

# **Global Water Initiatives: What Do the Experts Think? Report on a Survey of Leading Figures in the World of Water**

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## **1.1. Abstract**

This paper discusses institutions known as “global water initiatives.” The phenomenon reflects a post-World War II trend toward collective approaches to resolving multinational issues in general and common-pool resources in particular. These initiatives, which arguably have become the dominant model for international water-resources management, have proliferated because of a belief that water transcends national boundaries and must be managed cooperatively, equitably, and using the best science. The paper reviews the evolution of different types of global water initiatives and seeks to evaluate their effectiveness. Via a pair of surveys administered to approximately 120 leaders and prominent observers, the authors query intellectual and political currents, organization and governance, institutional overlap, and overall significance. The central question addressed is whether the “world of water” would have been much different if these initiatives did not exist. Using both quantitative and qualitative methods, this paper presents a preliminary analysis of some of the key questions. The findings should be of interest to scientists, social scientists, lawyers, diplomats, managers, and especially decision makers at all levels.<sup>1</sup>

## **1.2 Preface**

### **1.2.1 Aim of the Present Paper**

Global water initiatives (GWIs) are institutions whose fundamental purpose is to advance the knowledge base regarding the world’s inland water and its management. Additionally, since the 1980s, the core aim of many GWIs has expanded to

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<sup>1</sup> This paper was originally presented at the “Workshop on Impacts of Megaconferences on Global Water Development and Management,” held in Bangkok, Thailand on January 29-30, 2005. The conference was sponsored by the Third World Centre for Water Management (Mexico) with support from the Sasakawa Peace Foundation (USA and Japan).

include an active social and policy component. Thus, the mandate of many of these initiatives now includes attempts to improve access to potable water and sanitation across the globe.

In view of the great diversity of water-related issues, institutions of several types have helped to generate knowledge and create social change. In this paper, we consider four such types of water initiatives: professional societies, designated time periods, organized events, and intergovernmental and nongovernmental organizations.

Although global water initiatives have existed for more than a century and their numbers have increased palpably since World War II, surprisingly little has been written on their collective activities and impact. To attempt to redress the paucity of research on global water initiatives, author Robert Varady began a study of this phenomenon in 2003. In the course of a sabbatical year at UNESCO's International Hydrological Programme in Paris, France, Varady devised a two-part inquiry. On one front, he collected primary and secondary written sources on the initiatives' origins, objectives, leaders, and workings. From this information and from conversations with knowledgeable individuals, a contextual framework was constructed. This framework for the evolution and significance of global water initiatives was presented at several conferences, seminars, and workshops (see, for example, Varady 2003; 2004). The main features of this exploration appear in the background section below.

Concurrently, to help answer key questions on the genesis, operation, and influence of the most significant initiatives, and to better understand the nature of their interactions, Varady surveyed about 120 influential participants and knowledgeable individuals, including officials at nearly 40 international water-related institutions. The inquiry seeks to determine the degree and effects of institutional overlap, identify the most significant actions taken by and overall impact of GWIs, and draw explicit lessons learned by participants in the course of their work with GWIs.

An intuitive working hypothesis, based on conversations, readings, and early impressions, is that the numerous existing global water initiatives frequently have duplicative aims and have overproliferated. Under such a hypothesis, one would expect that experts in the field—a sophisticated and generally sceptical set of informants—would tend to minimize the salutary influences of GWIs and perhaps advocate their consolidation or selective elimination.

The chief purpose of this paper is to report on the survey. Accordingly, in the sections that follow the authors describe the two survey instruments, outline the methodology and tools employed, present selected findings drawn from an analysis of completed questionnaires,<sup>2</sup> and offer some discussion and conclusions on the most salient and meaningful observations. In the process, the validity of the hypothesis will be assessed.

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<sup>2</sup> The data presented and interpreted in the following pages are drawn from a strategic sampling of responses to a larger set of questions. The results, while particularly appropriate for this volume's specific theme, are not necessarily representative of the full range of data and findings of the larger analysis that is in progress.

## 1.3 Introduction

### 1.3.1 What Are Global Water Initiatives and Why Study Them?

As the editor of the journal *Water Policy* has written, “the history of social organization around river basins and watersheds is humanity’s richest record of our dialogue with nature” (Delli Priscoli 1998: 623).<sup>3</sup> But throughout human history, the instruments available to nation-states have remained largely inadequate to handle global institutional problems. Not surprisingly, then, it is only over the past few decades that scientists, government officials, and world leaders have come to realize that water is a key resource whose availability, quality, and effective management are central to assuring human health, prosperity, and peace.

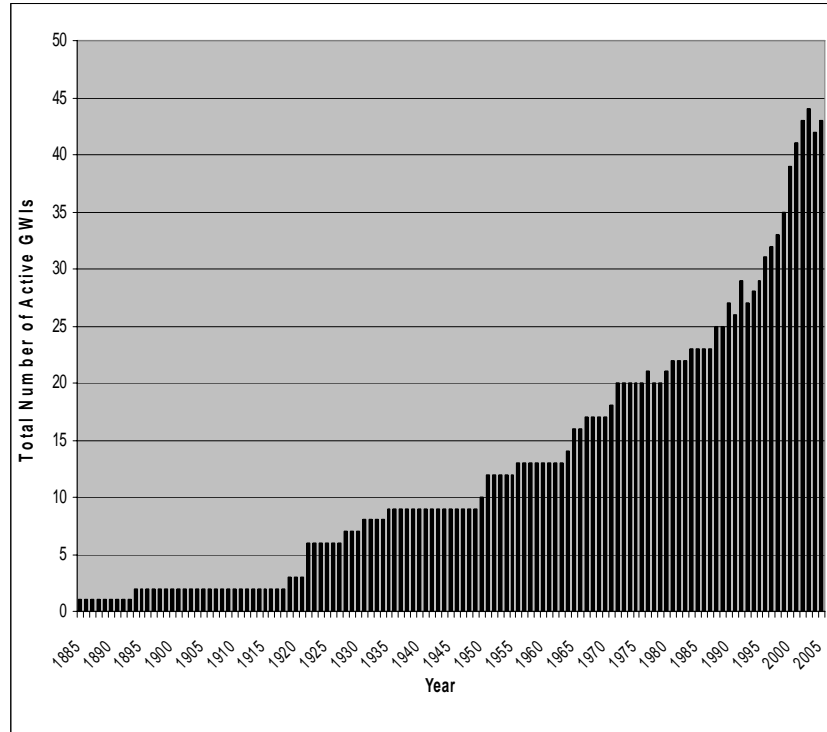
The immediate post-World War II period was marked by large, capital-intensive development projects. Then, beginning in the mid-1960s, partly because of rapidly increasing population and partly due to growing fears of conflict over water, international attention began to turn to the core issue of water policy (Wolf 1998). The decades since the early 1950s have featured concerted, organized activity intended to improve understanding of and enhance access to the world’s water resources.

As Figure 1 suggests, one of the effects of these efforts has been the emergence and proliferation of a montage of water-related associations, programmes, and organizations, what the authors refer to as *global water initiatives*. However, because these institutions have sprung from numerous and often divergent sources, attempts to develop innovative and practical observations and recommendations have sometimes been frustrated by the sheer number of voices and diversity of approaches continually emanating from this dynamic institutional “ecosystem.”

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<sup>3</sup> See Rodda and Ubertini (2004) for additional discussions of the role of water in the history of human societies.

**Figure 1. Significant Global Water Initiatives: Population Growth from 1885 to 2005-09-26**



Source: authors' compilation.

The complete mosaic of global water initiatives remains poorly understood. To what extent do these initiatives constitute a well-defined network with clearly articulated links, traceable influences, and unified purpose? Or, as some have rightfully asked, are the various efforts independent, poorly connected, even competing enterprises? Are there, as many observers have suggested, *too many* concurrent initiatives? Or as the respected thinker Malin Falkenmark has suggested, are we witnessing a generally wholesome instance of “institutional biodiversity”?<sup>4</sup> Underlying these questions, we can ask, as Asit Biswas has, whether the ensemble of water initiatives has made a palpable difference on the ground. In other words, “Would the world of water have been much different if [these initiatives] did not exist?”<sup>5</sup>

<sup>4</sup> Interview of Malin Falkenmark by Robert Varady, Stockholm, Sweden, 3 May 2004.

<sup>5</sup> Personal correspondence with A. K. Biswas, 7 September 2002.

## 1.4 Background

### 1.4.1 The Roots of Water Consciousness and its Internationalization

#### ***Professional Societies***

Beginning in the late 1800s, the earliest modern organizations for those working in the field of water were professional societies. These groups were established to construct common intellectual spaces, share expertise, and stimulate and promote basic and applied research. By the mid-1950s, water scientists, engineers, and managers had established respected, well-functioning, and well-subscribed organizations, each pursuing the interests of its members and pulling in its own direction.

The oldest continuously operating professional water-related society *cum* interest group has been the Permanent International Association of Navigation Congresses (PIANC), which has existed for nearly 120 years. Perhaps the most comprehensive scientific organizations, dating to 1919 and 1931 respectively, are the International Union of Geodesy and Geophysics (IUGG) and the International Council for Science (first called the International Council of Scientific Unions, or ICSU). Both the IUGG and the ICSU have provided wide topical umbrellas that have accommodated hydrologists, hydrogeologists, hydraulic engineers, and other water scientists and practitioners. As with other such transdisciplinary associations, specialists whose numbers were growing began to form their own groups. The earliest offshoots of the IUGG and the ICSU included such societies as the International Association of Hydrological Sciences (IAHS; formerly IASH) and the International Association of Theoretical and Applied Limnology (SIL), both formed in 1922, and the International Association for Hydraulic Research (IAHR), created in 1935. All these associations were born in the decades between the two world wars (George 2003). Table 1.1 lists some of the most significant water-related professional societies.

**Table 1.1.** Examples of influential international professional societies

Professional society	Date Established
Permanent International Association of Navigation Congresses (PIANC)	1885
Commission Internationale des Glaciers (Intl. Comm. on Snow and Ice)	1894
Intl. Union of Geodesy and Geophysics (IUGG)	1919
Intl. Association of Hydrological Sciences (IAHS; formerly IASH)	1922
Intl. Geographical Union (IGU)	1922
Intl. Assoc. of Theoretical and Applied Limnology (SIL)	1922
Intl. Council for Science (ICSU; formerly Intl. Council of Sci. Unions)	1931
IAHR (formerly Intl. Association for Hydraulic Research)	1935
Intl. Union of Technical Associations and Organizations (UATI)	1951
World Irrigation and Drainage Congresses (triennial)	1951
Intl. Association of Hydrogeologists (IAH)	1956
Committee on Water Research (COWAR)	1964
Intl. Association for Water Law (AIDA)	1967
Intl. Water Resources Association (IWRA)	1972
World Water Congress (triennial)	1973
Intl. Hydropower Association (IHA)	1995
Intl. Water Association (IWA)	1999
Intl. Water Associations Liaison Committee <sup>6</sup> (IWALC)	2000
Intl. Water History Association (IWHA)	2001

Sources: Compiled by authors and partly absed on personal communications with officials of some of the societies (e.g. IAHR, IGU, IHA and IWA).

### ***World War II and its Aftermath: Multinationalism and Technology***

The aftermath of World War II had a very significant influence in changing perceptions of water. In 1945 in the wake of the destructive six-year upheaval, a strong sentiment for multinational approaches to avoiding new wars gave rise to the United Nations (UN). The signatories of the UN Charter recognized that many of the world's problems transcend political borders, and like issues of war and peace, are best addressed multilaterally (Victor and Skolnikoff 1999; Keohane et al. 1994; Udall and Varady 1993). Simultaneously, during the formative years of the UN, the western nations and the Soviet Union had at their disposal the potent technologies of the period. In the hubris of victory against Germany and Japan, the world powers brimmed with confidence over their ability to deploy the new technologies to transform society and adapt the landscape to human needs (Weiner 1992).

Nowhere was this new impulse to harness technology more clearly visible than in the realm of water. The years from 1945 to the late 1970s brought an unprece-

<sup>6</sup> IWALC is unusual among these organizations in that it is a grouping of the chief executives of other water-related societies and has no general membership. While this admittedly stretches the definition of a "professional society," because IWALC's general aims are consonant with those of a society the authors have chosen to include it in this category.

dented initiation of ambitious, large-scale waterworks such as dams, barrages, irrigation schemes, and hydroelectric plants; river diversions and interbasin transfers; and wetlands-drainage and land-reclamation projects. Heralded as signals of 20<sup>th</sup> century progress, these enterprises underlined the centrality of water to society. During this time, numerous institutions arose to advocate one or another aspect of water.

At that same time, water scientists continued forming new professional societies whose aims reflected evolving priorities of water science and management. The International Union of Technical Associations and Organizations (UATI), the triennial World Irrigation and Drainage Congresses, and the International Association of Hydrogeologists (IAH), all originated in the early to mid-1950s. By this time, at the height of the Cold War, professional societies began to supplement their scientific and collegial goals with pursuit of certain social or political objectives, mostly in the nature of increasing dialogue and communication among colleagues. As an example, the International Association of Hydrogeologists, established in 1956, the year of the Soviet suppression of the Hungarian uprising, was strongly motivated to rectify the “virtual breakdown of relations between the countries of Eastern Europe and the West, together with the isolation of huge areas of Asia,” which they saw as the cause of “enormous problems for international science and its practitioners” (Day 1999: 1).

