governance in water resources management to achieve ecosystem sustainability.

Over the years, the UNESCO Water Family concept has been loosely used to describe the network of professionals, centers, and programmes that have been created under the aegis of IHP to achieve its objectives. It includes a Secretariat in UNESCO's headquarters in Paris, regional staff, and different components of IHP, namely the IHP National Committees, and the governing bodies of IHP represented by the Bureau and the Council. In addition, it comprises UNESCO Centers (Category I and II), a number of specific and cross cutting Water Programmes, and Thematic Water Chairs (Table 1).

Table 1
Main Components of UNESCO's Water Family

IHP Secretariat: Director, 8 professional staff, 7 assistants, 20 temporary professionals and about 10 interns 6 regional hydrologists
IHP Council: 36 UNESCO Member States
IHP Bureau: Chair + 5 Vice Chairs
IHP National Committees: in 168 countries
Water Chairs: 33 and 2 under establishment
UNESCO – IHE: Category I
Water Centers Category II: 18 established and 14 in process
Water Programmes: 12 + WWAP

The UNESCO Water Family comprises a unique and respected network which can be seen as the most valuable asset that IHP offers to countries and the

global water community (Figure 1). The added value of the UNESCO Water Family could be summarized as follows:

- IHP is by and large the only intergovernmental programme in the UN system directed to support research, management, education and capacity building in water.

- IHP is unique from different perspectives because:
    - It offers direct access to water institutions and decision makers in countries.
    - It is the place to go in less developed countries (LDC) when they seek advice and support in water science and capacity building to formulate policies and programmes.
    - It plays a key coordinating role across UN agencies and other partners.

- IHP is the most comprehensive network with global reach, while keeping country and regional focus at different scales:
    - About 4000 water professionals directly associated.
    - 32 water centers dedicated to specific water issues.
    - Host of relevant programmes addressing key and cross cutting water issues responding to demands from countries.

- WWAP manages for UN Water the only global and systematic water programme to discuss water development issues and assess water policy implementation on a regular basis (with inputs from IHP).

- UNESCO – IHE is the best and most successful training programme for water practitioners and scientists of the developing world.

- IHP enjoys strong name recognition and a valuable goodwill as reflected in the high demand for its brand name associated to Centers, Chairs, National Committees and representation in different governing bodies.

- IHP programmes and activities are associated to an estimated budget of about US$80 million/year dedicated to support key water priorities at all scales, from country to global, and to key and cross cutting water issues in the science and policy interphase. About US$6.3 million/year are core budget, and about US$74 million/year roughly account for different

components of UNESCO's Water Family, as well as about US$6 million/year of extra budgetary resources under the Secretariat in Paris (Figure 2).

