

The Founding and Evolution of IWSA and IAWQ 1947 -1999 and the Creation of IWA in 2000 and its Evolution through 2015

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Foreword

This document is intended to provide a concise history of three very prominent international professional/technical water associations:

- The International Water Supply Association (IWSA), founded in 1947;
- International Association of Water Pollution Research (IAWPR), founded in 1962/1965 which was later renamed IAWPRC in 1980 and IAWQ in 1990; and,
- The International Water Association (IWA), which was created anew following the merger of IWSA and IAWQ in 1999, and is now 22 years old.

This history is being revisited in the run-up to the 2022 IWA World Water Congress in Copenhagen, Denmark. On this occasion, IWSA would have been exactly 75 years old, and IAWQ about 60 years old and IWA, now 22 years of age. IWA's President, Tom Mollenkopf, decided to use the occasion of the IWA Copenhagen 2022 World Water Congress and Exhibition (WWCE) to launch an initiative aimed at reconstructing the history of IWA's important heritage through its predecessors IWSA and IAWQ, and at the same time, refresh memories about the iconic pioneers that built these two associations. The formal reconstruction of the history is provided herein and will hopefully contribute to a better appreciation by today's IWA members of the rich legacy of actions and people upon which today's IWA was built.

In reality, this history is a complicated one, involving three dominant international professional/technical water associations spanning 75 years. Pre IWA, the two associations had different causes, different cultures and not surprisingly, different operating modalities.

To tell this story, the paper has been broken up into two parts;

- A Foreword, the section you are now reading, sets the stage for the telling of this 75 year history which unfolds on the pages ahead;
- Part One, which describes the emergence and development of similar, yet two very different associations, IWSA and IAWQ over the period 1947 through 2000;
- Part Two, which describes the creation of IWA following the merger of IWSA and IAWQ in 1999, and its development from 2000 through 2015.

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PART ONE THE FORMATION AND LIVES OF IWSA AND IAWQ -- 1947-1999

I IWSA AND IAWQ - *Perspectives and Context*

The task of describing this history compels that we go beyond laying out the dates, facts and figures of these associations. We believe that we must in this history convey the context in which the organizations were created – the problem set of the day, their respective missions, their evolution, solutions achieved – all in a changing set of external circumstances that shaped their evolution over decades. Sounds logical, but to achieve this, one must consider the events that set the stage for their creation in the second half of the 20th century – the first half of the 20th century.

As will be discussed in detail in the document, both IWSA and IAWPR/IAWQ were formed in the aftermath of WWII, scarcely 15 years apart in time (1947 and 1962/65). Both were international membership organizations aimed at promoting research and best practice with the benefit of international exchange. In short, however, that is where the obvious similarities ended.

However, the environment in which each organization emerged from was dramatically different.

Water Supply

In practice, *the initial state of development of the water supply industry had passed the “invention” stage of the first half of the 1900’s*. Although the basic treatment methodologies adopted varied country by country, most of the advanced countries had implemented reliable solutions by the 1930s – at least in the larger cities.² *Thus, in the post-WWII era when IWSA was founded (1947), most large water utilities were self-contained vertically integrated enterprises, be it public or private.* The task at hand in 1947 then was “building-back-smarter” after WWII, and thereafter to optimize the public health imperatives that the utilities were expected to meet. Later, as we shall see, efficiency and effectiveness, while simultaneously meeting the emergent regulatory standards, would come to dominate the agenda for water supply utilities. IWSA’s mission throughout its existence followed from these circumstances, and its members were decidedly utility organizations, whether metropolitan based or national, and whether public or private.

Pollution Research, Control and Management

In contrast, and as will be discussed in detail below, the means and methods of pollution mitigation in the 1950’s were in “early-days” – very much in the exploration stage in terms of research and science of the aquatic environment and water pollution impacts. The response to this emerging understanding, which “played-out” differently in different countries and continents, initially focused on point source treatment, and led to the invention stage of the field in terms of the science and technology of treatment. National and later continental regulatory and control regimes followed thereafter. In this context, the creation and management of well-functioning utility companies was very much a work in progress. Accordingly, IAWPR in its early and even later days as IAWQ, had a very different mission statement, membership and set of member motivations compared with IWSA.

² Baker, Moses Nelson. Wolman, Able. *The Quest for Pure Water*. The American Water Works Association, 1948

All of this became self-evident as the two organizations contemplated, and then eventually decided, to merge in 1999. For this reason, what was billed by some as the merger of two international water associations – one drinking-water-utility-related and the other wastewater-utility-related -- was far, far from the truth. Instead, the merger represented the blending of two very different causes, perspectives, histories, and classes of membership

As will be discussed below, the resulting blended “families” had the opportunity to take advantage of strengths from each of the predecessor organizations and the opportunity to produce a new, strong and resilient IWA that exists today. However, the transition to this state took a lot of work, as we will see below.

II IWSA and IAWQ – The Basics

Like many significant international professional technical associations in the sciences, medicine, etc. both IWSA and IAWPR/IAWPRC/IAWQ had some very similar features.

The two Associations, once formed had a formal aim, described in the original form in Appendix 1a/b, a governing structure and set of activities that revolved around a recurring congress series, as show in Table One(A). The short version of the aims/purposes of both organizations was to promote their respective cause/mission through international collaboration.

Table One-(A) The Organizational Foundations – Elements of Similarity

	IWSA	IAWPR/IAWPRC/IAWQ
Founded	1947 -- June, In Harrogate, GB	1965 -- June, In Harrogate, GB
Founding Detail (Expanded below)	See Appendix 1A for details	See Appendix 1B for details Note: Major activities began in 1962
Governance	President, Vice President, Treasurer Exec Committee (President is Chair) Governing Assembly (made up of National Committees)	President, Vice President, Treasurer Exec Committee (President is Chair) Governing Assembly (made up of National Committees)
Simplified Association Purpose (expanded below)	Facilitate and promote the global exchange of experience, knowledge and research, to further the <u>overarching mission</u>	Facilitate and promote the global exchange of research, knowledge and experience to further the <u>overarching mission</u>
Categories of Members (Point of similarity and differences)	Utilities (and individuals within utilities); companies Countries through National Committees of members	Individuals , companies, agencies; Countries through National Committees of members
Principle Geographic Composition of Membership	Aspiration: Global, over time Initial: Advanced economies in Europe, North America, Japan, South Africa, Asia Pacific (Figure 1)	Aspiration: Global, over time Initial: Advanced economies in Europe, North America, Japan, South Africa, Asia Pacific (Figure 1)
Activities – Major and subsidiary events	-- Triennial Congresses 1949-> (change to biennial 1966->) --Specialty conferences --Regional conferences	-- Biennial Congress 1962 -> --Specialty conferences --Regional conferences

Narrative Supporting Table One --Parts A

Founding Detail – Both IWSA and IAWQ

As stated in Table One, both IWSA and IAWPR formerly arose from their founding meetings coincidentally held in the same city, Harrogate, Great Britain.

Founding Detail – Specific to IWSA

In the case of the formal founding of IWSA in 1947, **the overarching organizational purpose was related first to the betterment and then second, the optimization of the provision of safe and highest quality supply of drinking water.** Four or five principal countries are cited – Great Britain, the Netherlands, France, and the US. Five because evidence exists that Belgium was one of instigators of IWSA, and also interestingly, four, because the US did not figure into the picture until 15 years later. The first actual congress of IWSA was in 1949 in Amsterdam, where the governing board was constituted, and the first practicing president of the association, IR C. Biedmond, MD of Amsterdam Water, took the reigns of IWSA. In one sense then, IWSA was invented in 1947 and founded in 1949.

Founding Detail – Specific to IAWPR

As stated above, IAWPR was officially founded in 1965 through the Harrogate meeting, where 17 countries were declared founding members **with the overarching organizational purpose related to pollution prevention and controls and the betterment of the aquatic environment.**

However, the *real* start of the organization should probably be attributed to IAWPR's first unofficial congress in London in 1962, (600 delegates from 32 countries). This was followed by a second congress in 1964 in Kyoto , (1200 delegate from 25 countries), and the third congress in 1966 in Munich (1200 delegates from 34 countries). One could say that IAWPR was founded in 1962 and formalized as an association in 1965. Regardless, IAWPR was definitely an organization on the move.

Aims/Purposes

The various specific clauses in the “aims” or “purpose” statements for each organization were generally about research, the exchange of research and practice, knowledge creation and the facilitation of on-the-ground exchanges between professionals at the international level. The founding organizational aims are embedded in the founding documentation for each IAWQ and IAWPR in Appendices 1A and 1B respectively, as reported by the WHO, several years later.

Over time, these aims or purposes evolved somewhat, reflecting both certain challenges met and new challenges arising. Accordingly, each association had phases in which purposes/aims and probably operating philosophies changed. This fact was clearest in the case of IAWPR where its first phase focused primarily on pollution research (IAWPR), followed by a second phase which added pollution control to the original focus (IAWPRC), in 1980. In the final phase, where the association felt it could focus more broadly on a wide range of activities related to environmental water quality, changes its name again to IAWQ, in 1990.