### ***The International Hydrological Decade (IHD) and Its Origins***

Post-war polarization not only isolated professionals from some of their counterparts, it created a gulf in the content of science. Ideological differences were reflected in the distinct schools of science and approaches to technology that began coalescing during this time. This prompted scientists, engineers, educators, and UN officials to call for the designation of a unified and concerted global effort to gather and interpret data on the planet. The result was the International Geophysical Year (IGY), which lasted from July 1957 to December 1958 (Chapman 1959). IGY marked the first serious, sustained collaboration between Soviet and western scientists and set the stage for other large-scale, focused, and ideologically safe planetary science programmes.

The success of the IGY inspired other scientists, among them Michel Batisse of UNESCO, Raymond Nace of the U.S. Geological Survey, and Léon Tison of IAHS—three leading figures in the world of water. According to Batisse, the idea of a hydrological programme modelled on IGY first arose in mid-1960 in the United States, prompted by the National Science Foundation. Soon after, at an informal conversation at an IAHS symposium in Athens, Greece, Batisse, Nace, Tison, and others began to explore the possibility of declaring an official designated time period for hydrology. By 1962, with a groundswell of support from other scientists, various quarters of the UN, and a number of key member nations, the formal process of planning for the International Hydrological Decade got under way (Batisse 2005: 84). UNESCO, which did not at the time have a water-resources division, was nonetheless deemed best-suited to arrange meetings, coordinate ac-

tivities, and provide multilateral leadership for planning and implementing the proposed Decade. Its major partner was a UN sister agency, the World Meteorological Organisation (WMO). Following its November 1962 general meeting, UNESCO convened additional sessions aimed at broadening participation and re-examining and revising the original proposal to create an international decade. The recommendations of these meetings were adopted by the end of 1964 and UNESCO launched the International Hydrological Decade (IHD) at the start of 1965 (Korzoun 1991; Batisse 2003; Batisse 2005).

Most observers agree, and the surveys discussed below confirm, that the Decade, which ended in 1974, was a major boon to the field of water sciences as a whole and to understanding the hydrologic cycle in particular. At the outset the programme defined five main objectives: to collect hydrologic data, assess resources and budget balances, conduct research into problems, educate and train new personnel, and facilitate information exchange. In the course of addressing those objectives, the Decade promoted scientific cooperation and substantially advanced the state of hydrologic knowledge. One of the byproducts of the flurry of activities generated by the IHD was that it drew considerable attention to water issues.

One of the IHD's specific objectives, an inventory of the world's water balance, was accomplished not long after the end of the Decade with UNESCO's 1978 publication of *World Water Balance and Water Resources of the Earth* (Korzoun 1978). This comprehensive inventory provided previously unavailable basic data at different scales. More significantly, it offered the possibility of assessing the state of the planet's available water resources. In the process, the Decade prompted a succession of publications, such as an authoritative glossary and numerous monographs, papers, reports, educational materials, and other documents. In addition, IHD convened at least 25 major international conferences, helped train technicians, and generally raised the profile of the study of water and its problems.

### ***The International Hydrological Programme (IHP)***

The International Hydrological Decade's last official action was a scientific conference held in Paris in 1974. The final report of the IHD showed that more than 100 nations had taken part in the Decade, confirming the hypothesis that scientific cooperation would transcend political differences (Korzoun 1991). The immediate question raised by the IHD's apparent success was how to harness its momentum to carry forward its unfulfilled ambitions. Accordingly, the closing conference agreed to view the just-concluded IHD as the first part of an organic, long-term programme. UNESCO's 1974 General Conference took the lead in transforming the Decade into a periodically renewable institution called the International Hydrological Programme (IHP). Subsequent discussions centred on the eventual roles of two key UN agencies with sometimes overlapping water-related agendas, the World Meteorological Organization (WMO) and UNESCO. By agreement, IHP was housed at UNESCO, which agreed to provide the bulk of its budget. At that same time, UNESCO and WMO signed a cooperative accord that remains in

force. In the 30 years since IHP's birth, WMO has been an important participant and partner in many of IHP's activities (Rodda 1991; UNESCO/WMO 1988).<sup>7</sup>

The goal of the new effort was similar to that of the Decade: *to strengthen the connections between scientific research, application, and education in the realm of water*. Also like the IHD that preceded it, the International Hydrological Programme has been an engine of activity. It helped promote such influential conferences such as the 1977 UN Conference on Water in Mar del Plata, Argentina, as well as numerous scientific studies, training programmes, and publications. But the IHP's most significant contribution may be its institutional centrality, persistence, and resilience. By offering a permanent forum for water-related interests, IHP has helped encourage multinational cooperation and stimulate innovative approaches to water science and management.

#### 1.4.2 The Evolution of Global Water Initiatives

Following the previous review of the emergence of professional societies, this section describes other global water initiatives, namely the creation of thematic eras after the IHD, the establishment of organized events, and the growth of intergovernmental and nongovernmental water initiatives.

##### ***Designated Periods***

The International Hydrological Decade, as noted, was inspired by the International Geophysical Year. Other such time periods have been infrequent, but two are worth mentioning. The first, the International Drinking Water Supply and Sanitation Decade (DWSSD), was declared in 1981, commencing six years after the end of the IHD. This effort aimed to redress massive shortages of access to potable water and sewerage. A dozen years after the DWSSD ended, it was clear that much of the world continued to lack safe drinking water. Beginning at the 1992 Earth Summit in Rio and through the 2002 World Summit on Sustainable Development in Johannesburg, experts, officials, and activists began calling for comprehensive steps to address this crisis (Cosgrove 1999; Cosgrove and Rijsberman 2000). Improving water management, according to this view, could only be achieved via far-reaching measures that would include population reduction, improved women's education, reformed modes of water governance, and new economic approaches. A recent attempt to realize some of these aims was the 2003 International Year of Freshwater (IYF). It constituted an important effort to improve management practices and to raise public awareness regarding the relationship between water, poverty alleviation and development (Brewster 2004). As with most such initiatives, results have been difficult to measure and some have questioned its effectiveness.

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<sup>7</sup> In particular, the WMO's broad-based and highly influential Hydrology and Water Resources Programme.

Other such periods have been proposed. The most recent example of such an initiative was in September 2003, when representatives of 53 countries at a global freshwater forum in Tajikistan appealed for a new decade to concentrate on quality-of-life issues relating to water. In response, the UN has created the International Water for Life Decade, which began on World Water Day, March 22, 2005. Table 1.2 lists designated periods of water awareness.

**Table 1.2.** Designated time periods relating water

Designated period	Year(s)
International Hydrological Decade (IHD)	1965-1974
International Drinking Water Supply and Sanitation Decade (DWSSD)	1981-1990
International Year of Freshwater (IYF)	2003
International Water for Life Decade	2005-2015

Sources: "Milestones," World Water Assessment Programme (2003b): pp. 24-28; and authors' compilations.

### **Organized Events**

In addition to the designated time periods, another extremely common type of global water initiative has been the organized conference.<sup>8</sup> Both modern diplomats and academics have evinced a fondness for large "watershed" summits that unite diverse participants and aim to resolve outstanding issues. Notable events, many of them sponsored or cosponsored by UN agencies, at which water was a major topic are shown in Table 1.3.

**Table 1.3.** Significant events relating water

Designated event	Declaration	Year	Venue
UN Conf. on the Human Envir.	Stockholm Decl.	1972	Stockholm
UN Conf. on Water	MDP Action Plan	1977	Mar del Plata, Arg.
Intl. Conf. on Water and Envir.	Dublin Statement	1992	Dublin
UN Conf. on Envir. & Devel.	Agenda 21	1992	Rio de Janeiro
First World Water Forum	Marrakech Decl.	1997	Marrakech
Intl. Conf. on Water & Sust. Devel.	Paris Decl.	1998	Paris
Second World Water Forum	World Water Vision	2000	The Hague
UN Millennium Assembly	Millennium Decl.	2000	New York
Intl. Conf. on Freshwater	Ministerial Decl.	2001	Bonn
World Summit on Sust. Devel.	Johannesburg Plan	2002	Johannesburg

<sup>8</sup> Some of these conferences have been so large and ambitious in scope that observers have termed them "megaconferences." For the purposes of the present volume, the term has been used by A. K. Biswas to apply to 'significant' water conferences, regardless of their size and scope.

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Third World Water Forum	Kyoto Minist. Decl.	2003	Kyoto
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Sources: "Milestones," World Water Assessment Programme (2003b): pp. 24-28; and authors' compilations.

The periodic events generally have been well attended and have fielded ambitious, wide-ranging, and crowded agendas. Usually, these summits have yielded thoughtful, well-intentioned statements, declarations, plans, or other documents. But often it seems that the energy and enthusiasm that are manifest at these gatherings dissipate rapidly and leave few lasting traces. Indeed, the elusive outcome termed "networking" may best characterize the benefits of such forums. In a section below, we examine the responses of water experts who were asked about their views on the influence of such events. Paradoxically, it appears that even as the popularity and legitimacy of such programmes grow, their effectiveness remains relative, unmeasured, and not always evident (Salman 2004; Speth 2003; Falkenmark 2001).

### ***Intergovernmental and Nongovernmental Water Initiatives***

The cauldron of ideas and activity generated by professional societies, the IHD and other designated periods, summits, and the IHP clearly elevated the profile of global water issues. A more lasting impact may be that the existence of these institutions spawned new alliances and organizations. At certain times elements of the above institutions came together to pursue distinctive water-centered agendas.

Beginning in the early 1950s, but especially in the years following the IHD – and often prompted or supported by the IHP and other UN agencies such as WMO and the United Nations Environment Programme, or UNEP (which was itself an offspring of a megaconference, the 1972 UN Conference on the Human Environment)– numerous multinational initiatives were launched. Table 1.4 provides a sampling of the most prominent initiatives. Some of these were aimed at particular water-related sectors (e.g., irrigation and agriculture, waterworks construction, water supply and allocation, drinking water and sanitation, public health, inland basins, groundwater, wetlands, ocean waters, climate, and ice); some represented disciplinary orientations (e.g., hydrology, ecology, climatology, environmental health, social sciences, and law); and some were expressions of particular visions (e.g., sustainability, food and water security, interdisciplinarity, environmental justice, 'environmentology,' stakeholder involvement, science-policy dialogues, and conflict resolution). Of special note are a set of initiatives intended to improve the acquisition, management, dissemination and use of water-related data. IHP's FRIEND initiative and the WMO Hydrology and Water Research Programme's WHYCOS, for example, both represent important attempts to coordinate the development of high-quality, regional-level data, and facilitate its exchange among scientists and resource managers. In 1999 IHP and WMO jointly formed the HELP initiative to translate the kinds of datasets and professionals networks produced by FRIEND, WHYCOS, and similar programmes into real-world manage-

ment contexts using the integrated water resource management (IWRM) paradigm.

Some of the largest, most active, and arguably best-financed global water initiatives of this type have arisen quite recently, since 1996. Two of these, the World Water Council (WWC) and the Global Water Partnership (GWP), have palpably activist aims and appear to be the most ambitious and comprehensive. They mean to promote particular, forward-looking approaches to water management. While both seek to improve access to water and thus reduce poverty and enhance security, they have adopted different strategies en route to achieving this common long-term goal (Delli Priscoli 2005). The WWC has sought to realize this overarching objective by structuring itself as a forum or think tank that brings into articulation a range of existing organizations for the purpose of developing innovative water-management strategies. The GWP was designed to focus specifically on promoting the synchronization of activities among development-related water organizations in an effort to more effectively use the limited resources allocated to the “developing world’s” water sector. Two other organizations, the Global International Waters Assessment (GIWA) and the World Water Assessment Programme (WWAP), are less activist; as their names imply, they seek instead to assess the world’s water situation. WWAP is distinctive as a rare concerted effort to attempt to systematically aggregate and synthesize knowledge of the world’s water resources and their use. It is an example of how a collection of UN bodies and agencies can collaborate on a cross-cutting issue of significance.

The initiatives discussed briefly in this paper represent a cross-section of the movements, organizations, and efforts that have arisen over the past decade. The advent of these internationally oriented, nongovernmental and intergovernmental institutions is a development with parallels in other domains such as public health and agriculture. Like those, it is distinctive and remarkable. The networks within which these initiatives function, the connections between organizations, and the varieties of missions and strategies expressed are as yet poorly understood and merit further study.<sup>9</sup>

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<sup>9</sup> The authors recognize that the significant role of the World Meteorological Organization in shaping the global water sector remains underdeveloped in this current account. While space does not permit greater elaboration here, this and other omissions will be addressed in future research.