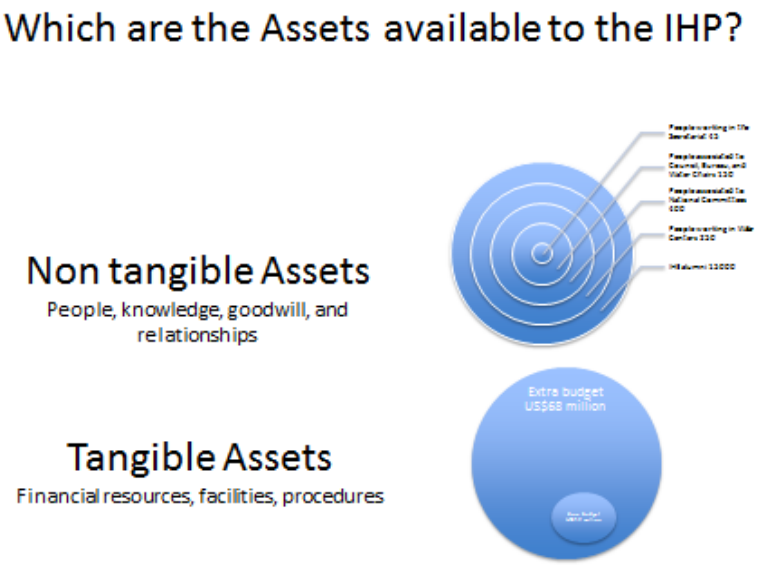


Figure 1
UNESCO Water Family

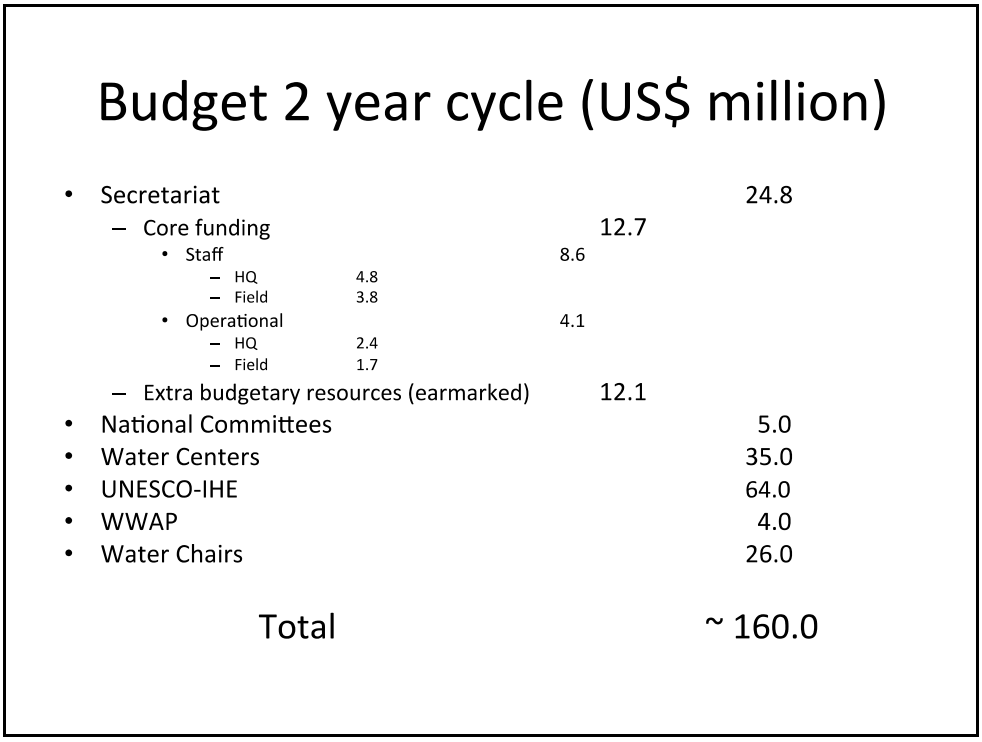


Figure 2
UNESCO's Water Family
Estimated Budget in US$ million

Analysis

In response to the terms of reference and following guidance received, this report aims at providing a strategic view about how the IHP could address partnerships and funding issues as it moves to the formulation of the 8th Programme.

The analysis is qualitative and consequently a SWOT methodology[18] was chosen to screen the findings of Part 1 of the Evaluation of the 7th IHP Programme. The expectation is that this report will facilitate high-level discussions about the threats and opportunities IHP is currently facing. At the same time, the report outlines a few recommendations that could be converted into actionable strategies by the Secretariat to face perceived weaknesses, while building on the core strengths of the Programme.

[18] Methodology used to evaluate strengths, weaknesses, opportunities, and threats.

The SWOT analysis identified the main strengths of IHP associated to the networking power of connecting a unique and large group of water decision makers, practitioners and scientists. It is not about rebuilding the archaic mosaic of the past, but taking the different components of UNESCO's Water Family to construct a highly functional network that connects water and development professionals that are looking for water knowledge, science and capacities to formulate and implement policy and management solutions to address water issues at country, regional and global levels.

The analysis identified multiple weaknesses and threats facing IHP but unfortunately many of them are largely beyond the control and resources available to the Secretariat. The main messages emerging from the SWOT analysis are shown in Figure 3, accompanied by headlines for the supporting rationale.