These changes in IAWPR hint at the profound global changes that would ultimately underly the evolution of these organizations and their successor, IWA. Figure One provides a preview of the evolution of IWSA, IAWQ in the context of economic, scientific, regulatory and equity issues on a global scale – an evolution chronicled in the pages to follow. Meanwhile, back to the story.

Figure One

Evolution of IWSA and IAWPR/IAWPRC/IAWQ 1947-1999

1945 1960 1965 1970 1980 1990 1997 2000 2015

International Water Supply Association (IWSA)			
Founded: 1947 Member groups: Standing Committee (9 divisions), task groups			
Geography: W Europe, US, Japan, S Africa -> adding countries; Regional partner (AIDIS)			
Events: Triennial Congress -> Biennial Congresses; Speciality conferences			
Major issues:	Source pollution #1 ->	Enhanced treatment ->	THMs >
Disruptive forces:	Membranes invented	Mass spectrometry	Source pollution #2 (trace organics / endocrine disrupters)
			Digital SCADA
			Membrane desalination

IAWPR				1980 IAWPRC				1990 IAWQ			
Founded: 1962/65 Member groups: Task groups, > 80 Specialist Groups (self-managed)											
Geography: W Europe, US, Japan, S Africa -> adding countries; Partner (IAHR)											
Events: Biennial Congresses 1962-98, Speciality conferences, Regional conferences, Asia Water Quality											
Major areas:	Pollution abatement ->	Wastewater treatment plants ->	Treatment plant optimisation via ASM ->	Basin management / Diffuse pollution							
Key technologies:	CEPT + activated sludge + ponds	Enhanced ASM, N+P removal		MBBR / MBR							

Global influencers in Water Science, Policy and Management											
Major developments	WWII recovery, UN, World Bank, Regional Banks, rising prosperity, strengthening EU	Federal-level environmental management (USA + EU), UK utility consolidation		EU Accession process + implementation, Worldwide utility restructuring under way							
USA / EPA	1948 Water Pollution Control Act	1963 EPA	1972 Clean Water Act	1974 Safe Drinking Water Act	1978/91 Great Lakes water quality	1996 SDWA amendments					
EU Directives				1976 Bathing	1980 Groundwater	1986 Sludge	1992 UWWWT / Nitrates	Water Framework Directive			
UN / WHO			Rio		Decade of Water 1984 Drinking Water Guidelines		1994 MDGs	SDGs			2004 Drinking Water Guidelines

Table One B- The Organizational Foundations – Elements of Dissimilarity

	IWSA	IAWPR/IAWPRC/IAWQ
Overarching Mission	Provision of safe drinking water through efficient and effective utilities utilizing best science, technology and practice	The reduction and elimination of water-related pollution and steadily improve aquatic water quality through research, science and technology
Member Segment	Predominant: Big-city water utilities, national water companies, private water services providers Additional segments: academics, consultants, other	Predominant: Academics (roles: research, treatment design, consulting) Additional segments: National research centers, consultants, utilities, agencies, other
Organization and Execution of Member-Driven Activities	-- Standing committee structure --National committee structure --Formal committee reports were centerpiece of biennial congress >Task groups formed inside of standing committee structure -->Specialty conf's run by IWSA	-- No overarching technical committee structure --National committee structure --Task groups formed freely --1980's forward "Specialist Group" structure adopted >Groups self-defined & managed >Groups responsible for own conf's

Narrative Supporting Table One --Part B

Members and Focus

For the reasons outlined in the introduction, a key difference between the two organizations beyond their differences in overarching objectives, was the fact that IWSA was focused almost exclusively on utilities that produced potable water. In contrast, IAWQ was focused on the means for understanding and mitigating pollution treatment and prevention which only very much later began to resemble the kind of integrated utilities found in the provision of water supply.

According, IWSA's membership were people who worked in drinking water utilities – sometimes in managerial roles (e.g., the utility's first-line directors, working under the utility's managing director, and in other cases in technical and scientific roles (e.g., the utility's WQ laboratory staff).

In contrast, IAWQ's membership was from a more dispersed professional community, typically academics, who were embedded in academic department in universities, research institutes and in general, worked in both the realms of science, research and the science of application.

From these basic differences, many things follow including the means by which contributions were made, conferences were constructed, knowledge accumulated and working groups defined. These different "means of operation" would later frame the debate for how IWA was to take shape following the merger. The most profound impact of these differences was on how the two organizations organized themselves and how they communicated internally and to the outside world.

III The Historic Spine of Both Organizations – Congresses and Presidents

For IWSA from 1949-1984, the congress location and the Association President were closely tied in a kind of package. This changed in 1986, when and after the President and congress location were distinct and the concept of a Congress President was introduced. In contrast for IAWQ, the congress locations and the Association President were for the most part, distinct. In the context of the merger in 1999, two Co-Presidents, both from South Africa, were elected at the Buenos Aires Congress to preside over a two year transition period, as the new organization, IWA, was getting operationally established.

Table Two

IWSA			IAWPR / IAWPRC (80) /IAWQ (90)		
Year	Congress Locations	Association President	Year	Congress Locations	Association President
1947		A Winter (GB)			
1949	Amsterdam	C Biemond (NL)			
1952	Paris	R Brunette (FR)			
1955	London	A Winter (GB)			
1958	Brussels	L Pollet (BE)			
1961	Berlin	K Hunerberg (DE)	1962	London	
1964	Stockholm	B Nillson (SE)	1964	Tokyo	
			1965	IAWPR founded	E Pearson (US)
1966	Barcelona	F Briones (ES)	1966	Munich	
1969	Vienna	K Megay (AU)	1968/69	Prague	G Stander (ZA)
			1970	San Francisco	
1972	New York	F Merryfield (US)	1972	Jerusalem ⁶	
1974	Brighton	L Millis (GB)	1974	Paris	*
1976	Amsterdam	C VanDerVeen (NL)	1976	Sydney ⁸	B Hawerman (SE)
1978	Kyoto	T Ishibashi (JP)	1978	Stockholm	
1980	Paris	G Dejonny (FR)	1980	Toronto	R Engelbrecht (US)
1982	Zurich	M Schalekamp (CH)	1982	Cape Town	
1984	Monastir	A Frih (TN)	1984	Amsterdam	
1986	Rome	J Diricks (BE)	1986	Rio de Janeiro	*P Harremoes (DK)
1988	Rio de Janeiro	W Richardson (US)	1988	Brighton	
			1990	Kyoto	P. Grau (CR)
1991	Copenhagen	H Tessendorf (DE)	1992	WashingtonDC	
1993	Budapest	A Rustad (NO)	1994	Budapest	T Keinath (US)
1995	Durban	P Giacasso (IT)	1996	Singapore	
1997	Madrid	N Hood (GB)	1998	Vancouver	P Odendaal (ZA)
1999	Buenos Aires	see below			
Sept 1999	POST Buenos Aires Congress through the October, 2001 Belin IWA Congress Vincent Bath and Piet Odendaal served as Co-Presidents of IWA				

Narrative Supporting Table Two --The Congresses of both IWSA and IAWQ in Motion

Reference to Table Two above should remind us that each of these organizations were extremely successful in meeting their principle organizational objectives: *Facilitate and promote the global exchange of experience, knowledge, and research, to further their overarching mission.* Spanning 50 and nearly 40 years respectively, IWSA and IAWA brought together the world's leading water professionals on 23 and 19 occasions respectively, involving a conservative total of 70,000 leaders from the community of water professionals.

Although each of their respective Congresses were significant in terms of attendance, industry impact and the personal opportunities that the exchange permitted for the attending professionals, the means by which this exchange was accomplished, were different for the two organizations.

IWSA, being organized based on functional committees based on utility organization, and based on national committees, used their Triennial and later Biennial Congresses as a means of disseminating best practice – first by category of practice based on each of the nine standing committees, and second by geography -- based on reports from the standing committees and national committees.

These reports, called international reports, solicited in advance of the Congress in writing, included abetting and rebutting views. A typical IWSA Biennial Congress devoted more than half of the delegate's time in session to these reports, followed by sessions devoted to papers being presented in sessions, organized around topical themes. Thereafter, there existed a day devoted to a technical tour related to demonstrations of water issues and solutions in the domain of the city in which the Congress was held.

It is important to emphasize that these international reports, coupled with the written record of their debate at the Biennial Congresses, were intended to be the principal vehicle for "best practice" dissemination worldwide and the principal means for knowledge accumulation within the association. Accordingly, the emphasis on journal publications took a smaller place in IWSA's history compared with IAWQ.

This basic structure for IWSA's Biennial Congresses persisted through its tenure, with perhaps higher fraction of time devoted to sessions in the later years – it is hard to deduce from the record.

In contrast, IAWPR/IAWPRC/IAWQ, having no topical standing committees, yet the same national committees, organized the Biennial Congresses differently with a primary emphasis placed on individual paper contributions to the conference which were organized into two journals: Water Science and Technology and Water Research. The Biennial Congress had a far greater share of its time devoted to platform presentations of a subset of submitted papers. The combination of Water Science and Technology and Water Research created significant vehicles for the assembly and dissemination of knowledge for IAWQ. They also formed the foundation of a lasting legacy of publishing within IAWQ that carried over to IWA following the merger.