**Table 1.4.** Examples of influential intergovernmental and nongovernmental global water initiatives

Institution	Date established
International Commission on Large Dams (ICOLD)	1928
Intl. Commission on Irrigation and Drainage (ICID)	1950
Working Group on Representative and Experimental Basins	1965
Ramsar (Ramsar Convention on Wetlands)	1971
Intl. Hydrological Programme (IHP; based at UNESCO)	1975
World Climate Research Programme (WCRP)	1980
Intl. Water Management Institute (IWMI; formerly IIMI)	1984
Flow Regimes from Intl. Experimental and Network Data (FRIEND)	1985
GEWEX (Global Energy and Water Cycle Experiment)	1988
Intergovernmental Panel on Climate Change (IPCC)	1988
Water Supply and Sanitation Collaborative Council (WSSCC)	1990
Intl. Human Dimensions Prog. on Global Environmental Change (IHDP)	1990
Biospheric Aspects of the Hydrological Cycle (BAHC)	1992
World Hydrological Cycle Observing System (WHYCOS)	1993
Intl. Network on Participatory Irrigation Management (INPIM)	1994
Global Water Partnership (GWP)	1996
World Water Council (WWC)	1996
World Commission on Water for the 21st Century	1998
Global Intl. Waters Assessment (GIWA)	1999
Hydrology for Environment, Life and Policy (HELP)	1999
World Water Assessment Programme (WWAP)	2000
Dialogue on Water & Climate/Co-operative Programme on Water & Climate (DWC/CPWP)	2001
Dialogue on Water, Food and the Environment (DWFE)	2001
Global Water System Project (GWSP)	2002
UN Water	2002

Source: authors' compilation.

## 1.5 Methodology

As noted in the preface, most of the information in the previous section was gleaned from archival research and literature reviews. To supplement that information with more personal or “first-hand” observations of international water-resources professionals, two questionnaire surveys were developed and administered to key leaders and experts in an effort to elicit their opinions about the effectiveness and impacts of selected global water initiatives (GWIs). In the following sections, we describe the processes used to define and identify the potential respondents, develop the structure of the survey instruments, and adopt and implement the techniques used to analyze the results.

Before continuing, the rationale for and consequences of the decisions discussed below merit explicit consideration. As defined, the study population represents a particular segment of the remarkably diverse field of actors involved in water management and research. This segment comprises many of the water sector's elite innovators and decision-makers and was selected strategically to gauge the perceptions of persons well positioned to define the shape of the water sector at a global level. Such individuals and their institutions tend to be disproportionately located in the "First" or "Developed" World.

As such, the current study's findings are neither intended nor should they be taken as representative of "the water sector," writ large, but are valuable insofar as they reflect the perspectives of those who have had and/or continue to wield influence in the sector. This is not to suggest that the contributions of local and regional water managers and researchers are less significant or even that the activities of the sector's elite are necessarily over-determining. Instead, the authors believe that the selected population for sampling is but one of many deserving further study for its unique contributions to the world of water, one which has to date received remarkably little systematic interrogation.

### 1.5.1 Sampling and Data Acquisition

After careful consideration, the population most appropriate for the study's parameters was determined to be one defined as individuals who significantly have helped shape the development and activities of GWIs. With that as a defining criterion, two types of potential respondents were identified: (1) *representatives*, that is, high-level professionals and administrators, working for or directly involved with particular GWIs, and (2) *observers* who, though not directly affiliated with a particular initiative, are nonetheless highly knowledgeable or experienced about GWIs.

The sample of representatives was drawn from a population of current chairpersons, executive directors, secretaries general, or persons in similar leadership positions affiliated with 38 influential organizations in the fields of water research and management. They were instructed to respond to the survey as individuals, but in reference to their specific organization.<sup>10</sup> A sample of observers was drawn from a population identified through surveys of the scientific literature, reviews of lists of former GWI officials, and via "snowballing" (that is, by asking colleagues, contacts, and other informants to recommend other potential respondents). As experts, the observers were asked to respond as individuals, but with reference to the wider field of international water research and management.<sup>11</sup>

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<sup>10</sup> The 38 influential organizations that were identified for inclusion in the study were selected based on reviews of the literature and discussions.

<sup>11</sup> That is to say that the basis of selection was "institutional significance" and "individual reputation," respectively, for representatives and observers. Clearly, however, representatives can be considered knowledgeable and respected individuals in their own right.

Using these methods, the authors identified 54 representatives and 63 observers to survey (Table 1.5), a total of 117 individuals (91 males and 26 females). The individuals were contacted during the spring of 2004 and were asked to participate in the survey. Response rates for both groups surveyed, representatives and observers, was relatively high, approaching 63 and 60 percent, respectively (Table 1.5). Females responded at a significantly lower rate (27 percent) than males (69 percent). Although the number of women who were invited to participate (and then opted to do so) was significantly lower than that of men because of their relatively small numbers within the particular age and position cohorts sampled for this study (as judged from both literature reviews and snowball sampling) the ratio of women to men in the final sample can be considered reasonably representative of their distribution within the particular population of interest.<sup>12</sup> In general, the authors sought to achieve a balanced sample composition, especially with regard to the number of representatives versus observers, gender of respondents, and diversity of institutional affiliation.

**Table 1.5.** Survey respondent types

	Identified	Completed at least 1 survey	Response rate (percent)
Representatives	54	34	63
Observers	63	38	60
Males	91	63	69
Females	26	7	27

Source: authors' compilation.

The 117 persons identified by the authors were contacted and provided copies of the research instruments via e-mail, fax, postal service, or in person. Of those, 82 agreed to participate (Table 1.6). Subsequent communications between Varady and potential respondents continued throughout 2004 in an effort to encourage participation. Only nine of the individuals contacted (8 percent) declined to participate, while about a quarter (22 percent) did not respond.

To date, 70 individuals (60 percent of those invited, or 85 percent of those who agreed to participate) have responded to one or both of the surveys (usually in writing but in several cases verbally; 16 individuals granted interviews or communicated more informally with Varady regarding one or more of the study's central themes). Approximately the same number of persons completing each of the two forms (54 for the long form, 57 for the short form), both of which are above the

<sup>12</sup> Considerable deliberate effort was made to enrol female observers and representatives in the study. As a result, the percentage of females invited to participate exceeds the proportion of those active in the field. Via self-selection, however, the eventual proportion of female respondents was considerably lower.

minimum needed (44) to obtain results valid with a 90-percent confidence interval.<sup>13</sup>

**Table 1.6.** Surveys response summary

Action	Number of individuals	Percent of initial survey pool	Percent of those agreeing to participate
<b>Contacted</b>	<b>117</b>	<b>100</b>	
Declined to participate	9	8	
No response, dropped from list	26	22	
<b>Agreed to participate</b>	<b>82</b>	<b>70</b>	<b>100</b>
Completed one or both surveys <sup>14</sup>	70	60	85
Long form and interview	54	46	66
Short form (influences)	57	48	68

Source: authors' compilation.

### 1.5.2 Data Acquisition, Management, and Analysis

Based on the types of information we hoped to obtain from the respondents, two types of questionnaires were deemed necessary. The first survey instrument was designed to gauge the relative “influence” of selected GWIs. The instrument was built around a Likert scale and was intended to produce quantitative measures of perceived influence that would facilitate a more objective comparison of the 30 GWIs that were evaluated using the survey. The second instrument, an open-ended questionnaire, was structured to obtain qualitative responses to a number of questions related to: intellectual and practical issues; organization background; governance; successes and failures; institutional overlap, cooperation, and competition; and general trends and assessments.

#### **Survey 1: Short Form**

The first survey instrument (Appendix A), referred to as the “Survey 1,” or “short form,” was designed to elicit respondents’ evaluations of the relative influence of 30 different GWIs,<sup>15</sup> both from the perspective of particular organizations of interest, as well relative to the field of global water research, policy and management more generally (via representatives<sup>16</sup> and observers, respectively).

<sup>13</sup> The sample size (n) required for a confidence interval of  $\alpha = 0.10$  with a standard deviation of 1.33 and a tolerable error of (+/-) 1/3<sup>rd</sup> point is 44 ( $n = [(Z_{\alpha/2})^2 \sigma^2] / E^2 \approx 43.34$ ).

<sup>14</sup> See next subsection (below) for a description of the two principal instruments.

<sup>15</sup> Of the 56 GWIs listed in Tables 1.1 through 1.4, 30 of the most active and prominent were selected for this survey.

<sup>16</sup> The design of the instrument did not permit representatives to rate the relative influence of the GWIs with which they were affiliated (and in any event all self-evaluations were excluded from the analysis).

In the survey these 30 GWIs were grouped into three general categories: (1) professional societies, (2) designated time periods and organized events, and (3) intergovernmental and nongovernmental organizations. Within each category, GWIs were listed chronologically (in the cases of events and time periods) or alphabetically (in the case of societies and organizations).

Respondents were asked to rate the intensity of the influence of each GWI by assigning to it a single integer value from a five-point Likert scale<sup>17</sup> in which intensity of influence ranged from “very strong” to “very weak or nonexistent” (from one to five, respectively).<sup>18</sup> Responses, along with variables indicating respondents’ gender and observer/representative status, were compiled by the authors in a spreadsheet for basic descriptive analysis. The dataset was also imported into the statistical analysis package, SPSS.<sup>19</sup> Comparison of means between (a) observers and representatives and (b) women and men were conducted to determine whether statistically significant differences of means could be detected along either of these dimensions. In the case of observers/representatives, the results of a t-test<sup>20</sup> yielded statistically significant differences for six<sup>21</sup> of the 30 GWIs, suggesting that, in general, differences between the two groups were relatively minor. In the case of gender, no statistically significant differences were discernable between men and women.<sup>22</sup> Consequently, in this paper the authors do not distinguish between categories a and b when presenting and discussing results.

### **Survey 2: Long Form**

The second instrument (Appendix B), also referred to as the “Survey 2,” or “long form,” was intended to complement the ratings of influence adduced from the short form by providing participants with the opportunity to express more expansively their perceptions regarding a range of related issues. For example, Survey 2 included questions regarding the constitution and relative significance of different ideas, practices and sociopolitical forces in helping to shape the evolution of GWIs.

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<sup>17</sup> See Likert, R. (1932) for one of the first explications of this approach.

<sup>18</sup> See De Vellis, F. F. (1991) and Spector, P. E. (1992) for discussions of theory and issues behind scale construction and Bernard, R. (1995), Calder, J. (1996), Healy, J.F (1990), and Marsh, C. (1988) for discussions of the use of scales in social science research.

<sup>19</sup> SPSS Release 11.5.0, SPSS Inc.

<sup>20</sup> In this test  $\alpha$  was set at 0.05 in a two tailed t-test adjusted (where appropriate) for unequal variances.

<sup>21</sup> These exceptions were the International Hydrological Decade, the UN Conference on the Human Environment, the International Drinking Water Supply and Sanitation Decade, UN Conference on the Environment and Development, the International Year of Freshwater, and the Third World Water Forum.

<sup>22</sup> It should be pointed out, however, that the small sample size of the women’s cohort ( $n_w = 5$ ) could render any real population-level difference imperceptible.

Further, the instrument sought sophisticated descriptions of the activities of and relations between different actors and organizations, as well as detailed explanations of the development of problems faced, opportunities encountered, and strategies employed in the context of these articulations. Finally, informants were asked to elaborate on how the field is currently developing and to offer prescriptions for where it should be going.

To obtain such accounts and explanations, a 40-question, open-ended response survey was developed and formulated around the following thematic domains: (1) organizational background, (2) intellectual currents, (3) sociopolitical currents, (4) issues and practices concerning governance, (5) evaluation of initiatives' success or failure, (6) inter-institutional relations, and (7) perceptions and evaluations of general trends.

Individual questions within each of these categories were developed in light of primary- and secondary-source literatures and the author's (Varady) own preliminary research. Additionally, these benefited significantly from the suggestions of a number of generous collaborators and colleagues. Through this process of review and revision, questions were developed that not only addressed various aspects of the thematic domain in which they were embedded, but did so in a way that systematically linked these to the more general research interests outlined in the beginning of the paper.

Although structured at this level, because the questions were left open-ended, respondents were allowed to augment, elaborate, and even propose alternative themes, meanings, and orientations that the authors could not have, in some cases, even envisioned, much less accommodated in a more structured format. At the same time, we note that, naturally, not all informants responded to all questions; indeed, their invitations made clear that they could concentrate on those questions they felt were most relevant to their experiences.

At first glance, such a format would appear to make comparative analysis more complicated (relative to, for example, the short form). However, this disadvantage is more than offset by the instrument's capacity to (1) grant the researcher the ability to address multiple and complex issues, (2) permit the respondent far more flexibility in responding to questions, and, ultimately, (3) generate data sets characterized by far greater multi-dimensionality and nuance than would be possible with more structured and more easily-managed instruments.

Analysis of the responses to Survey 2 was inherently complex. For the purposes of this paper, the authors did not employ a discursive analysis but decided instead to approach the data using more straightforward survey interpretation techniques. Specifically, the authors imported the survey data into a popular qualitative data-management and analysis package, called N6,<sup>23</sup> to facilitate the categorization, disaggregation, and sorting of the data set. Through a series of extensive coding procedures, textual data was transformed into categorical data that could be expressed as frequencies and presented in the form of tabulations capable of offering accessible depictions of the distribution of different response-types.