Strengths

IHP offers a unique and valuable network of water decision makers in governments of 168 countries embodied in the water family concept.

Over the years IHP has developed a large and seemly sound system of programmes and institutions to support policy decision making in countries and assessments that help shape the global debate in water.

UNESCO – IHE represents the best and strongest capacity building system for practitioners and scientist for developing countries.

UNESCO enjoys strong name recognition in government and in science in the water community, with a global reach (goodwill).

Figure 3
Results of SWOT analysis

Weaknesses

IHP operates under a fairly complex authorizing environment, with an opaque separation of policy and management lines of decision-making. It leads to excessive internal litigation and reporting to satisfy multiple internal constituencies.

IHP suffers from an intrinsic weakness of National Committees and focal points in most countries for reasons like the following:

- National Committees are subject to frequent change of government representatives affecting priority setting and continuity of agreed actions.
- The lack of a dedicated budget for National Committees and the underestimation of the costs of coordination impede adequate time dedication and resources for implementation.
- Most members of National Committees have a day-to-day job, which makes it difficult to sustain a focused attention on IHP activities.

The organization of UNESCO, IHP, and the Secretariat is too rigid impeding a flexible response to demands from countries and potential sponsors and partners. It leads to an apparent out of sync with decision makers in countries.

There is a perception of diminishing quality of products and of the policy-science link because of a shrinking core budget which also affects the mobilization of extra budgetary sources needed to leverage many of the programmes under UNESCO's Water Family.

As a consequence, it seems that the implicit strategy of the IHP is to keep the system running while sacrificing quality and relevance.

Opportunities

Should IHP be re-formed to the broader strategic concept of UNESCO's Water Family, which is ideally positioned to assist countries and the global water community to face the water challenges of the 21st century?

The water security focus chosen for the 8th Programme responds to climate variability and water for all, which will be the overarching issues shaping the water policy debate and development programmes for the next 10 years.

The creation of a multidonor trust fund can help to take full advantage of the network-knowledge link to attract partners and donors seeking to gain leverage and results in water policy and programmes.

Building on the assets of the IHP programme, opportunities could be actionable by:

- Converting "science" into policy relevant knowledge that is made available in real-time to decision makers in countries.
- Exploiting the fullest potential of the knowledge-network power link.
- Connecting in real-time with decision makers in countries.
- Reorganizing the Secretariat to be flexible and accountable for results.

Threats

Part 1 of the Evaluation identified multiple issues and threats affecting IHP. It seems that some of the issues could be addressed within the current mandate of the Secretariat; others are of broader scope belonging to the organization of UNESCO as a whole. Setting priorities is crucial for building a strategy for the 8th Programme, for which a matrix has been used to identify those issues that are under the control of the IHP Council and the Secretariat (see final Annex).

Main threats identified through the SWOT analysis are summarized as follows:

- IHP is losing relevance, and its credibility is diminishing, not growing. The quality and impact of IHP is decreasing. One example cited is the case of most countries in the Sub Sahara region of Africa.
- UNESCO does not have an effective human resources policy to attract and retain the best people. Staff is overworked and morale is suffering in spite of strong dedication of staff to programmes and activities and long hours in the office and in the field.
- As a consequence, there is a sense that IHP is missing the train vis-à-vis "competitors" and losing the scientific luster of the past.

Recommendation

Part 1 of the evaluation of IHP VII Programme proposes a useful list of recommendations reflecting the perceived performance of the Programme, the limited number of responses to the survey circulated by the evaluators, the review of about 200 documents submitted by the Secretariat, and observations from selected interviews. These recommendations are grouped into six strategic categories, as follows:

1. Improving links and motivation within the UNESCO Water Family global network.
2. Improving operation of the Secretariat.
3. Raising the profile of IHP.
4. Dealing with reduced core funding.
5. More efficient collaboration within UN-Water and beyond.
6. Design and operation of Phases.