IV The Evolution of Both Associations Above and Beyond the Biennial Congresses

The question of how each of these associations evolved from their founding, to the day that they merged to create IWA, is a fascinating and almost completely undocumented story. Unfortunately, because there is little written documentation to draw on, the story is schematic and heavily reliant on interviews with the sources underlying this paper.

Significant Influencers in the Associations' Objectives (see Figure One above)

In the big picture, the associations evolved to meet an evolving economic and regulatory environment in the world following WWII. Not to be underestimated in this process was an unprecedented period of peace and global order, which saw reconstruction of Europe, Japan and parts of Asia followed by rising incomes that invariably led to rising environmental standards. The advent of low-cost transoceanic travel made the prospect of global-level collaboration all the more feasible, and the notion of "globally-based-standards" a possibility.

In this context, the emergence of the EPA, the Clean Water Act, and the Safe Drinking Water Act in the US, followed shortly by a series of EU water-related directives in the EU, were clearly the most decisive elements in the shaping: the agenda for drinking water treatment; all aspects of pollution policy and wastewater treatment/management; ground water management; bio-solids management, and in 2000, integrated water management through the EU's ground-breaking Water Framework Directive

The actions of the EU and the US had far-reaching impacts on drinking water safety, wastewater and environmental quality measure and standard worldwide. They certainly influenced the emergence of WHO drinking water guidelines, beginning in 1984, for which IWSA's top members had a significant role. An interesting but impossible question to answer was the extent to which both associations helped inform and shape the regulatory environment in the EU and perhaps the US.

The underlying research and understandings leading to these regulatory regimes spawned groups that focused on solids management, phosphate, nitrogen, disinfection byproducts, oxidants etc, as these issues emerged. They would later evolve into Task Groups in IWSA and Specialist Groups in IAWPRC.

They also led to efforts like the NATO water conferences in the 1970's and emergence of sophisticated modelling efforts in the 1980's, both of which involved deep science. The Particle Separation Group and the ASM (Activated Sludge Modelling) task groups followed and had crossover influences on both associations.

In the meantime, and unique to the organization and management of utilities which was IWSA's area of influence, a global debate began in the 1990's related the question of efficient and effective utility management. This debate included the role of the private sector, the need for consolidation of utilities within countries, and the overall efficiency and effectiveness of utility service³.

During this period, there was a great deal of consolidation in the number of utilities in many of the high income countries outside of the US, with the Netherlands and Australia serving as good case studies.

³ Perhaps this debate was in part spawned by the UK's sweeping decision to consolidate both its water and wastewater utilities into a handful of basin-defined organizations in 1974. These utilities were turned into privately owned organizations in 1989.

Another consequence of this debate was that regardless of public, delegated private provision or private provision of utility services, water utilities were now to be “lean and mean”. In this context, water utilities came to be run as businesses and not public monopolies. The governmental largess shown to national and international organization such as IWSA, were sharply curtailed. Utility leader’s terms were reduced from more than a decade to something closer to 5 year terms. And there was much more regulatory scrutiny applied to utilities, in terms of external activities and travel. These changes in the water utility framework for operations were to have knock-on effects for IWSA, in terms of membership, revenue potential and participation, as we shall later see.

Finally, the emergence of East Asia in general, and China in the post-1980s era in particular, led to more energy devoted by both associations to conferences and other activities in East Asia in the 1990s – understanding that Japan was already a long-standing member of both associations from the beginning of their existence.

Impacts of these Trends on Association Activities Above and Beyond the Biennial Congresses

In the context of the above trends, over time, both IWSA and IAWQ created “task groups” or working groups. These groups soon produced their own specialized conferences above and beyond the biennial congresses organized for each association. The details and timing of the group creations is beyond the scope of this document – in part, because the records of both associations are not fully digitized. Ideally, this documentation should be part of an expanded version of the concise history produced through this document.

The best recorded case of the evolution of a task group was the case of the Large Wastewater Treatment Plant (LWWTP) group within IAWPR, which persisted through the creation of IWA and continues today. Documented by Helmut Kroiss (see Appendix 2), this group focused on the mission-critical task of developing large-scale, reliable, point source treatment plants to meet the emerging advanced point-source imperatives for municipal/industrial waste streams.

The LWWTP group’s activity spawned a variety of related specialty areas, task groups and conferences. In the 1980’s, these focused groups were seen as a significant part of the future for then IAWPRC. Accordingly, Presidents Engelbrecht and particularly Harremoes, sought to formally create the “Specialist Group” structure within IAWPRC. The basic idea was that each group would be self-managed and hold their own conferences, every few years. President Harremoes was insistent on two seemingly contradictory principles: one of self-management (bottom-up) and the other of adherence to IAWPR’s guidelines and oversight (top-down).

As will be discussed below in the context of IWSA’s merger with IAWQ into IWA, this Specialist Group structure developed under IAWPRC ended up being adopted as the backbone of IWA’s method of operation beyond the Biennial Congresses. This backbone was augmented by Specialist Group clusters and programs within IWA.

The Emergence of a Unified EU and Its Impact on Both of the Associations

As stated above, the emergence of a unified EU in terms of environmental policy and regulation was profound, not only for Europe, but as another reference point beyond the US in the rising awareness and regulatory standards being enacted by major players in the world.

In addition, this emerging position marked the beginning of a new set of “players” beyond national associations in IWSA’s and IAWQ’s “front yard”. For example, by the early 1970’s, “a small group of water supply professionals from the original six EEC member states met in 1972 to provide an

opinion on the 4th draft directive on water meters, presented by DG III (industrial affairs) of the European Commission. Following from this initial collaboration and that the EEC was making more legislation on water, these sectoral professionals decided to set up an official association representing their water supply companies. This culminated in the establishment of EUREAU on 21 March, 1975.”

As it turned out, EUREAU thanks to effective leadership of Francis Rillaerts, was committed to its narrow role as influencing EU legislation affecting water utilities and thus IWSA, EUREAU and later IWA operated harmoniously. For example, Heinz Tessorff and Ken Roberts, both legendary figures in IWSA, served as Presidents of EUREAU in the mid 1980’s. In hindsight, a stronger alliance was a major missed opportunity for IWSA in this period.

However, a second organization emerged in 1981 as the European Water Pollution Research and Control Association (EWPCA) – an association which was more of a direct competitor to IAWPR for the attention and loyalty of leading figures within Europe. Several sources to this history have recounted that unfortunate conflicts arose from the creation of EWPCA at the time (the 1980s), but most sources agree that in conclusion, EWPCA did not significantly impact IAWQ’s trajectory and effectiveness.

Expanding the Geographic Reach and Serving the “Missing Members”

From their inceptions, both of associations recognized that largely OECD composition of their membership, while already impressive in scope, did not include significant regions of the world including Africa, Latin America, and Southeast and East Asia. Throughout their existence both organizations struggled with the reality that participation in international activities was not economically viable for either individuals or utilities from many of the low-income countries. Moreover, the discussion of problems and solutions to pressing problems associated with IWSA and IAWQ’s member circumstances, was out of synch with the problems and solution set of “would-be” members in the developing world. On top of all this was the challenge of languages.

In the background, the UN’s Rio de Janeiro Conference on Development in 1972, the declaration by the UN a decade later of the water decade, and the Johannesburg Water Summit in 2001, focused attention on the crisis of water supply and sanitation in developing countries, and the resulting powerful slogan “water is life”. At this time, the Millennium Development Goals were adopted, which framed the development agenda for most of the next 15 years.

Against this background, but largely motivated by member’s wish to advance practical solutions to the provision of water and sanitation in developing countries, arose the ongoing development of strategies and efforts for serving the “missing members” of both organizations. Two meaningful strategies emerged from these discussions: regional partnerships and regional conferences.

From IWSA came the approach of forming lasting partnerships with those regions that had some existing organizations. The best example of this was when IWSA developed long-standing relationships with AIDIS in Latin America.

Akin to the approach used to Latin America, was the creation of ESAR, the Eastern and Southern Africa regional arm of IWSA, representing a major step further in the process of regionalizing IWSA's offering. Established through the leadership of Vincent Bath and Rand Water, ESAR attempted to regionalize IWSAs offer in twelve southern and eastern Africa countries including workshops, conferences and technical exchanges. (This effort was much later allied with the newly created Water and Sanitation Program, initiated by the World Bank, and led in the ESAR region by Piers Cross). It was an example of the kind of regionalization envisioned by IWA following the merger.

The third example, COCDEV was an India-based partnership with IWSA that gave rise to the IWSA Foundation for the Transfer of Knowledge. No documentation for this partnership is readily available today.

The second strategy involved the creation of jointly-run regional conferences in areas outside of IWSA core membership – a strategy that proved to be successful over time for IWSA. The first example was the creation of a UADE-UWAS conference series, initiated under the leadership of IWSA President Dejouany, and coordinated through SODECI (Cote d'Ivoire national water utility). A second example was the IWSA ASPAC conference for the Asia Pacific Region.

IWSA's initiative in the Asia-Pacific regions gave rise to a parallel initiative by IAWQ in the Asia Pacific Region, "Asia Water Quality".