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<sup>23</sup> N6 is a recent version of NUD\*IST and a product of QSR International Pty. Ltd.

For example, with a survey question such as, “What is the role of governments in the work of global water initiatives?” the above technique allows the authors to identify and assign responses into such niches as “offering leadership,” “providing funding,” “advising,” “enhancing participation,” “facilitating stakeholder involvement,” and so on. Once the responses are thus grouped, they can be ordered by frequency and then interpreted.

For the purposes of this paper, of the 40 questions in Survey 2, eight were selected for analysis based on their centrality to the paper’s hypothesis and with particular attention to the thematic foci of this conference. Paraphrased and grouped, the questions are:<sup>24</sup>

- What roles do different constituencies--governments, nongovernmental organizations, and stakeholders, play in the work of GWIs? (Table 1.8)
- What actions have GWIs engaged in and what have these accomplished? (Tables 1.9 and 1.10)
- How do respondents view the overlap and proliferation of GWIs? (Tables 1.11, 1.12, and 1.13)
- What, overall, has been the significance of GWIs for the global water sector? (Table 1.14)
- What lessons have been learned in the process? (Table 1.15)

## 1.6 Survey Findings and Interpretation

### 1.6.1 Survey No. 1: Measuring the Relative Influence of Individual Global Water Initiatives

As described in the methodology section above, the short-form survey instrument was designed to obtain numerical ratings of the perceived “influence” of 30 different initiatives of four types. The number of responses registered, 56, was sufficiently large in all cases to yield meaningful and statistically valid ratings.<sup>25</sup> In this section, we present the results of the responses to Survey No. 1. The authors begin by considering the overall distribution of scores and the ratings of GWI categories and conclude with the presentation and discussion of the survey results for individual initiatives (see Tables 1.7a, b, c, and d.)

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<sup>24</sup> Note: the actual survey questions are included (verbatim) under the title of each figure.

<sup>25</sup> Of course, not all respondents rated every GWI, but in no case did the sample size fall below 44, the minimum needed to achieve 90 percent confidence.

### **General Observations**

- Figure 2 shows the frequency of assigned ratings for four aggregated categories of GWIs (professional societies, designated periods, events, and organizations). As that figure indicates, when taken together GWI scores (1) are nearly evenly distributed around a rating of three, (2) exhibit a relatively flat profile (kurtosis = -1.10), and (3) are only slightly skewed (skew = -0.02) towards ratings of lesser influence. Individually, the distribution of scores for the category “Organizations” most closely follows the collective trend while that for “Events” is skewed toward higher perceived influence.
- The composite mean score for all 30 GWIs was 3.03, with category means ranging from a best of 2.84 (lower is better) to a worst of 3.19. Translating the “1” (best) to “5” (worst) ratings to a grade scale of “A” to “F” (standard for the United States higher educational system), 3.03 can be interpreted as a “C,” or mediocre, grade. In other words, respondents were not inclined to rate the influence of the initiatives highly. This suggests that as a group, the respondents were rather sceptical.
- Further evidence of cynicism is rendered legible by Figure 3: only 12 of the 30 initiatives received a rating higher than C; the highest rating assigned was B<sup>-</sup> (2.0-2.5), which was awarded to only five GWIs, while four were assigned a poor, D<sup>+</sup> rating (3.5-4.0).
- Among the four categories (professional societies, designated time periods, organized events, and intergovernmental and nongovernmental organizations), events were considered the most influential (with a rating of 2.84) and organizations were perceived as least influential (with a rating of 3.19).
- Finally, a test to determine strength of association between a GWI’s date of origination and its mean rating showed no statistically significant correlation between the two variables.<sup>26</sup> This is interesting because one might have hypothesized that, for example, older GWIs would be advantaged relative to younger ones on account of having had more time to exert influence or, alternatively, that younger initiatives could be perceived to exert greater influence on account of their immediate relevance and prominence in contemporary discourse. A demonstration of no correlation between date of origination and mean rating indicates, minimally, that if such factors are at all effective, they are not over-determining.

#### **1.6.2 Results and Findings for Individual Initiatives and by GWI Category**

In the following subsection, survey results (including mean scores, standard deviations, and sample sizes) are grouped by GWI category and presented in tabular

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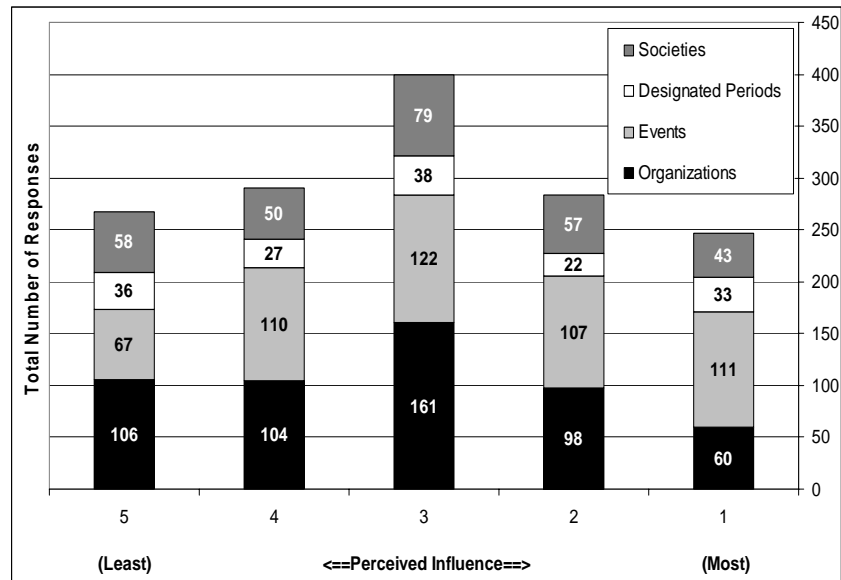
<sup>26</sup> With  $\alpha$  set at 0.05.

form for the study’s 30 initiatives. Each of these four tables is followed by brief summaries of the principal findings.

**Observations on Professional Societies (Table 1.7a)**

- The society receiving the highest rating, that is, the one considered the most influential is also one of the oldest (established in 1922) and most venerable: the International Association of Hydrological Sciences (IAHS). The 4,000-member association’s mission has been simple and essentially unchanging: *to promote the study of hydrology*. With a rating of 2.30, IAHS was the only professional society to score below 3.0 (Rodda 1999; Volker and Colenbrander 1995).

**Figure 2. Distribution of Score (All GWIs)**



Source: authors’ compilation.<sup>27</sup>

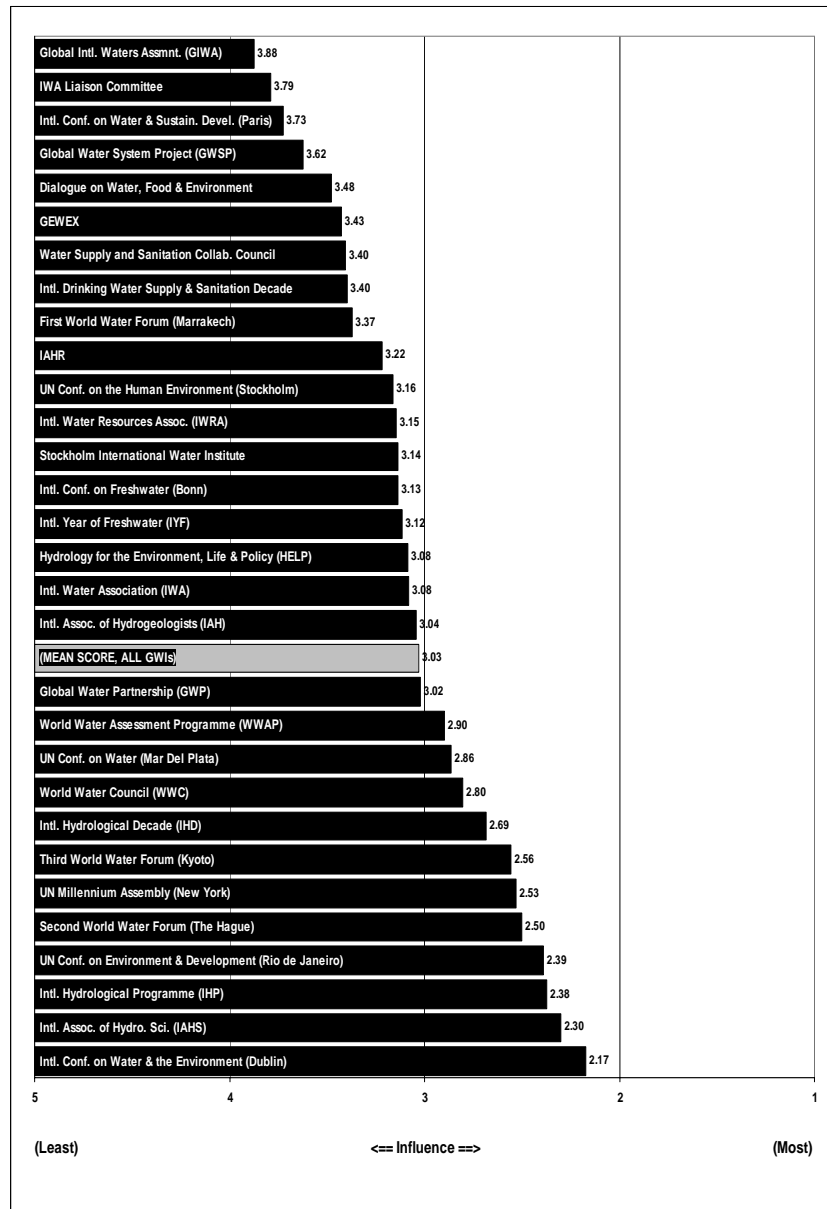
- The next highest-rated institution was a subspecialty society, the International Association of Hydrogeologists (IAH), which has 3,500 members and was es-

<sup>27</sup> Numbers in columns represent the total number of responses offered by the entire pool of respondents per score per category of GWI. For example, a rating of “5” (i.e., “very weak to nonexistent” influence) was given 106 times to the GWIs constituting the category “organizations” by the 57 respondents.

established in 1956 to promote research, 'proper' management, and protection of groundwater (Day 1999). IAH was rated at 3.04, or C.

- The International Water Association (IWA), founded in 1999, is a much newer society with a very broad mission encompassing both research and practice. IWA, which has made a mark in publishing respected books and journals, fared nearly as well as IAHR among respondents, securing a 3.08 rating.
- The International Water Associations Liaison Committee (IWALC) is an even more recent creation. IWALC was intended to promote communication and working relationships among leaders of ten professional societies with differing aims. Its low profile and relative inactivity are reflected in its low rating of 3.79.

**Figure 3. Mean Scores for GWIs in Order of Increasing Perceived Influence**



Source: authors' compilation.

**Table 1.7a.** Perceived influence of professional societies

Professional societies	Mean Rating	Stand. Dev.	N
International Association of Hydrological Sciences (IAHS)	2.30	1.27	50
International Association of Hydrogeologists (IAH)	3.04	1.46	49
International Water Association (IWA)	3.08	1.24	50
International Water Resources Association (IWRA)	3.15	1.15	48
IAHR (formerly International Association for Hydraulic Research)	3.22	1.21	46
International Water Associations Liaison Committee (IWALC)	3.79	1.27	45
All professional societies <sup>28</sup>	3.08	1.33	288

Source: authors' compilation.

### **Observations on Designated Time Periods (Table 1.7b)**

- The International Hydrological Decade (1965-74), rated at 2.69, was considered far and away the most influential time period. As a recognized catalyst for many subsequent developments in hydrological science, education, training, and implementation, the IHD is seen by many long-time observers as the model *par excellence* for raising awareness by means of designating time periods (see, for example, Korzoun 1991; Entekhabi et al. 1999). New initiatives, such as the 2003 movement to create the current International Water for Life Decade (2005-15) uniformly draw their inspiration from the IHD.
- At the other end of the spectrum, the International Drinking Water Supply and Sanitation Decade (DWSSD) was poorly regarded, receiving a score of 3.40. The DWSSD, which was in place during the 1980s (1981-90), unlike other such efforts which sought mainly to enhance science and understanding, was the first such period to target real, on-the-ground improvement in conditions. That many of its goals were unrealized was a disappointment to many observers, who accordingly saw it as not very influential.

**Table 1.7b.** Perceived influence of designated time periods

Designated time periods	Mean Rating	Stand. Deviation	N
International Hydrological Decade <sup>‡</sup>	2.69	1.66	51
International Year of Freshwater <sup>‡</sup>	3.12	1.37	52
International Drinking Water Supply & Sanitation Decade (DWSSD) <sup>‡</sup>	3.40	1.23	53
All time periods	3.07	1.45	156

<sup>28</sup> The mean ratings and standard deviations associated with the row titled "All Professional Societies" were calculated using all scores for all Societies in aggregate. The same is true for the last row in Tables 1.7b-d as well.

‡ Observer and representative ratings showed statistically significant difference for these GWIs.<sup>29</sup>

Source: authors' compilation.