In general, Part 2 of the evaluation agrees with these recommendations while considering the need of an additional exercise of prioritization to assess their impact on the performance of IHP and the scope of control of the Secretariat to implement them. The final Annex presents a simple matrix that could be helpful to clarify priorities and seek consensus across different governing bodies intervening on IHP's strategy and Programme implementation.

As a complement, this report suggests a few general observations for the 8th IHP Programme, and three actionable strategies to enhance the partnership power of IHP, address funding issues to leverage the largest and most

complete water programme within the UN and globally, and improve performance and accountability to implement the Programme.

General observations

- IHP is more about knowledge management across the network linking policy and science and less about promoting leading edge research, which belongs to academia and scientific institutions.
- IHP should maximize the brand power of IHP by building on goodwill accumulated over the last 25 years. Therefore, it should take full advantage of the IHP, i.e. the benefits of being associated to a prestigious and successful water institutional network at global level.
- IHP should use the power of the network to gain access to and influence water policy globally and locally as a strong leverage factor for which UN members, International Financial Institutions, Bilateral organizations, and other Donors would be interested to be part of.
- IHP should make better use of the power of incentives to qualify water centers of excellence, and be proactive to fill gaps of science and knowledge.

Convert the UNESCO water family into a global network

- Make the UNESCO Water Family the place to go and connect with a unique network of water practitioners, decision makers and scientist.
- Make the UNESCO Water Family the connection of excellence for water science and policy.
- Develop an affiliation plan to the network considering different categories like members of National Committees, Secretariat, Water Chair, Water Center, Alumnus/Alumni, etc.
- Invest in keeping updated a roster of water professionals as part of the network.
- Develop a system of continuous communication within and outside the UWF.
- Use existing social networks like LinkedIn and Facebook, or others that could be tailored to the needs of a global water family.
- Introduce an affiliation fee to the network which will allow raising operational funding and further development of the marketing power of the network.

Create a multidonor trust fund

- Define the legal viability of a multidonor trust fund (MDTF) within UNESCO. Seek approval from governing bodies of IHP.
- Identify priorities and accountability criteria of potential contributors: bilateral donors (Netherlands, Scandinavian countries, Europe, Spain, Japan, etc.), development foundations (Gates, Google), private companies.
- Prepare a strategy and prospectus for a MDTF for internal discussion.
- Propose a governance structure, bylaws and procedures.
- Develop a funding strategy, including seed resources from UNESCO itself, and explore potential funding sponsors and opportunities at the Stockholm International Water Week (SIWI) in September 2014.
- Officially launch the MDTF at the 7th World Water Forum in Korea in April 2015.

Build a flexible organization

- Utilize a matrix structure as the organizing principle of the Secretariat to allocate people and financial resources to discrete and well-defined projects linked to a results framework.
- Convert activities into a project concept with defined objectives, targets, time frame, budget, and time allocation of people.
- Redefine the lines of accountability of the existing organizational structure in UNESCO using the more flexible concept of project teams composed of Lead/Principal, Senior, Junior, Assistant Programme Specialists, and Consultants, Interns, and Sabbatical Professors.
- Realign internal human resources, incentives and reward systems to performance and the delivery of projects.

Conclusion

The evaluation of the IHP VII Programme (part 1) concluded that the programme was relatively well implemented in spite of obstacles and limited resources. As IHP is preparing the 8th Programme, it should consider from the outset a better definition of a results framework for all themes, activities and projects to be included as deliverables. In doing so, it would be helpful to contemplate the preparation of a logic model that includes causal links, key assumptions, and indicators to monitor activity implementation, output delivery, and the achievement of outcomes, and ultimately provide a basis for assessing the impact of the new Programme.