These regional conference series built a sense of belonging to both organizations for individuals that did not have the means to attend the Biennial Conference, or Specialty Conferences in Europe, with added benefit of a more regionally-tailored-offering.

Reflections on the Missing Member Challenge During this Period

The cases cited above represent only the remembered examples of hard-fought efforts by all involved to extend the scope and influence of both IWSA and IAWPR to address the pressing needs of development. What seems to be the lesson from all of this, is that true joint-ventures for development did not survive in the period, although at least some of the regional conference programs did. For example, IWSA's ASPAC and IAWQ's ASPIRE were combined into the ASPIRE conference series following the merger, significantly through the leadership of IWA President Tambo of Japan, and live on today to be prominent features in the Asia Pacific landscape of water professionals 29 years later.

The whole issue of missing members and the response of these Associations will be revisited below in Part Two of this history, in the post-merger context

Relations and Partnerships with Allied Organizations

As time passed and water became a bigger and bigger issue worldwide, a number of new organizations/conference series/awards developed. Prominent among these was initiation of the Stockholm Water Prize and Symposium in 1991⁴, the creation of the World Water Council in Marseille, and the advent of the World Bank's Water Week. In general, these organizations/events were complements to IWSA's and IAWQ's offer and thus were worth developing close relations with.

⁴ Since its creation in 1991, a number of IWA and its predecessor's most prominent figures have been awarded the Stockholm Water Prize, including Paul Harremoës/TU Denmark, Takashi Asano, Peter Wilderer, Perry McCarty, Joan Rose, Bruce Rittman/Mark van Loosdrecht.

In this context, on the world stage IWSA, IAWQ and later IWA were viewed as large and “solid” associations of water professionals, amidst a growing cacophony of internationally focused, water advocacy NGOs.

At the same time, the long standing and formal partnership between IAWQ and the International Association of Hydraulic Research (IAWR) from which a joint journal was established (Journal of Hydroinformatics), was augmented by close working relations with other hydrologically oriented bodies. Prominent in this development was a close association with UNESCO-IHE which expanded to include Urban Integrated Water Management topics.

According to Paul Harremoes, one of the significant missed-opportunities for IAWQ during this time was the failure to bring ground water into the working scope of IAWQ. Ideally, this could have been accomplished through a partnership with a leading ground water association – at the time, there was no suitable organization available to meet this challenge.

The “Lay of the Land” for IWSA and IAWQ in the Mid 1990s

As the two organizations looked back on the successes and challenges in the mid-1990s, one can get a feeling for their thought process from a limited supply of written documents.

IAWQ celebrated its 25th anniversary in 1990 and put together a very informative piece for the magazine and accomplishment and important philosophical lessons in their development. The article -- a “must read”, is attached in Appendix 3b. What stands out in reading this article are two things: the level of optimism in the tone of the article, and second, the emphasis of IAWQs mid-life discovery of the power of the Specialist Groups in advancing the aims of the Association.

All of the discussions with those that led IAWQ in the development of this document state the same – the game-changer in IAWQ’s evolution was the discovery and implementation of the Specialist Group way of organizing member-led activities.

The documentation of IWSA’s 50th anniversary in 1997, provides a stark contrast between the mood and focus of IAWQ and that of IWSA, which can only be inferred from the proceeding of a conferences held to commemorate the anniversary (Appendix 3a). Perhaps the reality of the merger and the changes ahead dominated peoples thinking at that time.

Regardless, of the mood of both organizations referenced above, at the time the merger negotiations were underway following on the heel of the anniversary events, a number of realities were self-evident. They included:

- For IWSA, the organization needed to face the new realities of the water utility industry and the relationship that large utilities and professional associations shared, like IWSA, which had moved from being central to “optional” in their everyday business.
- In addition to these facts, many countries worldwide had or were intending to integrate drinking water and wastewater utilities by the 1990s. IWSA changed its name to the International Water Service Association to open the door to this reality, but stepping into wastewater would be a big step for a 75 years old water supply organization.
- For IAWQ, the mission of Water Quality had matured beyond an exclusive focus on research, control/regulation and needed to begin to embrace the rapidly emerging reality of mature, large, vertically integrated wastewater utilities – far beyond the focus on treatment technologies as in the past.
- For both IWSA and IAWQ, the hard lines between what was safe and potable water and what was “used water” needing to be treated to protect the environment were obviously going to dissolve in the coming two decades. How could each or both organizations adapt to what was to come?

In summary, both organizations faced an imperative to create a new chapter in their significant histories.

As apparent as some of these points are in hindsight, stepping into their next chapter was far from obvious to both organizations, and may serve to introduce the next part of story that this document portrays.

V. The Merger of IWSA and IAWQ Leading to the Creation of IWA – 1996-1999

The Beginning of the Process

The discussions about a merger of the IWSA and IAWQ began in 1996 and were concluded in 1999. Given that the two organizations shared a common space in London for a number of years, it has been said such a merger had been contemplated for years.

In the end, the negotiations regarding the merger took place through what eventually became called the Merger Coordinating Group (MCG). According to a column written in the June, 1999 in the 2nd issue of the newly developed IWA Newsletter (see Appendix 4), Piet Odendaal, then President of IAWQ said:

“In the first issue of the first issue of the IWA newsletter, Nick Hood, President of IWSA set the scene for the imminent IAWQ/IWSA merger. Since then, a last meeting of the merger coordinating group (MCG) was held in London, 12-13 May 1999, to do the final fine-tuning. The formal inauguration of IWA will be end July 1999, and the public launch at the opening session of the World Water Congress in Buenos Aires, 20 September 1999. So, the die is cast, and the process can no longer be stopped”.

President Odendaal goes on to say: *“I believe that the advent of IWA is indeed an exciting development in the global water sector. I say this for three reasons: It confirms and consolidates a trend that became manifest over the last decade or so, namely a more integrated approach towards urban water management. The combination of clean and dirty water issues in a single international association is a major step towards accelerating the process.*

IWA can actively promote research and field testing of integrated approaches and the exchange of relevant knowledge and experience. This will be facilitated by the greater degree of interfacing between research and practice in IWA, compared to its two predecessor organisations.

Through representing both clean and dirty water issues, IWA will be better positioned than either IAWQ or IWSA separately, to transfer knowledge to developing countries, particularly working in partnership with international agencies.”

The merger was finalized at a signing “get-together” that took place at the Stockholm Water Week in August 1999. (See Appendix 4 for President Odendaal’s newsletter article and a picture of signing). In the merger, IWSA and IAWQ were officially concluded, and a new association called IWA created – all under UK Charity Law.

As promised, the rollout of merger was announced in the final IWSA-style Congress in November 1999, in Buenos Aires. As discussed earlier, this Congress was developed in conjunction with AIDIS Argentina.

At some point in the merger process, a new Executive Director of IWA was designated as Tony Milburn, formerly the Executive Director of IAWQ since 1982. Tony Milburn was the successor to this position after the death of Sam Jenkins in 1982, who had served as both the chief editor of the Association’s journals and de-facto Executive Director of the Association since its inception in 1962/1965 .

Also decided at this time was the designation of Mike Slipper as the Deputy Executive Director of IWA, who had served as the Executive Director of IWSA since 1997. (For the record, Mike Slipper succeeded Len Bays, who served as Executive Director to IWSA from 1983 to 1995. Bay's predecessor was Leonard Millis, who served as IWSA's first Executive Director. (The details on Millis are unclear from the records).

Also planned through the merger process were new leaders, the overlay of Biennial Congresses and a new structure for IWA. There was to be two co-presidents, Piet Odendaal and Vincent Bath that would serve from 1999 to 2001, followed by Norihito Tambo, who would serve from September 2001 to mid-2003, followed by Michael Rouse who would serve between mid-2003 and September of 2004. Thereafter, the biennial schedule of the new organization would continue post 2004.

The Congress schedule for the IWA was a July 2000 Congress in Paris (organized under IAWQ traditions), an October 2001 Congress in Berlin (organized under IWSA traditions), and an April 2002 Congress in Melbourne (organized anew).

Also planned through the merger process was a new member leadership structure for IWA, which included a Scientific and Technical Council (STC) and a Management and Policy Council (MPC). In addition, two subsidiaries to the new Association were created: IWA Publishing (IWAP), which would take over journal, book and magazine publications from the previous associations, and the IWA Foundation, which was to be a donation-based vehicle in support of development activities (akin to Water Aide).

Apparently unforeseen in the merger process, was the importance of reconciling many of the basic operating devices of the predecessor organizations including Biennial Congress organization, task and specialist group structures – in other words, how the member interacted and communicated.

PART TWO POST-MERGER OF IWSA AND IAWQ

Creating the new IWA in the 2000 → 2015 Period

I Introduction

Part One of this report was all about two organizations that were pioneers at their inception but had matured, and that in the case of IAWQ had evolved considerably. As we saw in Part One and Figure One, as these associations matured, so did the external environment in which they were operating.

Part Two of this report is about the creation of a truly new organization to succeed, and to amalgamate and further the missions of its predecessors, IWSA and IAWQ.