### **Observations on Organized Events (Table 1.7c)**

- Of particular relevance to the present Bangkok workshop, it is noteworthy that of the ten events surveyed, with a 2.17 score, the International Conference on Water and the Environment, commonly referred to as the Dublin Conference (1992) drew the highest rating, not only among peer events, but among all GWIs. This meeting was just the second of its kind devoted to the subject of water (Mar del Plata was the first) and it was designed to set the water-related agenda for the Rio Conference (officially, the UN Conference on Environment & Development, or Earth Summit) held later that year. Some 500 persons from 100 nations attended and drew up the Dublin Statement, which has come to be recognized as a seminal document that has influenced all subsequent declarations (Dublin Statement 1992; UNACC/ISGWR 1992; Salman 2003, 2004).
- The Earth Summit, although a much larger and less focused gathering, also was deemed influential by the survey respondents, drawing the next highest rating, 2.39, and demonstrating that compactness is not a determinant of success for such meetings.
- There have been three World Water Forums since 1997, with a fourth scheduled for 2006. The first of these, held in Marrakech (WWF1), drew a modest audience and was not viewed as particularly influential by the respondents, who assigned a score of 3.37, ranking WWF1 just ahead of the Johannesburg summit of 2002, in next-to-last place. The much larger Second World Water Forum (WWF2), in The Hague, The Netherlands, in 2000, was considered the most influential of the three, scoring a respectable 2.50. WWF3, the 2003 Kyoto event, the largest of the three, had a slightly lower, 2.56, rating. Among participants and observers, the three forums have drawn mixed reviews. The most frequent criticisms of WWF3 have been the event's vastness, its all-inclusiveness and the concomitant diffusiveness of the programme, its inability to articulate a coherent and forceful declaration, and finally, among certain community groups and nongovernmental organizations, fears of its unstated intentions regarding privatization of water (Kuylenstierna 2003).
- The 1977 Mar del Plata conference (formally, the UN Conference on Water) was the first major conference to deal exclusively with the subject of water. Its Action Plan recognized the need to address water issues at all levels, national, regional, and international. The principles embodied in the Plan set the stage for future declarations, pronouncements, and approaches. Yet nearly three decades after Mar del Plata, most observers agree that many of that con-

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<sup>29</sup> IHD (Obs. = 2.09; Rep. = 3.18); IYF (Obs. = 3.56; Rep. = 2.70); IDWSSD (Obs. = 3.04; Rep. = 3.71)

ference's recommendations remain to be fulfilled. For that reason, perhaps, or maybe because of the event's distance in time, it was not rated as particularly influential, receiving a score of just 2.86, placing the event sixth among the ten events considered (Najlis and Kuylensstierna 1997).

- The 2002 Johannesburg World Summit on Sustainable Development ranked last in this category. Coming ten years after Rio, which as we saw was highly regarded, Johannesburg generally disappointed attendees and experts, especially those in the field of water. The summit's theme was deliberately steered toward development, as opposed to environment, and this set a tone for those with interests in ecology, conservation, and better access to water and sanitation. Additionally, the high, perhaps unprecedented degree of politicization that preceded the summit further impeded its success. Unsurprisingly, therefore, it scored last with 3.73 (Speth 2003).

**Table 1.7c.** Perceived influence of organized events

Organized events	Mean Rating	Stand. Deviation	N
International Conference on Water and the Environment (Dublin, 1992)	2.17	1.26	52
UN Conference on Environment and Development (Rio, 1992) <sup>‡</sup>	2.39	1.25	51
Second World Water Forum (The Hague, 2000)	2.50	1.22	54
Millennium Development Goals/UN Millennium Assembly (NYC, 2000)	2.53	1.33	51
Third World Water Forum (Kyoto, 2003) <sup>‡</sup>	2.56	1.21	54
UN Conference on Water (Mar Del Plata, 1977)	2.86	1.31	51
International Conference on Freshwater (Bonn, 2001)	3.13	1.22	52
UN Conference on the Human Environment (Stockholm, 1972) <sup>‡</sup>	3.16	1.39	50
First World Water Forum (Marrakech, 1997)	3.37	1.23	51
World Summit on Sustainable Development (Johannesburg, 2002)	3.73	1.13	51
All events	2.84	1.33	517

<sup>‡</sup> Observer and representative ratings showed statistically significant difference for these GWIs.<sup>30</sup>

Source: authors' compilation.

<sup>30</sup> UNCED (Obs. = 2.04; Rep. = 2.73); TWWF (Obs. = 3.08; Rep. = 2.10); UNCHE (Obs. = 2.63; Rep. = 3.65).

**Observations on Intergovernmental and Nongovernmental Organizations (Table 1.7d)**

- Of the ten organizations rated by respondents, UNESCO's International Hydrological Programme (IHP) received the highest score, 2.38, nearly a half-point higher than the next most highly-rated initiative. This affirmation of IHP's centrality and influence is not surprising in view of several factors: (a) its venerability (IHP is now celebrating its 30-year anniversary) and quasi-permanence;<sup>31</sup> (b) its situation as part of the UN system, within UNESCO, the agency with the largest of the many UN programmes on water; (c) the direct participation of more than 160 national governments in setting IHP's priorities and the legitimacy this association confers; (d) the availability of budgetary resources stemming from this arrangement; and (e) its geographic as well as institutional centrality, which encourages frequent face-to-face meetings, discussions, and joint enterprises.
- Two of the next three highest ratings were assigned to the World Water Council (WWC), which earned a 2.80 score, and the Global Water Partnership (GWP), which received a somewhat lower 3.02. That these two institutions are grouped near the top is of special interest for a number of reasons. They were established the same year, in 1996. They also were created more or less in concert and received initial support from some of the same donor agencies (notably, the World Bank and the UN Development Programme). By design, they were intended to be opposite sides of a coin. Thus WWC was conceived as a think tank that would "promote awareness, build political commitment and trigger action," while GWP was seen as an on-the-ground, action-oriented organization that would help set up functional partnerships among all those involved in water management. The Council operates at a secretariat in Marseille, France, (the host city of Marseille provides WWC's offices and much of its staff) on behalf of some 330 dues-paying institutional members. The Partnership is based in Stockholm, Sweden, and receives funding annually from an assortment of donors as well as from the Swedish government. While publicly, the two initiatives profess to collaborate and to address non-overlapping issues, there are nevertheless palpable undertones of competition between supporters of WWC and GWP, if not between the two initiatives themselves. In reviewing the responses provided by survey informants, there were numerous instances of inverse scoring patterns for the two organizations, that is, high scores for one were accompanied by low scores for the other, and vice versa. To the extent that this survey offers any indication of experts' opinions on relative influence, WWC has achieved the higher rating.
- Like WWC and GWP, two other water initiatives, also ranking in the top five, can be considered to be 'friendly' rivals. The World Water Assessment Programme (WWAP) and the Hydrology for Environment, Life and

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<sup>31</sup> IHP functions in six-year cycles, through which the organization is renewed and its priorities and programmes adjusted and reoriented. The current cycle is IHP-VI (2002-07).

Policy (HELP) initiative both are hosted by UNESCO,<sup>32</sup> and as such, compete to some degree for funds and influence within IHP. But there the similarities end. WWAP, by far the larger of the two enterprises, has been primarily funded by external sources, to date, the Japanese and Spanish governments have been the most significant. Further, WWAP, which was created in 2000, derives its mandate from the United Nations at-large, being a creation of an umbrella group called UN Water, a collection of the leading water-related programmes within the UN family. WWAP's primary charge has been to conduct periodic assessments of the world's water resources and conditions, and to prepare triennial reports on its findings (WWAP 2003a; WWAP 2005).<sup>33</sup> By contrast, HELP, since its 1999 establishment, has been supported mostly by IHP funds, at a much lower level than WWAP, and is officially included within IHP-VI, the IHP's six-year workplan. Unlike WWAP, it does not have a mandatory charge and its mission is more dilute. In its own words, HELP seeks to develop "a new approach to integrated catchment management through the creation of a framework for water law and policy experts, water resource managers and water scientists to work together on water-related problems."<sup>34</sup> In short, HELP is establishing a network of some 75 basins around the world, each of which subscribes to a recommended approach to water management. In practice, only one of the HELP basins has served as a case study for WWAP. Nor have there been other notable overlaps between these two initiatives. Nonetheless, the two initiatives would seem to be competing, if not over similar agendas, then for attention, recognition, legitimacy, and ultimately, influence. WWAP, which was rated at 2.90, scored somewhat higher than HELP, which garnered a 3.08 rating. The difference is not large, however, suggesting that in spite of their differing missions and disparate resources, many observers have difficulty delineating their relative influence (HELP 2005; HELP Task Force 2001).

- Like WWAP, and as its title indicates, the Global International Waters Assessment (GIWA), is a global assessment programme. Created in 1999 and based in Kalmar, Sweden, GIWA was designed as a fixed-term project, slated to conclude its work at the end of 2003. Its aim is "to produce a comprehensive and integrated global assessment of international waters, the ecological status of and the causes of environmental problems in 66 water areas in the world, and focus on the key issues and problems facing the aquatic environment in transboundary waters"<sup>35</sup> (GIWA 2005). Also like WWAP, GIWA received substantial financial support when it began, much of it from the United Na-

<sup>32</sup> HELP is officially a joint undertaking of UNESCO and its sister agency, the World Meteorological Organization (WMO). See HELP 2005.

<sup>33</sup> The reports are meant to be issued on the occasion of the World Water Forums. Thus, the first World Water Development Report, prepared by WWAP, appeared at the 2003 Kyoto Third World Water Forum.

<sup>34</sup> See the HELP Web site at <[http://portal.unesco.org/sc\\_nat/ev.php?URL\\_ID=1205&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201](http://portal.unesco.org/sc_nat/ev.php?URL_ID=1205&URL_DO=DO_TOPIC&URL_SECTION=201)>.

<sup>35</sup> See the GIWA Web site at <[http://www.giwa.net/giwafact/giwa\\_in\\_brief.phtml](http://www.giwa.net/giwafact/giwa_in_brief.phtml)>.

tions Environment Programme (UNEP), the Global Environmental Facility (GEF), and the Swedish government. Unlike WWAP, whose task has been to produce a single report every three years, GIWA was expected to issue periodic area reports on the 66 regions selected, as those areas were assessed. Many respondents apparently felt that GIWA had not fulfilled its promise and ranked the institution last among the ten initiatives rated, giving GIWA a score of just 3.88, or just above D. In March 2005 GIWA distributed a performance survey to its constituents. But other than that activity and a flurry of regional reports issued at the end of 2004, the degree to which GIWA continues to function is unclear.

- Three of the organizations appearing in Table 1.7d, the Global Energy and Water Cycle Experiment (GEWEX), the Dialogue on Water, Food and Environment (DWFE), and the Global Water System Project (GWSP) were ranked among the bottom four, receiving scores of 3.43, 3.48, and 3.62, respectively. That these initiatives got relatively poor grades is perhaps attributable to their low profiles and specialized niches. Two, GEWEX and GWSP, are highly scientific and therefore likely unknown to many of the respondents, even though GEWEX has existed since 1988 (GWSP is less than three years old). These results yield a useful caveat: *That despite their statistical validity, the ratings provided by the survey respondents obviously include a strong “PR” (public relations) component.* As elsewhere, it’s not only what you achieve that matters, but how well you inform your public.

**Table 1.7d.** Perceived influence of organizations

Intergovernmental and nongovernmental organizations	Mean Rating	Stand. Deviation	N
UNESCO International Hydrological Programme (IHP)	2.38	1.18	48
World Water Council (WWC)	2.80	1.27	51
World Water Assessment Programme (WWAP)	2.90	1.21	48
Global Water Partnership (GWP)	3.02	1.30	50
Hydrology for the Environment, Life and Policy (HELP)	3.08	1.25	48
Stockholm International Water Institute (SIWI)	3.14	1.17	51
Water Supply and Sanitation Collaborative Council (WSSCC)	3.40	1.26	47
Global Energy and Water Cycle Experiment (GEWEX)	3.43	1.30	47
Dialogue on Water, Food and Environment (DWFE)	3.48	1.07	46
Global Water System Project (GWSP)	3.62	1.21	45
Global International Waters Assessment (GIWA)	3.88	1.10	48
All organizations	3.19	1.27	529

Source: authors' compilation.