Annexes

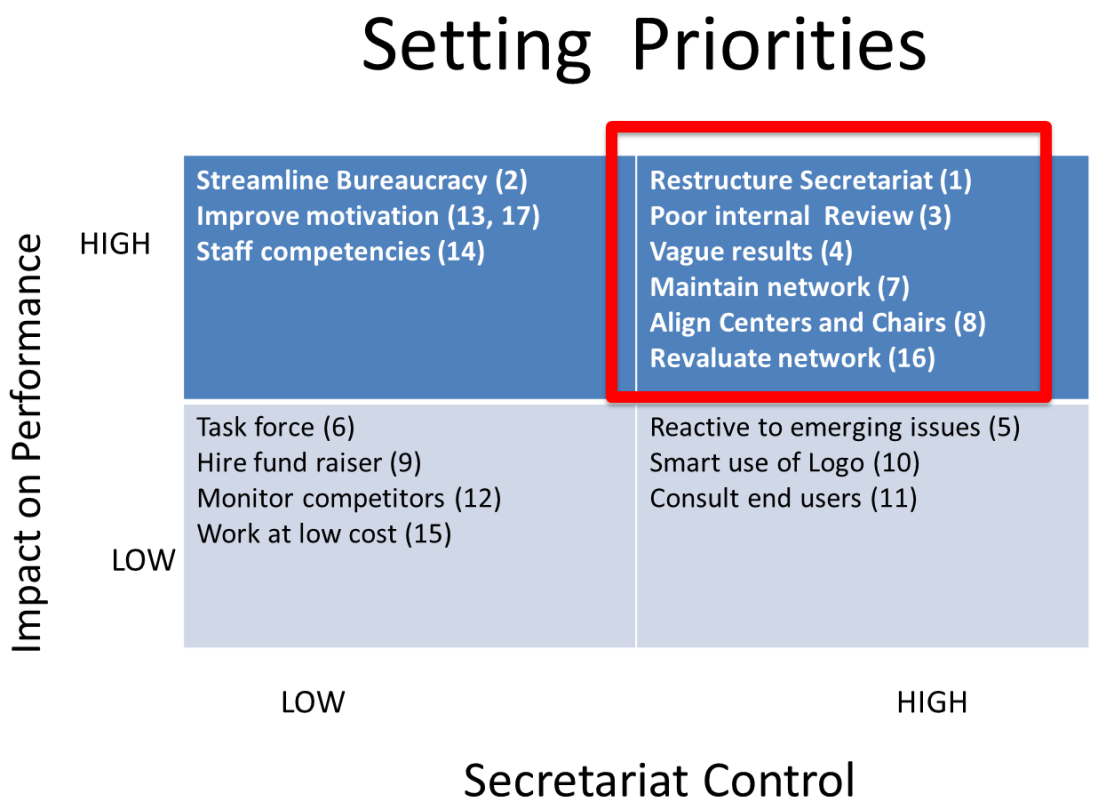
Terms of Reference for Evaluation Part 2 of IHP VII Programme (summary version)

a. Assist with the internal evaluation of the IHP 7th Programme of UNESCO in two dimensions
    a. Analysis of implementation modalities and partnerships of IHP during the 7th phase
    b. Identification of opportunities for improved cooperation and fund raising with external partners
b. Draft a succinct report with synthetic findings and recommendations to improve IHP's:
    a. Partnerships
    b. Fund raising strategy and practices

Information reviewed

a. Draft Evaluation Report IHP 7th (2008-2013)
b. 50th session of IHP Bureau (5 March 2014)
c. 19th session of IHP Bureau (8 June 2010)
d. Email of 25 March 2014 about financial information requested by the IHP Bureau
e. IHP information in UNESCO webpage
f. Information about IHP available in the web

Links between Part 1 and Part 2



Terms of Reference (part I and II)

Evaluation of the 7th Phase of the International Hydrological Programme (IHP)
Water Dependencies: Systems under Stress and Societal Responses

Terms of Reference

INTRODUCTION

BACKGROUND

The International Hydrological Programme (IHP) is the only intergovernmental programme of the UN system devoted to water research, water resources management, and education and capacity building. The programme, tailored to Member States' needs, is implemented in six-year phases.