In hindsight the task of creating the new IWA was a far bigger one than probably any one of the IWSA/IAWQ Merger Group members could have anticipated. Again in hindsight, this is because of extraordinary changes taking place in two realms: 1) in the external environment that both Associations worked within, and 2) because each organization needed to evolve every 20 years or so, as Paul Harremoes had accomplished within IAWPRC in the mid-1980's. Whether or not the merger had occurred, major change was in the future in 2000.

In short, the last 10-20 years of IWSA and IAWQ's existence was a period of a rapidly changing marketplace for roles, relevance, membership and revenue streams for any and all membership-based water organizations operating in the international space --- including IWSA and IAWQ.

II Following the Merger -- Getting the New IWA "Up and Running"

The creation of IWA represented an opportunity to address this noisier and more competitive world in a way that the IWA's predecessors had not. At the same time, the creation of IWA offered the opportunities to take advantage of emerging trends in reuse, utility performance management, the multi-faceted impacts of climate change.

In this period, the new IWA was in operation at its new Caxton Street headquarters in London. In theory, the new organization had been defined through the merger process and was ready for full-speed operation. It needed to be, because the new organization was facing three full-scale World Congresses in a three-year period (Paris 2000, Berlin 2001, Melbourne (2002) – more on this below.

Around the time of the first of the post-merger conferences in July 2000 in Paris, based on extensive interviews with Tony Milburn and Mike Slipper in June, undertaken by Paul Reiter⁵, many of the members were voicing broad based concerns about the merger, unsure of which version of an "operating system" had been decided in the merger.

In one sense, this was predictable, given that IWSA and IAWQ had different overarching missions, had different primary members, and different operating style – to generalize, IWSA more top down, and IAWQ more bottom-up.

⁵ Beginning in the summer of June, 2000, Paul Reiter was seconded to IWA from the City of Seattle. He later joined IWA as a full time employee in Jan 2001 in a new position, IWA Programmes Director.

More specifically, and a subject of genuine concern to IWA's new management, was the deep-seated primary concern being expressed by members whether the IWSA and its operating style had taken over IAWQ, or vice-versa⁶.

Arising from these circumstance, IWA's new management agreed there was a problem, and committed to organize what turned out to be seminal "gathering of the tribes" in Windsor, greater London in May of 2001. All of the Specialist Group leaders, STC and MPC leaders and key representative of member segments otherwise not represented were part of this "mission-critical" two-day meeting.

The Windsor Meeting of 2001

What resulted from the assembly of the members in Windsor was an extraordinary sharing of ambitions, feeling, experiences and hopes of the members, unhampered by formalities and positional posturing. Through the two days of workshop sessions and the dinner and follow-on discussions, it was exceptionally clear how different the working styles and organizational structures of IWSA and IAWQ were. At this point, we ask the reader to recall the nature and reasons for these differences that have been described throughout this paper.

On the first day and only a few hours into the meeting, it emerged that there was indeed a classic clash of cultures. The problems identified immediately after the merger in 2000 were real. But in short order, the attendees realized and began to voice mitigating steps and long term solutions to the significant differences that existed, and could be implemented through the joint resolve of the members, their leaders and management.

Coming out of an intense two-day period, the members present, representing all corners of the two previous organizations, were committed to make the "new IWA" work – a successful and viable instrument for the future. In hindsight, it seems this was the beginning of the future.

One of the main messages that emerged from these discussions was that different member segments – utilities, academics, industries, consultants and development interests should each be able to continue to operate in the new organization using the style and tools they were comfortable with. Metaphorically speaking, the new IWA was not a melting pot but rather a mosaic of interests.

In this spirit, members from both sides of the merger were committed to a so-called "1+1 =3" success. The meeting ended by all accounts, as a great success. That said, however, there was a feeling on everyone's part of impatience -- IWA needed to deliver on the future. The clock was ticking.

⁶ Organizational scientists have documented how mergers can easily become contentious in the absence of thorough and abundant communications and face-to-face engagement processes – both of which are very challenging to accomplish in international organizations – and particularly so, in advance of the merger.

III 2001-2002 --Defining, Strategically and Operationally Planning the New IWA

After the pivotal meeting in Windsor, IWA needed to refocus on the two major tracks simultaneously. The first track was defining the identity, future, operational components and financing of the new organization moving forward. The second track was ensuring the success of the two Congresses on the horizon some believed would foretell the success of the new organization. The simultaneous nature of both of the mandates, was extremely challenging for the new organization.

The Initial Stages of IWA's First Strategic Plan

We begin the story with the first of these two tracks: developing a bottom-up strategic plan for the new IWA – a plan that drew heavily on sentiments and conclusions from the Windsor meeting.

These steps included:

1. the development of a draft vision for the new IWA;
2. a “gap” analysis that identified areas where gaps existed between the combined capabilities inherited from IWSA and IAWQ and where IWA wanted to be in 4 years time; and
3. a financing plan that drew partly from the Association's ongoing revenues, partly from the Association's reserves in the short run, and afterwards expanded revenues from IWA activities.

In parallel, a review of the organizational structures that were specified at the time of the merger was undertaken – again in light of the understandings that emerged from the Windsor meeting.

From this effort, organizational structures proposed for IWA moving forward were the creation of four member-based leadership counsels/committees, and the dissolution of the Scientific and Technical Council and the Management and Policy Council.

The four council/committee proposal included:

- Retention of the National Committees unchanged;
- The creation of a Strategic Council (see below);
- The creation of recurring forums for the Specialist Groups to interact and communicate with HQ;
- The creation of a standing Program Committee for the Biennial Congress (formerly managed in both predecessor associations by the STC with ad-hoc committee created for each Congress).

The Strategic Council was designed to continue forward the broad-based representation of all the segments of IWA's membership: researchers, utilities, industry, consulting, low-income countries. The Strategic Council's job was envisioned to encompass two roles. One was to serve as a sounding board for significant direction setting or major initiatives that the Association's Board of Directors were considering. The second was proactive – to sense, respond and propose ideas central to the Association's betterment.

The Program Committee is briefly discussed below in the context of the 2002 Melbourne Congress.

Finally, the National Committees and their historical roles, which were very similar in both IWSA and IAWQ, were continued. These roles included electing the Association's Presidents and Vice-Presidents, endorsing appointments of the Association's Treasurer and selecting the locations of the Association's next Biennial Congresses. (As we shall later see, the role of the new IWA's HQ office in due diligence, narrowing and the presentation of viable alternatives for future congresses were dramatically revised compared to either of the predecessor organizations.)

Meanwhile, Three World Congresses in 18 Months

Paris July 2000

The rollout of the new IWA to the world occurred in the form of IWA's first Biennial Congress in Paris in July, 2000. Technically speaking, the congress had been organized as an IAWQ style congress with a twist – it was jointly run by the International Solid Waste Association, and so offered both water and waste content. The Congress was a success in technical and professional terms. The highlight of this event was the Gala Dinner, which was delivered at the Louvre (downstairs). On this occasion, the Congress President Dennis Ballay, had persuaded the management of the museum portion of the Louvre to open it for a portion of the evening exclusively to persons involved with the Congress.

Berlin, Oct 2001

The last of the new IWA crossover congresses took place in 2001, which was originally planned as the IWSA/DVGW Biennial Congress. It was to take place not just in West Berlin, but in the post-1989 "new Berlin". The Association's meetings were scheduled to occur at a hotel at Potsdamer Platz, the old border between East and West Berlin. The organization of the congress was a half-step to the new architecture of an IWA Biennial Congress. The Congress was very successful by many measures.

Melbourne, April 2002

It is fitting perhaps, that the first "completely-new" IWA's WWC took place in Melbourne, Australia in 2002, a new world city. The Congress was organized under the leadership of David Garman, later to be both Vice President and President of the new IWA. A dedicated program committee, comprised of top individuals from the membership, and a strong and capable chair, Helmut Kroiss, worked in partnership with the IWA Programs director in London to design the technical program. The program committee thus constructed, became a standing committee that was successfully used for all subsequent congresses, ensuring both quality and continuity across many WWCs.

The way the congress was organized and the way the program for the congress was designed was the first "full step" in the new architecture of an IWA Biennial Congress. This included an entirely new and impressive graphical look for IWA that was possible only because of support from John Batten and his team at Malcolm Pirnie. The 2002 Melbourne Congress was a resounding success by all measures and became the benchmark against which subsequent Congresses were judged⁷.

⁷ Analysis of the organizational success of the Melbourne WWC, led to a decision to professionalize and standardize the management of the Association's biennial congresses under the ultimate direction of the Executive Director. A team was developed, led by Margaret Bates who managed the 2002 Melbourne WWC. This team was used successfully from the 2006-2012 WWCs. An exhibition team was developed in parallel under the leadership of Roy Agterbos.

The Deliberation and Adoption of IWA's First Strategic Plan for the 2002-2006 Period

In parallel to the 2002 Melbourne Congress were a complete set of member and business meetings for the Association. Adoption of the proposals for IWA moving forward by the Governing Bodies of IWA at the Melbourne, 2002 business meeting, set the stage for a flurry of further actions that strategically defined the new IWA, provided the means for the new organization to add staff and programs to meet the challenges outlined above, and articulated a strategy for financing the new organization in the short and longer term.