### 1.6.3 Survey No. 2: Evaluating Views and Opinions of Global Water Initiatives

Results from the long-form analysis appear in the following pages as tabulations (Tables 1.8-1.15) showing the distribution of responses for each of the eight questions analyzed. In each case, the actual question posed in the survey form appears in quotation marks below the table heading. Significant observations on the response sets to each question appear just below the table corresponding to that question.<sup>36</sup>

#### ***Role of Government, NGOs, and Stakeholders: Observations on Table 1.8***

*“The lesson learned most widely is that water assistance should be directed to the grassroots, where spending small amounts will benefit most those in need.”*

—John Rodda, Former President, IAHS

- There is overwhelming support (95.5 percent) for governmental involvement in the work of GWIs.
- Nongovernmental organizations (NGOs) and stakeholder groups are similarly considered important players, with 88 percent and 93 percent of respondents affirming these roles, respectively.
- For governments, leadership is seen as their greatest potential contribution (34 percent), while the prospect of obtaining funding<sup>37</sup> (26 percent) and facilitating broader participation are also viewed as significant.
- Respondents clearly don't expect NGOs and stakeholder groups to provide funding (just 3 percent and 5 percent), but they do see both as enhancing participation (50 percent and 64 percent, respectively). In the process, stakeholder groups, especially, are seen as having the role of asserting their own agendas (18 percent).
- Had this question been asked 25 years ago, the answers likely would have been quite different, with much less acknowledgment of the importance of infor-

<sup>36</sup> However, as explained in the earlier discussion of *Methods*, the response categories used below were derived through the authors' interrogations of data for individual questions (i.e., were not determined *a priori* or developed as part of a master coding scheme) and reflect the specific kinds and combinations of descriptive, thematic, comparative, or evaluative responses offered by study participants. (Note: like-termed categories share an identical definition).

<sup>37</sup> Commenting on the relationship between governments, funding, and GWIs, one respondent claimed that, “in practical terms, the influence of the programmes and initiatives I am aware of has been small on the host bodies and on those at the governmental level participating in them. The main reason for this is the lack of finance to promote these initiatives” (John Rodda).

mal, “bottom-up” constituencies, or, as one respondent commented, over the years, “The lesson learned most widely is that water assistance should be directed to the grassroots, where spending small amounts will benefit most those in need” (J. Rodda).

**Table 1.8.** Role of Government, NGOs, and stakeholders

Categories of Responses	Government 23 responses 57 responses	NGOs 23 persons 56 responses	Stakeholders 21 persons 36 responses
<b>Functional (n = 89)</b>	<b>100% (n = 35)</b>	<b>100% (n = 32)</b>	<b>100% (n = 22)</b>
Offering leadership (legitimacy and authority)	34 (12)	13 (4)	--
Providing funding	26 (9)	3 (1)	5 (1)
Enhancing participation	23 (8)	50 (16)	64 (14)
Advising	11 (4)	22 (7)	9 (2)
Enhancing Flexibility	3 (1)	3 (1)	5 (1)
Asserting own agenda	3 (1)	9 (3)	18 (4)
<b>Evaluative (n = 60)</b>	<b>100% (n = 22)</b>	<b>100% (n = 24)</b>	<b>100% (n = 14)</b>
Beneficial (n = 55)	95 (21)	88 (21)	93 (13)
Detrimental (n = 5)	5 (1)	12 (3)	7 (1)

Evaluation of a sample of 41 of the 52 returned long forms (Survey 2). January 14, 2005.

**Significant Actions: Observations on Table 1.9**

*“GWIs provide a mechanism for cooperation and sharing of ideas, resources and techniques.”*

—Alan Hall, IAHS/WMO Working Group on GEWEX

*“The boldest initiatives [promoted] a move toward water user associations, which also had direct positive effect on getting women involved in decisionmaking and management.”*

—Eugene Stakhiv, Institute for Water Resources, U.S. Army Corps of Engineers

*“GWIs are effective in shaping policy agendas because they impose a mainstream blueprint thinking that pervades many agendas. Whether these ideas are good, and to what extent they are put in practice is another story.”*

—François Molle, International Irrigation Management Institute

*“Real policy follows capital. If you want to know what’s really happening in water policy, don’t look to intellectual efforts, but go to the working guidelines for development banks.”*

—Aaron Wolf, Professor, Oregon State University

- Efforts by GWIs, according to the respondents, have been oriented most prominently to advancing ideas and practices (49 percent). While 12 responses indicated that GWIs had aided in creating institutional infrastructure, other forms of infrastructure were infrequently cited, indicating perhaps that these may be seen as beyond the capacity of most GWIs. At the other end, promoting cooperation (18 percent), may be considered not ambitious enough.
- Among the ideas and practices that were thought significant, publications were cited by nearly a third of the respondents (11 of 36), with actual projects and programmes a close second (10 of 36).
- Especially germane to the topic of the Bangkok workshop, of the 74 responses considered, only 4 (5 percent) cited the holding and facilitating of meetings and conferences as significant.
- It must be noted that the most frequent response to the question was “unspecified,” which in all was offered 16 times. This likely reflects the vagueness of respondents’ expectations of GWIs. Thus, even among the 36 answers confirming that advancing ideas and practices were important contributions, 14 (39 percent) did not articulate particular ideas or practices.

**Table 1.9.** Significant actions

Categories of responses 32 persons 74 responses	Responses [Percent (number)]
<b>Advancing ideas and practices</b>	<b>49% (36)</b>
Publications	15 (11)
Projects and programmes	14 (10)
Meetings and conferences	1 (1)
Unspecified	19 (14)
<b>Developing infrastructure</b>	<b>33% (25)</b>
Institutional	16 (12)
Guidelines, models, and toolkits	7 (5)
Research and data	5 (4)
Policies	3 (2)
Technology	1 (1)
“Too early to tell”	1 (1)
<b>Promoting collaboration and cooperation</b>	<b>18% (13)</b>
Developing networks	7 (5)
Holding and facilitating international meetings	5 (4)
Collaborating around joint proposals	3 (2)
Unspecified	3 (2)

Evaluation of a sample of 41 of the 52 returned long forms (Survey 2). January 14, 2005.

**Programme Results: Observations on Table 1.10**

*“Few if any of the initiatives have actually been tested against measures of success and where this has been attempted the results have not met the stated objectives.”*

—John Rodda

Whereas Table 1.9 sought to identify which actions were considered significant, the present question asks which actions have been the most enduring, and by implication, most positive.

- Meetings and conference, poorly regarded in the previous question, once again evinced weak support; only 3 of 77 responses indicated that such events were of lasting value.
- As in Table 1.9, advancing ideas and practices was considered meaningful, with just under half of the responses (43 percent) indicating this. Also as above, publications were the favoured output (11 citations).
- By and large, the trends shown in Table 1.10 parallel those in Table 1.9. This is consistent with the correspondence between action (Table 1.9) and results (Table 1.10).

- However, while only 2 of the Table 1.9 respondents (3 percent) thought that developing policies was a significant or even feasible action of GWIs, in Table 1.10, we find that 8 answers (10 percent of the total) maintained that lasting policies had nonetheless resulted from GWI actions.
- Additionally, although cooperation and collaboration were cited as a significant locus of GWI activity in the previous table (18 percent of all responses), it accounted for only 4 percent of the responses when participants were discussing observed results.
- As with Table 1.9, indecision and imprecision, probably a proxy for uncertain expectations and scepticism about the value of GWIs, is striking: 24 of the total 77 responses were of this general type.
- Not surprisingly, amid this uncertainty, only a single respondent explicitly claimed that GWIs had made a “real difference on the ground” by improving quality of life while another stated that “stakeholder needs are rarely directly benefited by international programmes except in a “token” way or through “demonstration projects”” (W. J. Shuttleworth).
- One respondent suggested a possible explanation for the patterns of non-specificity and pessimism when he claimed that “Few if any of the initiatives have actually been tested against measures of success and where this has been attempted the results have not met the stated objectives” (J. Rodda). Another respondent, less diplomatic in his assessment, stated flatly that “I do not think any individual process or initiative is really having a ‘major’ impact on the global water situation right now” (J. Kuylenstierna).

**Table 1.10.** Programme results

Categories of responses 33 persons 77 responses	Responses [Percent (number)]
<b>Advancing ideas and practices</b>	<b>43% (33)</b>
Publications	14 (11)
Projects and programmes	9 (7)
Meetings and conferences	4 (3)
Unspecified	16 (12)
<b>Developing infrastructure</b>	<b>27% (21)</b>
Guidelines, models, and toolkits	10 (8)
Research and data	9 (7)
Institutional	6 (5)
Technology	1 (1)
<b>Influencing policy</b>	<b>10% (8)</b>
National	5 (4)
International	3 (2)
Institutional	1 (1)
Unspecified	1 (1)
<b>Cooperation and Collaboration</b>	<b>4% (3)</b>
	<b>1% (1)</b>

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**Improved Quality of Life**

<b>No results reported</b>	<b>14% (11)</b>
“Too early to tell”	10 (8)
Unspecified	3 (2)
No significant results	1 (1)

Evaluation of a sample of 41 of the 52 returned long forms (Survey 2). January 14, 2005.

***Institutional Overlap: Observations on Table 1.11***

*“Donors claim to be confused, but the situation is no different than in other sectors.”*

—Margaret Catley-Carlson, Chair, Global Water Partnership

- In considering the important issue of institutional overlap among GWIs, nearly three times as many answers attempted to explain the impact of overlap (52) as those that sought to define its origins and causes (18). Regarding this asymmetry, one respondent suggested that the phenomenon of overlap in the water sector is not particularly remarkable: “donors claim to be confused, but the situation is no different than in other sectors” (M. Catley-Carlson).
- Many more respondents characterized the relative impact (positive vs. negative) of overlap (24) than offered an assessment of its significance (only 8).
- Of those who rated the impact of overlap, 58 percent considered it negative and only 38 percent found it positive. Overlap was thus clearly viewed as less than desirable.
- Consistent with the above observation, 15 of 20 responses (75 percent) indicated that overlap was prevalent. (In fact, in response to the invitation to identify specific examples, one respondent sardonically quipping, “Do you want me to write a book?!”) Furthermore, since, as was indicated above, overlap is undesirable, we can infer that it was seen to be *too* common.
- Half of those who rated the scale of the impact thought it significant.
- Those respondents who offered commentary on the origins of overlap pointed to several sources. For example, respondents suggested that the failure of existing initiatives to cooperate, collaborate and coordinate their activities has led to duplication of programmes when different GWIs work independently to develop essentially the same programmes (instead of, e.g., working together to develop shared institutional infrastructures).
- Another contention (one often heard repeatedly in face-to-face interviews) was that sometimes new GWIs are created for what amounts to personal reasons, namely to fulfil the aspirations or ambitions of forceful individuals, or as one individual wrote, “I think that it is too often a matter of people trying to build empires for themselves (not least in some of the ‘new’ NGOs).” Table 1.11 confirms that such a factor exists; five responses (28 percent of those who provided reasons) suggested that one reason for overlap was the draw of power and influence.

**Table 1.11.** Institutional overlap

Categories of responses 32 persons 70 responses	Responses [Percent (number)]
<b>Origins of and reasons for overlap</b>	<b>100% (18)</b>
Poor coordination, cooperation, and collaboration	28 (5)
Using water politics as an entrée to power and influence	28 (5)
Financing	16 (3)
Other constraints or deficiencies	22 (4)
“Spin-off” from parent organizations	6 (1)
<b>Aspects of overlap</b>	
Perception of impact of overlap	<b>100% (24)</b>
Negative	58 (14)
Positive	38 (9)
Neutral	4 (1)
Prevalence of overlap	<b>100% (20)</b>
Common	75 (15)
Rare	20 (4)
Nonexistent	5 (1)
Scale of impact	<b>100% (8)</b>
Significant	50 (4)
Minor	38 (3)
None	12 (1)

Evaluation of a sample of 41 of the 52 returned long forms (Survey 2). January 14, 2005.

### ***Proliferation: Observations on Table 1.12***

*“None of these bodies wishes to surrender elements of its own programme for the common good.”*

—John Rodda

- Table 1.12 shifts the issue from overlap to proliferation. We have already seen that attitudes toward overlap are generally negative. Table 1.12 extends and amplifies this characterization when considering the creation of new GWIs. Of the 46 answers that depicted perceptions of the impact of proliferation, nearly two-thirds of them (64 percent, as compared to 58 percent in Table 1.12) interpreted the trend negatively. One respondent explained the danger of proliferation in terms of the fragmentation of a non-proliferating resource pool: “We have mandates by the room full and yet the financial resources with which to address problems remains constant, at best” (R. Meganck).
- Of the 18 responses regarding the scale of the impact, 56 percent saw it as significant (vs. 50 percent in Table 1.11).
- Expectedly, along the same lines, 9 of the 10 answers that cited intensified competition as one of the effects of proliferation, saw such competition as a

drawback, not a benefit. One respondent captured this sentiment when he remarked that “None of these bodies wishes to surrender elements of its own programme for the common good. There is little contact between associations; there is no sense of the need to share and competition is widespread. Despite associations claiming certain scientific territories, others will ‘rustle in’ and try to take over. The forces are similar to the demographic pressures evident in the world at large” (J. Rodda).

- Further, of the other six types of effects identified, only two (“opportunities for existing initiatives” and “niche specialization”) could be considered beneficial; these drew eight citations (22 percent of those who identified effects). In other words, 78 percent of the effects listed were mainly negative.
- To sum up, Table 1.11 indicates that respondents found overlap of GWIs problematic and undesirable. When asked more specifically about proliferation, which can be seen as a sort of intensification of overlap, according to Table 1.12, respondents became even more negative.