IHP-VII, the seventh phase of the IHP, comprises the Programme's strategic priorities for the six-year period 2008-2013. The IHP-VII Strategic Plan (IHP/2009/IHP-VII/1) was first developed on the basis of a concept discussion paper, prepared by a task force of external experts established by the IHP Bureau at its 35th session in 2003. The draft Strategic Plan was endorsed by the IHP Council at its 17th Session on 3-7 July 2006. A consolidated version was prepared based on further comments by the IHP Bureau, IHP National Committees, UN Agencies, IGOs, and NGOs. The Strategic Plan was approved by IHP Council members on 1 September 2007. During its 18th Session on 9-13 June 2008 the Intergovernmental Council of IHP confirmed its ample and categorical support to the implementation of the seventh phase of the IHP (IHP-VII), taking note that over 80 Member States had actively participated in the preparation of the strategic plan of IHP-VII.

The IHP-VII Strategic Plan sets out the strategic vision and programmatic framework for IHP's seventh phase of activity of six years (2008-2013). The phase has been titled: 'Water Dependencies: Systems under Stress and Societal Responses'. Its main aim has been to produce policy-oriented results to the benefit of Member States. The core pillars of IHP-VII, structured into themes and focal areas, are the following:

- Promoting leading edge research that provides timely and appropriate policy-relevant advice to Member States;
- Facilitating education and capacity development as a response to the growing needs linked to sustainable development;
- Enhancing governance in water resources management to achieve ecosystem sustainability.

Throughout the implementation of the seventh phase, the Programme has targeted its main audience, UNESCO's Member States, through the IHP National Committees and in collaboration with a myriad of partners including different members of the 'UNESCO Water Family' (e.g. WWAP, Category I and II Institutes, UNESCO Chairs) other governmental bodies, non-governmental organizations as well as (other) academic and research institutions.

IHP-VII is expected to be a key contributor to the achievement of the following two expected objectives, as specified in the 34 C/4 Medium-Term Strategy for UNESCO: "UNESCO's leadership for United Nations system activities in the areas of freshwater and the oceans at the global and national levels firmly

established, including in United Nations system country programming exercises" and "Global monitoring reports produced periodically for the state of freshwater and the oceans."

The present evaluation was requested by the IHP Bureau, at its 49th session. The timing of the previous evaluation (IHP-VI) did not coincide with the IHP policy cycle, as a result of which the evaluation's findings were not optimally used in the design and implementation of IHP-VII. Consequently, the Bureau stressed the need for better alignment between the current evaluation and the commencement of the next Phase (IHP-VIII). In addition the Bureau suggested that the focus of IHP's evaluation should be on water security challenges and opportunities for the future and less on past experiences. As a result, the Bureau stressed the need for an efficient and forward-looking evaluation.

OVERALL PURPOSE

In line with the expectations of the IHP Bureau and ICC the main purpose of the evaluation is to draw lessons from IHP-VII in order to develop a forward-looking perspective on the strategic role and implementation capacities and modalities of the IHP-VIII programme.

The evaluation will inform UNESCO's Governing Bodies (including the IHP Council), Senior Management of the Organization and the IHP Secretariat in their decision-making processes on the allocation of financial and human resources, as well as strategic decisions regarding the implementation of the IHP-VIII Phase and achievement of its goals.

OVERALL SCOPE

Drawing on the experience of the IHP-VII Programme, the evaluation will develop a forward-looking perspective on:

i. The role and comparative advantages of the IHP Programme within the framework of the 'UNESCO Water Family'[19] and other UN agencies, taking into account the capacities, results and specific contributions to the global agenda on Water and Development.
ii. The organization of the IHP Secretariat and FO staff, reviewing capacities, resources, their geographical and thematic distribution and reporting lines.
iii. The quality of collaboration and coordination of different partners within the 'UNESCO Water Family' working on Water issues including national commissions and IHP committees.
iv. Implementation modalities and partnerships, identifying opportunities for improved cooperation and fundraising with external partners.
v. The overall intervention logic of the IHP-VIII programme (2014-2021) taking into account its three strategic axes:
    - Mobilizing international cooperation to improve knowledge and innovation to address water security challenges.
    - Strengthening the science-policy interface to reach water security at local, national, regional and global levels.
    - Developing institutional and human capacities for water security and sustainability.