Highlights of the pivotal and determinative actions, meetings and Congresses that occurred during the transitional years that 2000-2003 represented, are outlined in Table 3 below.

Table Three A Chronology of Events in the IWA's Startup Phase 2000 -2003

Time Period	Item/Event/Issue	
Jan 2000	IWA open for business in new HQ office on Caxton St, London	
Jul 2000	<u>1st IWA WWC in Paris;</u> Louvre reserved for one evening for Congress participants	
May 2001	<u>Historic IWA Windsor meeting</u> occurs in which all leaders and member segments of both IWSA and IAWQ were included	
Summer 2001	Strategic plan elements developed Also organizational revisions proposals developed	
Oct 2001	<u>2nd IWA WWC in Berlin;</u> Professor Norihito Tambo assumes Presidency First IWA Utility Leaders Forum	
Oct 2001 Assoc meetings	Strategic plan elements and organizational revisions endorsed at Berlin association meetings	
End of 2001	Mike Slipper retires;	
Jan 2002	Tony Millburn announces retirement effective Apr 2002	
Jan-Mar 2002	Search and screen for new Executive Director Reiter selected as new Exec Dir; Mark Pascoe as Deputy Dir	
Apr 2002	<u>3rd IWA WWC in Melbourne;</u> New IWA branding and communications introduced Paul Reiter assumes Exec Director position effective May1 Second Water Utility Leaders Forum	
Apr 2002 Assoc meetings	1 st IWA Strategic Plan for the period 2002-2006 endorsed. Action items listed in Table Three 2002-2006 section below Strategic Council and Specialist Groups Leaders meet for the first time	
Mar 2003 Assoc meetings	<u>Meetings in Nara/Osaka</u> in parallel with 2 nd World Water Forum Michael Rouse assumes the IWA Presidency D Garman elected VP IWA regionalization initiative and IWA Outreach Program unveiled and adopted Continuing cleanup to IWA Constitution and Bylaws	
Sep 2003 Assoc Meetings	<u>Meetings in Prague</u> Laszlo Somlyody elected IWA President effective Sep 2004 (Marrakech) Finalization of outstanding 2001-2002 issues	

IV. The 2003-2006 Period - *Adaptively* Implementing the 2002-2006 Strategic Plan

Perspective on the first two years of IWA.

From a content, relevance and communications perspective, the new IWA might be seen to have had an advantage by virtue of its legacy, but it nonetheless had a steep hill to climb to be seen as “leading edge” organization in terms of content, and in terms of the need to be viewed as competitive in relevance with the proliferation of water association at the national, regional and international level in early 2000’s.

Reference to IWSA and IAWQ jumping off points in 2000, was a start in this process of defining IWA’s mission and vision. Reference to what other organizations offered to IWA’s core membership provided another perspective. And a view to the future and what were to be the cutting-edge topics of the future that were aligned with IWA’s membership and strength served as a third perspective.

Added together, these perspectives provided a part of the vision of what the new IWA could be, wanted to be and needed to be – in other words, the “what”. The Windsor Meeting provided a vision of the “how” of the new IWA -- how IWA members wanted to work together to get there.

Together, these considerations formed the basis for the first 2002-2006 IWA Strategic Plan which required presentation, deliberation and ultimately a green light for implementation across a 2001-2003 series of Executive Committee and Board of Directors meetings in Berlin (01), Melbourne(02), Osaka(03) and finally Prague(03).

In this context, and with the benefit of extraordinary leadership from IWA’s new elected and appointed bodies, the Melbourne meeting in April, 2002 served as the starting flag and by the time of the IWA Spring Meetings in Japan, 2003, the new organization was already engaging at full strength in this implementation of initiatives, actions, and programs. This section of the history report seeks to characterize this frenetic and very eventful period in IWA’s maturation.

The 2002-2006 IWA Strategic Plan

To be clear, at this early point in IWA’s existence, the organization needed to do a lot of building to meet multiple needs and opportunities. It started out with no outside investors, a limited staff and an unsure revenue stream. In this context, the 2002-2006 Strategic Plan needed to be an adaptive one, which it was. In this context, the plan was like a water system master plan, phase one.

The plan laid-out what was intended to be accomplished over the longer term, and a description of the first phase of this long term picture between to be accomplished between 2002 and 2006. It then described the major actions to be implement during the 2002-2006 time period, and an approximate more detailed time frame for implementation.

This four year planning framework, with year by year operational plans, served as a guiding force in IWA’s post-merger success. This was so because it provided both a vision-based roadmap of activities, that was mutually agreed between the President, Executive Director, the Board of Directors and the Governing Assembly and an operating manual with annual adjustment for how the organization was to be run.

Table Four - Additions and key accomplishments under the 2002-2006 Strategic Plan

Programs	Specialist Groups and Task Groups	Policies	Events/Publications
IWA Young Water Professionals Program initiated	Continuing rationalization and reconciliation of member groups; "IWA Utilities" created	Strategic Regionalization policy adopted; next step beyond regional conference strategies enacted under IWSA/IAWQ regime	1 st IWA Leading Edge Technology (LET) Conference held in the Netherlands in 2003. (Full series in Table 6)
IWA "Outreach" Programs for professional assistance to developing countries through member participation; (Replaced IWA Foundation, where vision for external funding was not realized).	Member-based WWC Program Committee fully functioning to deliver a robust program design in Marrakech with strong links to HQ. Include first full-strength workshop program	Renewed focus on membership retention/recruitment. Elimination of complementary membership with WWC registration/attendance for non-members.	New IWA Journals established in this period: >Water Supply >Water & Health Publications: >Water Utility Mgt Int'l >Asset Mgt Int'l
IWA Climate Change Adaptation Program initiated; Connections made with US-AMWA , World Bank, Stockholm	Devoted Specialist Group and National Committee support staff added in the HQ	Two tier membership fee structure for high income and lower income countries; later Small Corporate rate added	4 th IWA WWC in Marrakech, Morocco September, 2004 Laszlo Somolyody new IWA President
IWA Global Project Innovation Awards Program	1 st post-Windsor Specialist Group Forum in Maastricht, NL	Recognition and awards program re-evaluated and expanded; new award categories added	Active engagement with IWA Eastern & Southern Africa (ESAR)
IWA World Water Monitoring Program co-established with WEF		Complete revamp of WWC selection and management process post-Marrakech 2004	IWA Asia-Pacific Region (ASPIRE) created + 1st ASPIRE Conference held in Singapore, 2005
IWA Drinking Water Safety Plan Program established with WHO		Constitutional change permitting IWA Presidents to serve a second 2 year terms. Effective 2006->	First IWA Regional Office established in Beijing; discussions initiated with Asian Development Bank
IWA HQ support for the formation and publication of the Global Water Research Coalition (GWRC)	By 2006, total number of Specialist Groups at 50+; 34 Specialist Group/Specialty Conf's with 7000 participants	New IWA WWC Congress Sponsorship Framework established adding third revenue stream to IWA	5 th IWA WWC in Beijing, September 2006, 3000+ attendees; David Garman new IWA President

During this period, Mark Pascoe, Deputy Director to IWA beginning May 2002, resigned December 2004 to take over the IWC in Queensland, Australia. Tom Mollenkopf, later Vice President and IWA President, became Deputy Director to IWA in the first quarter, 2005 and left to become the Australian Water Association's CEO in mid- 2007. Both were central to the huge undertaking that represented IWA's build-out during this crucial period.

In addition to the activities undertaken through the 2002-2006 Strategic Plan summarized in Table Four above, there were ongoing improvements undertaken throughout this period in the basic management systems and procedures that were used to run the HQ Office in London. Examples include accounting, membership management, financial controls and auditing, recruiting and personnel management, etc).

But before leaving the 2002-2006 period, it important to include a brief description of the impact of the pivotal 2006 Beijing Congress on China and IWA. In 2002, IWA had less than about 50 members in mainland China. Preparing for the 2006 WWC involved a great deal of engagement in China including opening an office in Beijing.

China's Ministry of Construction (MOC) took over the role of the local sponsor for the congress with the result being that the IWA WWC was elevated to a major event in China. IWA engaged with MOC to ensure the success of the congress. In the runup to the congress, the MOC developed major policy changes related to water research in urban China and associated changes in the funding of research in future years. And the MOC planned major side events alongside the IWA WWC formal program.

The Congress was a major success in and of itself, but in the bigger picture, the 2006 Beijing WWC was a major contributor to IWA global expansion and regionalization in Asia, which is one of center-pieces to the next period discussed below.

V. Shaping a Maturing IWA through the 2007-2012 Strategic Plan

By 2007, the IWA had matured into a stable, and visible organization representing water professionals and their aspirations for interaction and knowledge creation, in line with the hopes behind the IWSA and IAWQ merger in 2000. It had a string of promising biennial congresses ahead (Vienna (2008), Montreal (2010) and Busan (2012), a portfolio of members groups, programs, events and publications to meet the rapidly emerging issues of the day.