**Table 1.12.** Proliferation

Categories of responses 34 persons 83 responses	Responses [Percent (number)]
<b>Types of effects</b>	<b>100% (37)</b>
Intensified competition	
Drawbacks (9)	27 (10)
Benefits (1)	
Additional work or activity for GWIs	22 (8)
Confusion, disorder, or added complexity	16 (6)
Opportunities for existing initiatives	14 (5)
Distraction	11 (4)
Niche specialization	8 (3)
Slowing implementation	3 (1)
<b>Relative impacts</b>	
Perception of impact	<b>100% (28)</b>
Negative	64 (18)
Positive	25 (7)
Neutral	11 (3)
Scale of impact	<b>100% (18)</b>
Significant	56 (10)
Minor	28 (5)
None	16 (3)

Evaluation of a sample of 41 of the 52 returned long forms (Survey 2). January 14, 2005.

**Managing Diversity and Proliferation: Observations on Table 1.13**

*“Overlap will never be eliminated, particularly when every issue can legitimately be claimed by almost any sector or group. But without GWIs, more chaos would prevail.”*

—Richard Meganck, Rector, Institute for Water Education (IHE)

*“Although further fragmentation takes place, strengthening of existing initiatives is important.”*

—C. D. Thatte, Former Commissioner, ICID

- After definitively opining that overlap is not beneficial and that proliferation is worse, Table 1.13 shows a startling and apparently contradictory view: in choosing between “guiding” proliferation or limiting it, 47 of 57 responses (82 percent) were to guide it. Put another way, there may be too many GWIs, but by and large, their proliferation should not be limited; instead their efforts should be steered in ways to derive maximum benefit from their actions. One respondent addressed the paradox as follows: “Overlap will never be eliminated, particularly when every issue can legitimately be claimed by almost any sector or group. But without GWIs, more chaos would prevail” (R. Meganck).
- Even of the 10 responses that favoured some limits, about half called for less-than-drastic attempts to decrease the proliferation rate while the remainder suggested merging overlapping organizations and eliminating the inefficient and superfluous. In the latter vein, one respondent wrote that “sunset clauses should be compulsory in all new global water initiatives, the GWIs should go away automatically unless there is a real need for them to continue” (W. J. Shuttleworth).
- In short, as the strategies listed in the top half of Table 1.13 illustrate, respondents perceived that flexible management of organizational overlap is likely the most appropriate option for dealing with proliferation. Or, as another respondent stated, “Although further fragmentation takes place, strengthening of existing initiatives is important” (C. D. Thatte).
- To paraphrase Malin Falkenmark, the existence of numerous, perhaps too many, GWIs mirrors the existence of numerous, perhaps too many, species on our planet. Just as all species benefit from the diversity that results from what may be overproliferation, so institutions such as GWIs may benefit from the richness and variety of approaches, opinions, and individuals.

**Table 1.13.** Managing diversity and proliferation

Categories of responses 28 persons 57 responses	Responses [Percent (number)]
<b>Guiding diversity</b>	<b>82% (47)</b>

Maximize existing opportunities for collaboration	25 (14)
Create or designate overarching authority	12 (7)
Leverage resources to promote cooperation	7 (4)
Continue existing agendas and approaches	7 (4)
Involve politicians and potential adversaries	7 (4)
Facilitate information-knowledge exchange	5 (3)
Develop new approach or framework	5 (3)
Decrease collaboration “transaction costs”	4 (2)
Clarify group roles and boundaries	4 (2)
Nonspecific	7 (4)
<b>Limiting proliferation</b>	<b>18% (10)</b>
Decrease rate of GWI proliferation	9 (5)
Eliminate inefficient and superfluous GWIs	5 (3)
Merge overlapping GWIs	4 (2)

Evaluation of a sample of 41 of the 52 returned long forms (Survey 2). January 14, 2005.

#### **Observations on Table 1.14: Assessing Overall Impact**

*“Certainly GWIs have had very substantial results in terms of scientific understanding and some socioeconomic benefits the transition of this understanding into practical benefit in individual catchments has been less successful.”*

—W. J. Shuttleworth, Professor, University of Arizona

*“At least these institutions provide some context to reorient the decision processes to support the importance of water in economic development.”*

—Richard Meganck

- When asked to assess overall impact, i.e., aggregate influence and success, and in spite of their concerns about overlap and proliferation, 23 of 29, or 48 percent, of respondents expressed the opinion that GWIs had exerted positive or at least partially positive influence.
- Of those who stated which kinds of influences were most significant, a quarter discussed “real” changes; but of those fewer than half thought GWI efforts had been successful. This sense of ambivalence was captured by one respondent who opined that while “Certainly GWIs have had very substantial results in terms of scientific *understanding* and some socioeconomic benefits; the transition of this understanding into *practical benefit* in individual catchments has been less successful” (W. J. Shuttleworth).
- When turning from concrete, measurable changes to fuzzier ones such as increased awareness, one fifth of all responses indicated that GWIs’ efforts to enhance awareness had been successful, with one respondent writing that “at least these institutions provide some context to reorient the decision processes to support the importance of water in economic development” (R. Meganck).

- Results were very similar in regard to improving communication and cooperation. There, six of seven agreed that such work had succeeded.
- With respect to facilitating the work of those involved in the water sector, another difficult-to-measure achievement, seven of eight answers affirmed that this was an outcome of GWI activity.
- Finally, of the six respondents who commented on the impact of GWIs on the water sector's orderliness and efficiency, half suggested that GWIs have failed to significantly improve the sector's efficiency.
- Overall, the responses indicate that GWIs are perceived to have accomplished a series of intermediate goals but have not yet been successful in leveraging these to achieve their ultimate, concrete goals. As one thoughtful respondent proffered: "Actual benefits derived from the work of GWIs are subtle and elusive: support for ongoing projects, sharpening and disseminating the rhetoric of international water agendas, and sensitizing national and sub-national governments to (1) long term threats (2) available instruments to resolve issues (3) evolution of international water law (4) availability of technical assistance. Yet, these important developments may result in concrete successes only after many years have passed . . ." (M. Reuss).

**Table 1.14.** Assessing overall impact

Categories of responses 29 persons 72 responses	Responses [Percent (number)]
<b>GWIs exerted positive influence</b>	<b>100% (29)</b>
Yes	48 (14)
To an extent, or partially	31 (9)
Not really	21 (6)
<b>Kinds of influence</b>	<b>100% (38)</b>
Produces "real" or concrete change	24% (9)
Successful	(4)
Unsuccessful	(5)
Increased awareness or status of water issues	21% (8)
Successful	(8)
Unsuccessful	(0)
Facilitated work of actors in water sector	21% (8)
Successful	(7)
Unsuccessful	(1)
Increased communication, cooperation, and collaboration	18% (7)
Successful	(6)
Unsuccessful	(1)
Increased order or efficiency in water sector	16% (6)
Successful	(3)
Unsuccessful	(3)
<b>Caveats</b>	<b>100% (5)</b>
Long-term (not short-term) benefit	40 (2)

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Effectiveness is scale and context dependent	40 (2)
Need to evaluate opportunity costs of GWIs	20 (1)

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Evaluation of a sample of 41 of the 52 returned long forms (Survey 2). January 14, 2005.

**Lessons Learned: Observations on Table 1.15**

*“Urgent problems demand quick responses, and global water initiatives are usually not the vehicle of choice to resolve these problems.”*

—Martin Reuss, Historian, United States Army Corps of Engineers

*“The instruments available to nation-states today are not adequate for dealing with global and national institutional problems relating to water, natural resources, and the environment.”*

—John Rodda

*“There are too many overlaps and poor coordination between the plethora of initiatives, which so far have yielded little positive change.”*

—Peter Bridgewater, Secretary General, Ramsar Convention on Wetlands

*“There is a huge disconnect between the global discourse and real-world water management on the ground there is very little impact in the real world.”*

—Aaron Wolf

- The large number of responses (78) suggests that respondents were eager to draw lessons from the experiences of GWIs.
- If the responses can be summarized as a coherent recommendation, it would be that the key to GWI success would be to streamline organizational practice so as to facilitate innovation and, especially, cooperation and collaboration with other organizations and with relevant stakeholders.
- The importance of enhancing cooperation and collaboration was cited most often by respondents, with 36 percent suggesting various ways to achieve this. Regarding this need, one respondent offered the following observation: “There are too many overlaps and poor coordination between the plethora of initiatives, which so far have yielded little positive change” (P. Bridgewater).
- Meanwhile, the goal of encouraging innovation accounted for 19 percent of all responses, with one respondent commenting: “The instruments available to nation states today are not adequate for dealing with global and national institutional problems relating to water, natural resources, and the environment” (J. Rodda).

- The need to streamline organizational practice was expressed most frequently (29 percent of all responses) in terms of having to improve the precision and specificity of practice through the standardization of techniques and procedures, addressing problems at the appropriate temporal and geographic scale, and adopting appropriate and specific roles. For example, regarding the issue of temporal scale and GWIs' role, "Urgent problems demand quick responses, and global water initiatives are usually not the vehicle of choice to resolve these problems. National and sub-national states generally do *not* depend on global water initiatives to resolve immediate problems, although they may use data obtained in earlier global efforts to enhance their arguments" (M. Reuss).
- A smaller number of responses (13 percent of the total) discussed streamlining of organizational practice through their identification of a number of important institutional tensions or disjunctures requiring redress in order to improve GWI performance. One respondent noted, for example, a disjuncture between rhetoric and practice when he wrote, "there is a *huge* disconnect between the global discourse and real-world water management on the ground; there is *very* little impact in the real world" (A. Wolf).
- As all four of the major divisions of Table 1.15 suggest, once again it has been the "softer," less-easily quantifiable aspects of GWI operation that have drawn the most attention from respondents.

**Table 1.15.** Lessons learned

Categories of responses 31 persons 78 persons	Responses [Percent (number)]
<b>Enhancing cooperation or collaboration</b>	<b>36% (28)</b>
Networking	21 (16)
Promoting participation	9 (7)
Sustaining communication among members	4 (3)
Promoting transparency and trust	3 (2)
<b>Improving precision and specificity</b>	<b>29% (23)</b>
Standardization of methods, formats, protocols	13 (10)
Use of appropriate temporal and geographic scales	12 (9)
Better-defined organizational roles and niches	5 (4)
<b>Encouraging innovation</b>	<b>19% (15)</b>
Organizational and institutional	8 (6)
Alignment of concepts and practices	5 (4)
Technological	4 (3)
Significance of understanding of history	3 (2)
<b>Addressing institutional tensions</b>	<b>13% (10)</b>
Models vs. "real world"	4 (3)
Rhetoric vs. practice	4 (3)
Research vs. management	3 (2)
Costs vs. Benefits of Networks	1 (1)

Capital vs. Ideas as Principal Policy Driver	1 (1)
<b>“Too soon to tell”</b>	<b>3% (2)</b>

Evaluation of a sample of 41 of the 52 returned long forms (Survey 2). January 14m 2005.

## 1.7 Conclusions

Following a detailed discussion of the character and history of a particular set of global institutions called global water initiatives (GWIs), the authors offered a detailed analysis of a two-part survey administered to leading figures in the field of global water management and research in an effort to elicit their informed perceptions regarding (a) the extent to which each of 30 prominent global water initiatives has influenced the wider “world of water,” and (b) roles of different constituencies in GWIs, impacts of GWIs’ actions, extents and consequences of overlap and proliferation, overall significances of GWIs for global water management and research, and lessons learned from GWIs.

The four tabulations summarizing Survey 1 and the eight reporting on Survey 2 reveal a number of important insights that would not have been apparent without this analysis. The first group of tabulations enables an enumeration of the many global water initiatives competing for resources, influence, and opportunity. In ensuing discussion, the paper shows that, though diverse, these institutions are bound by a very loose commonality, a fundamental purpose “to advance the knowledge base regarding the world’s inland water and its management” (see preface). Beyond this, the authors’ research suggests the utility of distinguishing between four separate categories of global water initiatives: professional societies, designated periods, organized events, and organizations.

Figures 1.2-1.4, Tables 1.7a-d, and associated discussions go further by helping to identify (a) general trends among the wider field of GWIs and (b) which GWIs within each of the four categories were most highly regarded and which seemed to be perceived as having less utility. The data suggest that organized events, as a category, were perceived by respondents as being the most influential while organizations received the lowest rating (mean scores were 2.84 and 3.19, respectively). The average ratings for individual GWIs occupied a range of 2.17 to 3.88.<sup>38</sup> The relatively narrow ranges for both GWIs as categories and individually (0.35 and 1.71, respectively) would suggest that the field of GWIs is one in which no individual element or single class of elements wields significant disproportionate influence. Furthermore, overall, respondents gave GWIs a decidedly mediocre rating (3.03 was the mean score for the entire sample), indicating that, on average, individual initiatives were perceived to have had only moderate levels of influence on the wider “the world of water.” This would suggest that what influence these initiatives have had has been a product of their *aggregate* force (see below).

<sup>38</sup> The International Conference on Water and the Environment and the GIWA, respectively.

Moving from an analysis of the first to the second survey instrument, Tables 1.8 to 1.15 and accompanying observations seek to elicit and assess more nuanced accounts of respondents' perceptions of global water initiatives using a detailed instrument based on an open-ended response format. This analysis provided several key insights.