The evaluation will build on the experience (as captured by existing documentation and interviews) of the IHP-VII programme.

[19] A term used to refer to the different UNESCO entities working on water-related issues: IHP, WWAP, UNESCO-IHE, Category 2 Centers working on water-related issues, UNESCO Chairs on water-related issues.

Addressing the abovementioned scope elements in a satisfactory manner would require quite divergent human capacities in terms of competencies and professional backgrounds. Consequently, the Terms of Reference have been divided into three parts, each part covering specific elements of the scope of the evaluation and with particular requirements in terms of the type of external support needed for its implementation.

PART I

SCOPE (PART I)

Part I of the evaluation will cover the following aspects of the IHP evaluation:

i. The role and comparative advantages of the IHP Programme within the framework of the 'UNESCO Water Family'[20] and other UN agencies, taking into account the capacities, results and specific contributions to the global agenda on Water and Development.
ii. The quality of collaboration and coordination of different partners within the 'UNESCO Water Family' working on Water issues including national commissions and IHP committees.
iii. The organization of the IHP Secretariat and FO staff, reviewing capacities, resources, their geographical and thematic distribution and reporting lines.

METHODOLOGY (PART I)

Given the short timeframe for the evaluation (October to February 2014), as well as the decision of the IHP Bureau for an efficient and forward looking exercise, part I of the evaluation will adopt the following methodological approach.

A. A desk study, comprising:
    i. Mapping of the (major) activities and projects (including financial resources) contributing to the achievement of the objectives of IHP-VII. This should include:
        a. the activities and projects implemented by UNESCO Headquarters or by National, Regional or Cluster UNESCO Offices, funded through regular Programme and extrabudgetary resources;
        b. (to the extent not covered by the above) a mapping of (types of) activities and projects implemented by UNESCO (Category I and II) Institutes, Chairs and other associated entities.
    ii. Mapping of the institutional entities and capacities contributing to IHP-VIII and their respective roles in contributing to the achievement of the objectives of IHP-VIII.
    iii. Review of evaluative evidence on the relevance and effectiveness of IHP-VII activities and projects (e.g. SISTER inputs, project documents, annual progress reports, final narrative reports and external evaluations of extrabudgetary projects, SPO3 evaluation, IHP-VI evaluation, other UNESCO documentation; (annual) reports and evaluations conducted by/on Category I and II Institutes; UNDAF documents; UN studies and research conducted by other (UN) organizations active in the field of Water and Development).

[20] A term used to refer to the different UNESCO entities working on water-related issues: IHP, WWAP, UNESCO-IHE, Category 2 Centers working on water-related issues, UNESCO Chairs on water-related issues.

iv. Review of documentation on the mandates, roles and activities of UN organizations and other international organizations active in the area of Water and Development.
v. Review of documentation on organizational structure, and human and financial resources.

B. Interviews (telephone / skype / face to face) with IHP staff, partners in the 'UNESCO Water Family', other stakeholders. A purposive sample of stakeholder interviews will be defined on the basis of lists provided by the IHP Secretariat.

ROLES AND RESPONSIBILITIES (PART I)

The IHP Secretariat is responsible for managing the evaluation and for assuring the quality of the deliverables. IOS will backstop the evaluation by providing specific inputs to the Terms of Reference, selection of the external consultant, the inception report and the final report. Part I of the evaluation will be conducted by (an) external consultant(s). The IHP Bureau will serve as a reference group, commenting on the Terms of Reference and the final report.

KEY QUALIFICATIONS OF THE EXTERNAL CONSULTANT (PART I)

The external (senior) consultant will be selected through an open call. He/she should possess the following qualifications:
- At least 10 years of professional experience including extensive experience in programme and policy evaluation (preferably within the context of developing countries);
- Advanced degree (PhD preferred) in Natural or Water-related Sciences, or;
- Advanced degree in another field but with extensive professional experience in Water-related research and policy initiatives;
- (preferred) Current or past (long-term) affiliation with an academic institution (fellow, staff, emeritus);
- Excellent oral communication and report writing skills in English.