At the same time, and in hindsight, IWA was again facing a rapidly changing world, as had been true for its predecessors at the time of the merger. The water agenda had both expanded into a global concern about access to water, a growing awareness of what ironically was IAWQ's core agenda – the need for integrated water management, and niche agendas and organization of all “stripes”. This environment gave birth to the World Water Council in France, the Global Water Partnership in Sweden, a resurgent set of organizations in the World Bank and UN families⁸.

And in the background, the internet had arrived, the membership model was nearly dead, yet the power of convening events that attracted nearly 10,000 professionals per year was very much alive. In short, members or instead, participants --in the five-decades old IWA's offer of collaboration, invention and solution development to water professionals – IWA was still a significant force in the expanding water agenda. It just needed, as in previous decades, to be shaped to meet the needs of the day,

⁸ Technically speaking, the WWC and the GWP came into existence in the mid-1990's, were propelled by the 2nd WWF in The Hague coupled with the declaration of the Millennium Development Goals, but came into full force in the early to mid-2000's.

The IWA 2007-2012 agenda rose from a combination of its ongoing maturation and the emerging global agenda:

- The new basics -being a home for 10,000 water professionals in over 110 countries around the world, working bottom-up on solutions through innovation on a number of pressing water issues like IWRM, climate change adaptation, reuse, diffuse pollution, performance measures – issues that spanned drinking water and waste-water utilities;
- Stepping up to new roles as a resilient and articulate spokesperson on the world stage for water professionals; and,
- Learning how to effectively partner with other global and large national organizations.

The additional challenge was that IWA, like its predecessors beginning in 1947 in IWSA and IAWPR in 1962, needed to find a means of achieving financial stability and integrity in doing these things without national or international subsidies, unlike a number of aforementioned organizations. Accomplishing all of these objectives simultaneously was challenging, but in the end, IWA responded well.

During this period, IWA benefited from David Garman's four-year presidency from September 2006 at end of the Beijing WWC through the end of the Montreal WWC in September, 2010, which marked IWA's 10 year anniversary. David was succeeded by the capable leadership of Glen Daigger, who also served a four year period from 2010 to 2014.

The highlight of the 2007-2012 period for IWA and corresponding 2007-2012 Strategic Plan reflected many of the above considerations as well as continuing programmatic and development threads from the 2002-2006 plan.

The Move of IWA Operations to the Netherlands

IWA and its predecessors had been based in London for a very long time. As the UK evolved and London became one of the world's prominent financial hubs, "water" in a domestic political sense, was far from the minds of the UK government. Moreover, due to the wealth generated by the financial sector, London had become one of the most expensive cities in the world – a real challenge for a non-profit Association needing to pay rent and compete for promising graduates in the labor market.

Recognizing all of this, leaders in the Dutch membership of IWA, led by Theo Schmitz, proposed that IWA move to the Netherlands. The Dutch government, their academic and research institutions and citizenry were and are intensely conscious about all aspects of water. As a city, The Hague was positioning itself as a home for international organizations and was genuinely enthused about the prospects of an IWA move. Costs in The Hague were approximately 1/3 lower than London, the labor market more accessible and in general, the location offered increased accessibility to European members. And finally, the Dutch proposal came with some financial support over a five-year period to ease the transition.

After considerable debate related to the preferences of the London staff, finance and legal considerations, a decision was reached within the Board of Directors to leave the IWA's legal and financial headquarters in London, move the operational base of the Association to The Hague, and leave IWA Publishing in London. Ed Hulshof, who was also IWA's longest serving Treasurer, managed this transition and ensured that the process was virtually seamless, in spite of the many challenges that are associated with moving across countries and cultures.

In 2007, the operational headquarter were up and running in the new Hague offices. As had been hoped, the Dutch warmly greeted IWA, and helped set up strong connections with TU Delft, IHE, IRC and key ministries. The overwhelming majority of the operational staff (eight employees and the Exec Dir) relocated to the Netherlands. A new era for IWA was launched.

Regionalization

After the challenging but very successful Beijing WWC in 2006, IWA established a permanent office in Beijing hosted by the Chinese Academy of Sciences in Beijing. At the same time, IWA was further expanding its Asia-Pacific Program. The former ASPAC regional group under IWSA and the Asia Water Quality group joined forces under the leadership of Professor Tambo of Japan, to form the new ASPIRE group.

ASPIRE which included most of the SE Asia countries, Chinese Taiwan, South Korea and Japan worked in two capacities: to establish an ASPIRE conference series; and to help guide the development of programs and activities in the ASPIRE region.

With the help of the ASPIRE Council and a strong partnership with Singapore's PUB, IWA opened an office in Singapore to help coordinate and promote activities in the ASPIRE region. This action, in turn, helped facilitate stronger ties to the Asian Development Bank, the co-development with Singapore of the conference-side of the new Singapore Water Week, and host of other tailored activities in the region.

In Africa, IWA's meaningful early work with ESAR was seen by some to be competitive with the African Water Association, particularly in the context of Water Operator Partnerships in Africa, an effort that both IWA and UN Habitat were promoting for strengthening utilities through mentoring. A historic meeting was held in Senegal in 2010, where leaders from different parts of Africa came together with IWA leaders, facilitated by Jan Janssens of the World Bank. The result was a unified IWA regional program for Africa, with potentially similar synergies to that accomplished under ASPIRE in the Asia Pacific Region. In the context of this development, IWA's first office in Africa was established in Nairobi in 2009/2010.

Key Member and Programmatic Activities

With whirlwind of startup activities during the 2002-2006 leveling off, the Association could now turn its attention to a significant element of overdue business – recognition of long-standing members and their contributions both to science and practice, but to the Association itself. As was stated previously, the “investors” in a non-profit association are the members, who make their contributions through voluntary service.

In this context, discussions about the establishment of an IWA Fellows Program began in earnest in 2008, and by 2010, the first tranche of IWA Fellows were in place and meeting in at the Montreal WWC in 2010. In 2013, IWA's other body for recognition of top IWA professionals, the Council for Distinguished Water Professionals, was integrated into the Fellows Program through the creations of the Distinguished Fellows Group. The Distinguished Fellow and the Fellows Group have served up to the present day as an essential element of IWA's member-led foundation.

Related specifically to IWA's utility members, in the middle of the 2007-2012 period, it was felt that the European Utility members could benefit from an IWA European Utility conference series. The first of these was held In Maastricht in the Netherlands, with significant help from the Dutch utility community. It was deemed a success and this series continued as a component of the IWA Utilities Program.

Typically speaking, it noteworthy that during this 2007-2012 period, one could begin to see the rising membership interest related to reuse, anaerobic digestion and diffuse pollution – all topics that were envisioned in the merger talks leading to IWA nearly 10 years earlier.

Serving the Needs Outlined in IWA's Ongoing Development Agenda

Following on from the inception of IWA's Outreach Program which was rebranded as IWA Development Solutions in 2006, that supported the largely "missing members" in IWA's overall mission – came the realization that it was almost impossible to use the traditional biennial congress to meet the needs of both the developed and developing countries.

Accordingly, and after a lot of thought and planning, a new IWA Biennial Congress series was launched – focused entirely on the needs of emerging economies and their water needs throughout the world.

The first of these this new series of development-focused congresses, now called the the IWA World Congress for Development (WCDE), was held in 2009 in Mexico City, followed soon thereafter Malaysia in 2011 and later Nairobi in 2013. (See Table Six below for the full series). With its historical biennial congress series in the even years and the new development focused biennial congress series in the odd year, IWA was finally able to partially meet the goal of inclusivity that had been talked about since the formation of IWSA in 1947 and IAWPR in 1962. See Table 6 below.

Complementary to the WCDE biennial congress series, was the development of a DEWATS conference series in the ASPIRE regions. DEWATS stand for Decentralized Water and Sanitation systems. This series emerged from collaboration with the ADB and the Gates Foundation. At the same time and with the same set of objectives, IWA Water Operator Partnership Program was launched in both Asia and Africa, discussed above.

Cities of the Future Program

Finally from a programmatic perspective, came an initiative from some of IWA's most sophisticated academic and practitioner members: how to address the reality that cities are planned first and equipped with water infrastructure second? Among these members and a leader in this effort was Kala Vairavamoorthy, who would later become Executive Director of IWA. The question resulted in a soul-search for IWA and a program, called Cities of the Future that was launched at the Stockholm Water Forum in 2007.

Stated in engineering terms, how does IWA, as a water professional organization, influence the dynamics of planning, development and construction: So that things like the need to reuse water, the diseconomies of scale of the huge water and sewer networks of big cities, and the possibilities of water and wastewater neighborhoods are thought about? At the same time, another group of members, with a complementary set of objections were asking how the surfacing of water, undergrounded in pipes, could ascetically aesthetically and ecologically benefit the urban environment. Issues like those above, did not easily fit into the predominant-specialist group network of the new IWA and thus were treated programmatically.

A parallel discussion arose about how water catchment/basins could/should function in the future function in practical terms. Addressing these ideas, challenges and opportunities gave rise to the IWA Programs Cities of the Future and Basins of the Future. These programs motivated a cadre of leading IWA members to think innovatively and influence benefit urban planning, design and utility management on the ground. By 2007, it was clear that such programs were clear differentiators between IWA and its national counterparts.