- First, in Table 1.8 respondents indicated that they perceived governments, NGOs and general stakeholders all to have a place in guiding the work of GWIs, though the roles of each were differently constituted. In particular, governments were valued for providing leadership and funding, while NGOs were seen principally as serving an advisory function and as a mechanism for facilitating broader participation. General stakeholders shared this participatory role and for articulating the agendas of more local constituencies.
- Table 1.9 shows what leaders in the field consider to have been the significant actions taken by GWIs in the past. Half of the responses described efforts to advance more sophisticated ideas and better practices while a third spoke of the generation of institutional, legal, technical, and conceptual infrastructures; whereas the remaining one fifth of responses were dedicated to efforts to promote collaboration among groups within the water sector.
- Table 1.10 shows what respondents perceived to be the results of these efforts. Though roughly symmetrical to the data on actions taken, several anomalies were noted: few noted increased collaboration and cooperation among groups as an outcome while policy change was more often cited as an outcome than as a focus of GWI efforts. Still, a remarkable 20 percent of responses were non-specific, while 10 percent indicated that it was too early to discern effects of GWI activity.
- Table 1.11 offers an intriguing snapshot into perceptions of the issue of institutional overlap, suggesting that it is both undesirable and prevalent. Of the relatively few responses offered regarding the origins of this overlap, 28 percent claimed poor coordination, cooperation and collaboration as a significant factor while another 28 percent of responses involved account of how GWIs had served as vehicles for the ambitions of various interested parties.
- Table 1.12 summarizes respondents' perceptions regarding the consequences of the proliferation of initiatives. Responses indicated that the impacts of proliferation were perceived as both negative and of significant scale. Of the specific consequences cited, 75 percent were negative (including intensification of competition between GWIs, strain on existing initiatives, and escalating confusion, complexity, and disorder); while only 25 percent of responses described positive effects of proliferation (including the creation of new opportunities and trends towards greater specialization).
- Table 1.13 shows how respondents thought these issues might best be dealt with. Significantly, the analysis found that only 18 percent of responses were constituted by calls to limit proliferation while the remaining 82 percent offered suggestions on how diversity might be productively guided.
- Table 1.14 summarizes perceptions of the overall impact of GWIs. Results indicate that, in general, GWIs are perceived to have exerted a positive influ-

ence (with 79 percent of responses suggesting that at least some benefit has accrued on account of their existence). In discussing how, specifically, influence has been exerted by GWIs, respondents suggested that they have been successful in raising awareness of water as an issue, increasing cooperation and collaboration, and facilitating the work of water management. However, evaluation of GWIs' relative success in increasing the water sector's efficiency and producing "real," concrete changes on the ground were ambivalent, with responses split roughly 50/50 regarding whether or not they have affected significant positive change.

- Finally, Table 1.15 reveals respondents' perceptions regarding what key lessons have been learned through their experience with GWIs. Responses suggest the importance of streamlining organizational practice, encouraging continued innovation, and facilitating cooperation and collaboration as a means of rendering the field of GWIs more efficient and productive.

Having presented and discussed these findings, the authors can now address the paper's original hypothesis: that the numerous existing GWIs often have duplicative aims and have overproliferated, and that therefore, knowledgeable observers would tend to minimize the salutary influences of GWIs and perhaps advocate their consolidation or selective elimination.

As the analysis of Tables 1.11 and 1.12 demonstrates, the first part of the hypothesis is easily confirmed. A clear majority of respondents felt that there is too much overlap among GWIs and that these institutions are multiplying too frequently. Yet, surprisingly, the next two tabulations (Tables 1.13 and 1.14) reveal an unexpected turn: these same respondents did not suggest eliminating or merging competing initiatives. To the contrary, they seemed to accept their existence, embrace their diversity, and willingly suggest ways for them to contribute more effectively.

With global water initiatives, it seems, as with grass species or invertebrates, diversity promotes competition and by and large is seen as a healthy attribute. The alternative, as Malin Falkenmark has sardonically suggested, is a monocultural, monolithic model that while perhaps more efficient would surely be less interesting and less progressive (Falkenmark 2004).

## 1.8 Acknowledgments

The present work could not have been accomplished without the benefit of a year's sabbatical granted to Robert Varady by the University of Arizona (UA). There, special thanks go to Stephen Cornell, director of the Udall Center for Studies in Public Policy and Richard Powell, former Vice President for Research and Graduate Studies, for their support; and to W. James Shuttleworth, UA professor of Hydrology and Water Resources, for his encouragement. In addition, the research has been partly funded by a fellowship to Varady from the University's Institute for the Study of Planet Earth.

Our Udall Center colleague Robert Merideth has generously reviewed and edited the manuscript and contributed greatly to its composition. The authors also gratefully acknowledge András Szöllösi-Nagy and Michael Bonell of UNESCO's International Hydrological Programme (IHP). Many others at IHP and elsewhere at UNESCO have been helpful. The late Michel Batisse of UNESCO merits special recognition for his assistance and encouragement. Author Robert Varady also recognizes the influence on his thinking of the HELP (Hydrology for Environment, Life and Policy) Initiative. It is that programme, which has been headquartered at IHP and coordinated by Michael Bonell, that first drew his attention to the global water initiatives phenomenon.

Additionally, the authors are deeply indebted to the more than 70 respondents to Robert Varady's survey. They gave generously of their time, some in personal interviews, and offered invaluable insights into the "world of water."

Finally, we recognize that completion of the present paper was prompted by the January 2005 workshop in Bangkok that has served as the organizing principle for the present volume. In that regard, we thank the Sasakawa Peace Foundation USA and Japan, and the Third World Centre for Water Management for their travel support.

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## 1.10 Appendixes

### 1.10.1 Appendix A

#### **Survey 1: Influences and Connections (for “Observers”)**

Please indicate with an “X” in the appropriate box (one value only)

1 = Very strong . . . 3 = Moderate . . . 5 = Very weak to nonexistent

#### 1. Events:

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Rank the intensity of the influence of these events and their outcomes:    1   2   3   4   5

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1965-74 International Hydrological Decade (IHD)  
1972 UN Conference on the Human Environment (Stockholm)  
1977 UN Conference on Water (Mar del Plata)  
1981-90 International Drinking Water Supply & Sanitation Decade  
1992 International Conference on Water and the Environment (Dublin)  
1992 UN Conference on Environment and Development (Rio Earth Summit)  
1997 First World Water Forum (Marrakech)  
1998 International Conference on Water and Sustainable Development (Paris)  
2000 Second World Water Forum (The Hague)  
2000 Millennium Development Goals  
2001 International Conference on Freshwater (Bonn)  
2003 International Year of Freshwater  
2003 Third World Water Forum (Kyoto)  
Other event  
Other event

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#### 2. Other Institutions

---

Rank the intensity of the influence of each of the following institutions:    1   2   3   4   5

---

Dialogue on Water, Food and Environment  
Global Energy and Water Cycle Experiment (GEWEX)  
Global International Waters Assessment (GIWA)  
Global Water Partnership (GWP)  
Hydrology for Environment, Life and Policy (HELP) Initiative  
Stockholm International Water Institute (SIWI)  
UNESCO’s International Hydrological Programme  
Water Supply and Sanitation Collaborative Council (WSSCC)  
World Water Assessment Programme (WWAP)

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World Water Council (WWC)  
Global Water System Project (GWSP)  
Other institution  
Other institution

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### 3. Professional Associations

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Rank the influence of each of the following professional associations:    1   2   3   4   5

---

IAHR (International Association for Hydraulic Research)  
International Association of Hydrogeologists (IAH)  
International Association of Hydrological Sciences (IAHS)  
International Water Association (IWA)  
International Water Associations Liaison Committee (IWALC)  
International Water Resources Association (IWRA)  
Other professional association

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**Survey 1: Influences and Connections (for “Representatives”)**

1 = Very strong . . . 3 = Moderate . . . 5 = Very weak to nonexistent

1. Events

---

Rank the intensity of the influence on your institution of these events 1 2 3 4 5  
and their outcomes:

---

1965-74 International Hydrological Decade (IHD)  
1972 UN Conference on the Human Environment (Stockholm)  
1977 UN Conference on Water (Mar del Plata)  
1981-90 International Drinking Water Supply & Sanitation Decade  
1992 International Conference on Water and the Environment (Dublin)  
1992 UN Conference on Environment and Development (Rio Earth Summit)  
1997 First World Water Forum (Marrakech)  
1998 International Conference on Water and Sustainable Development (Paris)  
2000 Second World Water Forum (The Hague)  
2000 Millennium Development Goals  
2001 International Conference on Freshwater (Bonn)  
2003 International Year of Freshwater  
2003 Third World Water Forum (Kyoto)  
Other event  
Other event

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2. Other Institutions

---

Rank the intensity of the influence on your institution of each of the following institutions: 1 2 3 4 5

---

Dialogue on Water, Food and Environment  
Global Energy and Water Cycle Experiment (GEWEX)  
Global International Waters Assessment (GIWA)  
Global Water Partnership (GWP)  
Hydrology for Environment, Life and Policy (HELP) Initiative  
Stockholm International Water Institute (SIWI)  
UNESCO’s International Hydrological Programme (IHP)  
Water Supply and Sanitation Collaborative Council (WSSCC)  
World Water Assessment Programme (WWAP)  
World Water Council (WWC)  
Global Water System Project (GWSP)  
Other institution  
Other institution

---

3. Professional Associations

---

Rank the intensity of the connection of your institution to each of the following professional associations:	1	2	3	4	5
IAHR (International Association for Hydraulic Research)					
International Association of Hydrogeologists (IAH)					
International Association of Hydrological Sciences (IAHS)					
International Water Association (IWA)					
International Water Associations Liaison Committee (IWALC)					
International Water Resources Association (IWRA)					
Other professional association					

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### 1.10.2 Appendix B

#### **Survey 2: Global Water Initiatives (for “Observers”)**

Over the past decades, the global water agenda has been shaped by numerous institutions. Among these, *professional societies* such as the International Association of Hydrological Sciences (IAHS) and the International Association of Hydrogeologists (IAH), *dedicated time periods* such as the International Hydrological Decade, *organizations* such as the World Water Council (WWC) and the Global Water Partnership (GWP), and *specialized events* such as the 1977 UN Conference on Water and the more recent World Water Forums all have actively worked to influence research, development, and implementation of water-related programmes.

As someone who has observed and participated in events related to the above phenomenon, would you respond to the following contextual and analytical questions?

#### 1. Intellectual Currents

- In your opinion, what intellectual currents and big ideas have prompted and shaped the evolution of global water initiatives?
- In what ways are these products of the thinking of the time?
- Who have been the leaders and visionaries?
- How have the ideas evolved?

#### 2. Organizational Background

- Which of the types of institutions mentioned above are you most familiar with? Please identify specific ones and insofar as possible, refer to those in your subsequent responses.
- What are their principal orientations (e.g., disciplinary, sectoral)?
- What are their overall goals or visions?
- What have been their main driving forces?

- How have they been financed? At what levels?
  - How have these initiatives evolved their organizational strategies, intellectual orientations, or practical foci?
  - What, if any, has been *your* personal role?
3. Practical Currents
- What do you think is the approach of these initiatives to multilateral resource-governance?
  - What have been the sociopolitical drivers? How do these reflect global, regional, and national politics?
  - To what degree are products and results emphasized?
  - In what ways or circumstances are global water initiatives subject to diplomatic or political constraints?
4. Governance
- How have the above influences been manifested in practical institutional design?
  - What do you think are the most successful structural/organizational models?
  - What is the role of governments in the work of global water initiatives? NGOs? Stakeholders?
  - What “communities” have been formed among participants and others such as other decisionmakers, academics, and activists?
5. Evaluation of Success/Failure
- What have been the most important actions taken by the initiatives you are most familiar with? What prompted these?
  - Who are the expected beneficiaries?
  - By and large, do you believe that the resources expended been influential in shaping water-policy agendas?
  - Can you name real policy changes that can be attributed to the programmes you know best?
  - Do you believe these programmes have yielded lasting, positive, and practical results? Can you give examples?
  - How have progress and achievements been assessed or measured?
  - What have been the perceptions of global water initiatives among governments, managers, stakeholders, academics, and other potential beneficiaries? How have these changed?
  - What have been some key lessons learned by water initiatives?
  - Are there procedures to make the institutional designs responsive to these lessons?
6. Institutional Overlap, Cooperation, and Competition

- How are existing initiatives affected by the continual creation of new initiatives?
- Which of these do you see as most influential in affecting the global water situation?
- Can you identify overlaps, opportunities for cooperation, and examples of conflicts among these institutions?
- How might the broad policy and global-water-initiatives process be steered to harness similar but not identical agendas among institutions?

7. Big picture/summary

- Are the instruments available to nation-states today adequate for handling global institutional problems related to the environment and natural resources?
- In the case of water, are individual countries able to transcend national interests without the involvement of global water initiatives?
- To the extent that you are familiar with such initiatives, how would you gauge their influence and success? Put another way, how would the “world of water” be different today if global water initiatives did not exist?

8. Other information

- Are there other questions I should be asking?
- Can you suggest written sources?
- Who else should I talk to?