The evaluation can be conducted by a senior consultant or a senior and junior consultant.

LOGISTICS (PART I)

The external consultant will be responsible for his/her own logistics: office space, administrative and secretarial support, telecommunications, printing of documentation, etc. The external consultant will also be responsible for the execution of the data collection work plan. IHP will facilitate this process to the extent possible by providing contact information such as email addresses. IHP will also provide the necessary documentation to the consultant for the desk study.

The assignment will include one mission to Paris (UNESCO).

DELIVERABLES AND SCHEDULE (PART I)

The external consultant will be responsible for the following deliverables:

1. Inception note (max. 3 pages), which encompasses an evaluation matrix (connecting different aspects of the evaluation (see scope) to data sources and methods) and a proposal for purposive sampling of respondents within the population of UNESCO entities of the 'UNESCO Water Family';

2. Comprehensive final report (max. 30 pages excluding Annexes), including an executive summary (max. 4 pages), the exact structure of which will be determined in consultation with IHP (and IOS). The report will comprehensively cover the three aspects described under scope, presenting a forward-looking analytical perspective with concrete recommendations for future improvements.

Activity	Deadline
Call for proposals	4 October 2013
Selection of consultant	22 October 2013
Inception note + inception meeting (virtual)	30 November 2013
Mission to Paris (interviews)	January 2013
Draft report	15 February 2014
Final report	15 arch 2014

PART II

SCOPE (PART II)

Part II of the evaluation will over the following aspects of the IHP evaluation (point iv of the overall scope of the evaluation):

- Implementation modalities and partnerships, identifying opportunities for improved cooperation and fundraising with external partners.

METHODOLOGY (PART II)

In order to adequately address the abovementioned aspects, part II will build on the findings of part I (points i to iii of the overall scope).

In consultation with IHP, a limited number of documents (e.g. previous evaluations, draft report of part I) will be identified to support the analysis. In addition, a limited number of interviews will be conducted with UNESCO staff and stakeholders.

ROLES AND RESPONSIBILITIES (PART II)

The IHP Secretariat is responsible for managing the evaluation and for assuring the quality of the deliverables. IOS will backstop the evaluation by providing specific inputs to the Terms of Reference, selection of the external consultant, the inception report and the final report. The evaluation will be conducted by an external consultant. The IHP Bureau will serve as a reference group, commenting on the Terms of Reference and the final report.

KEY QUALIFICATIONS OF THE EXTERNAL CONSULTANT (PART II)

This relatively small exercise (Part II) requires very specific expertise. Consequently, the consultant will be selected through professional networks. He/she should possess the following qualifications:
- At least 20 years of experience of working in the field of Water-related research or policy intervention.

- Experience as a senior manager of Water-related international programmes, preferably in the context of multilateral international organizations.
- Excellent oral communication and report writing skills in English.

DELIVERABLES AND SCHEDULE (PART II)

The external consultant will be responsible for the following deliverable:

- A succinct report (5-10 pages) with synthetic findings and recommendations on how to improve IHP's partnership and fundraising strategy and practices.

Activity	Deadline
Selection consultant	15 November 2013
Draft report	31 January 2014
Final report	15 February 2014

PART III

SCOPE (PART III)

Part III of the evaluation will cover the following aspects of the IHP evaluation (point v of the overall scope of the evaluation):
The overall intervention logic of the IHP-VIII programme (2014-2021) taking into account its three strategic axes.

[Part III was not implemented]

ACRONYMS

34 C/4	Medium-Term Strategy for UNESCO (2008-2013)
FO	Field Office
ICC	International Coordinating Council
IGO	Intergovernmental Organization
IHP	International Hydrological Programme
IOS	Internal Oversight Service
NGO	Nongovernmental Organization
SISTER	System of Information on Strategies, Tasks and the Evaluation of Result
SPO	Strategic Priority
UNDAF	United Nations Development Assistance Framework
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO-IHE	The UNESCO-IHE Institute of Water Education
WWAP	World Water Assessment Programme