Strategic Partnerships

Finally, the period from the mid-2000s forward marked the beginning of a series of lasting Strategic Partnerships between IWA and other significant organizations and interests. Notable among these were links with: the Stockholm Water Week and Stockholm Water Prize; the World Water Council, particularly in the 2005 -2010 period; WEF (US) related to the World Water Monitoring Day program; AMWA, AWARF (US) and WSAA (Aus) on issues related to climate change adaptation in utilities; with WHO on the 2011 Drinking Water Guideline and Water Safety Plan initiative; and , importantly, the EU's Water Technology Platform initiative.

Not only were these types of partnerships very smart at the time, but they served as a harbinger for things to come in IWA. By working together, organizations can accomplish so much more than by "going it alone". Nonetheless, at the time, not all the players in this story got this central point.

Finance and Administration

As IWA hit a full stride during this period, a problem that plagued IWSA and IAWQ in addition to IWA was finally addressed - that being the biennial nature of the Associations income and expenditures. IWA like all other charities in the UK was required to keep its accounts on an annual basis, whereas in reality, the Association really functioned on a biennial cycle. During this period, with the benefit of strong leadership from IWA's Treasurers, the Association created a system that complied with the annual accounting cycle, but recognized income and expenditures needed to be planned biennially. Doing this required good planning and financial discipline, both of which were in place from 2008 onwards.

VI. 2013 -2014 – A Period of Change and Major Accomplishments

At the end of 2012, IWA's Executive Director throughout most of the post-merger period (2002-2012), felt that IWA would benefit from a renewal in executive leadership and thus left IWA with a strong leadership in the Board of Directors, and in a good position to choose a new Executive Director.

This change was planned beginning 18 months in advance in order to ensure a smooth transition. Ger Bergkamp was selected as the new Executive Director following a search and screen process. He had worked for the Association for approximately two years prior to assuming the ED position. Paul Reiter was retained as Strategic Counsel to IWA through early 2015, and was stationed in IWA's Singapore office.

Two initiatives during this period are highlighted in this section: one the initiation of "Communications 2.0" for IWA is discussed below. The second involved the "folding-in" of the Council of Distinguished Water Professionals, which had existed since the 2002 period, into the IWA Fellows Program architecture.

This led to an expansion of the Fellows Program to include a two joint Fellows Groups: The Distinguished Fellows Group, with a refreshed charter and a starting set of appointed individuals from the former Council for Distinguished Water Professionals, and the existing Fellows Group with its charter unchanged. This new architecture of the Fellows Program took some time to implement, but is today running smoothly as was said previously, and today represents a significant element of IWA's member-based foundation.

Communications 2.0

A resonant theme of this history is the virtual nature of IWA and its predecessors, and the almost never ending need to facilitate communications between members, and to the plethora of would-be members, governments, citizens, associations, NGOs water communities etc. In 1995 this need was already self-evident. By 2005, with the rise of the internet and web-based representation, IWA was struggling to keep up as it had to make the kind of tough choices that follow from the post-merger demands on the new IWA.

By 2010, with the web transitioning to becoming a key medium not just for broadcasting, but for communications between individuals, such as IWA members, it was time for a major initiative. This initiative, called IWA Communications 2.0 involved major transitions in the Association's website and means of communicating with members, its flagship practitioner-focused magazine Water21 and linkages between IWA Operations/Marketing and IWA Publishing.

From this period, IWA Connect was launched which governs a great deal of communications between IWA, its members and facilitates communications between members.

And as any modern corporation can tell you, this new era of communication was and is both disruptive and expensive – but in the end, totally essential to doing business today.

Lisbon WWC - 2014

Interspersed in the aforementioned agenda of the Association under the new Executive Director was 2014 WWC in Lisbon, Portugal. This congress was extremely successful by all accounts, following in post-Beijing pattern of well- conceived and well executed IWA Biennial WWCs since 2006, the Lisbon conference added a new dimension to IWA's overall program – that being a regulator's forum. Attempted at very small scale at the Berlin WWC in 2001, this forum was professionally organized by Portugal's own regulator, Jaime Baptista with exceptionally good attendance by regulators from around the world – a very difficult feat to accomplish. This regulators forum began what appears to be an enduring element of IWA's WWC series.

Also at the time of the Lisbon conference, the IWA Presidency was handed over by Glen Daigger, who had served four year, to the new IWA President, Helmut Kroiss.

VII. 2015 –The End of Part Two of IWA's Post- Merger Story

The beginning of 2015 marks the end of this account of IWA's beginnings after the merger of IWSA and IAWQ through to its maturity as a fully developed successor to these organizations, which as Tony Millburn had predicted before the merger, would be at least a 1+1=3 proposition.

Between 2015 and 2019, IWA would continue to demonstrate its incredible strength in the fact that approximately 10,000 professionals per year attend its conferences and events, which during the ensuing period included two very successful World Water Congresses in Brisbane, Australia in 2016 and Tokyo, Japan in 2018. See Table Five below.

Table Five

IWA – 2000-2022 -- Legacy Biennial Congresses and Presidents

Legacy Biennial Congresses			Association Presidents and Terms		
Year and Month		Locations		Name and Country	Details
2000	July	Paris		Vincent Bath and Piet Odendaal	S Africa Serving as co-Presidents per merger agreement
2001	October	Berlin		Norihito Tambo	Japan Assumes Presidency in Berlin
2002	April	Melbourne			
2003				Michael Rouse	UK Assumes Presidency at IWA March 2003 General Assembly, Osaka
2004	September	Marrakech		Laszlo Somlyody	Hungary Assumes Presidency in Marrakech
2006	September	Beijing		David Garman	Australia Assumes Presidency in Beijing
2008	September	Vienna			Second term
2010	September	Montreal		Glen Daigger	USA Assumes Presidency in Montreal
2012	September	Busan			Second term
2014	September	Lisbon		Helmut Kroiss	Austria Assumes Presidency in Lisbon
2016	October	Brisbane		Diane D'Arras	France Assumes Presidency in Brisbane
2018	September	Tokyo			Second term
2000				Tom Mollenkopf	Australia Assume Presidency
2002	September	Copenhagen			Second term

At the same time, it is worth encapsulating in a table, first the IWA's additional WCDE Biennial Congress series devoted to Development Solutions, and second, the IWA Leading Technology Conference series. Both are portrayed in Table Six below.

Finally, it is important to recognize IWA's publishing successes during this period, and the significant cross-talk between programtic activities undertaken by the Association and in IWA Publishing's expansion of scholarly journal, building on the pre-merger success of IAWQ in publishing (Table Seven).

Table Six
IWA – 2000-2022 -
WCDE Biennial Congresses and LET Conferences

WA Biennial WCDE Development Congress Series (starting 2009)		IWA Leading Edge Conference Series	
2003		2003	Nordwijk, NL
2004		2004	Prague, CR
2005		2005	Sapporo, JP
2007		2007	Singapore
2008		2008	Zurich, CH
2009	Mexico City, MX	2009	Singapore
2010		2010	Phoenix, US
2011	Kuala Lumpur, MY	2011	Amsterdam, NL
2012		2012	Brisbane, AU
2013	Nairobi, KE	2013	Bordeaux, FR
2014		2014	Abu Dhabi, UAE
2015	Dead Sea, JO	2015	Hong Kong, SAR
2016		2016	Jerez de la Frontera, ES
2017	Buenos Aires, AR	2017	Florianopolis, BR
2018		2018	Nanjing, PRC
2019	Colombo, LK	2019	Edinburgh, UK
2022		2022	Reno, US

Table Seven
IWA Publishing's Combined Journey from 1947 - 2018

Year Initiated	Journal
1960	AQUA (IWSA)
1966	Water Research (IAWPR)
1970	Hydrology Research
1972	Water Science and Technology (IAWPR)
1998	Water Policy (WWC)
1999	Hydroinformatics (Joint IAHR/IWA)
IWSA/IAWQ MERGER	IWA
2001	Water Supply
2003	Water and Health
2006	Water Practice and Technology
2010	Water and Climate Change
2011	Water Sanitation and Hygiene for Development (Joint WHO/IWA)
2011	Water Reuse
2018	Blue Green Systems
2018	H2O Open Journal

Along the way, IWA had a change of Executive Directors, with Kala Vairavamoorthy assuming the role in 2018, and as is ordinary, new Presidents (Diane D'Arras in 2016-2020, and Tom Mollenkopf in 2020). Very extraordinary was the fact BREXIT and the departure of the UK from the EU sadly resulted in the necessity of IWA needing to relocate its operational office in The Hague, back to the UK.

However, the most extraordinary of all were the devastating impacts of Covid on the whole world – which the world is still both suffering from and recovering from – and specifically related to IWA, the impact of Covid related to conferences and travel. The robust and continually expanded aspect of a global economy post WWII, of which IWA and its predecessors were a central part -- came to a halt for over two years.

However, what we can see from this history, that arising from the ashes of WWII, IWA's predecessors --IWSA and IAWQ --faced multiple challenges like wars in Korea and Vietnam, the Czech revolution, the fall of the wall in Berlin, SARs and Icelandic volcanoes. They survived and flourished in their time – as will IWA, whose maladies included SARs, MERs and the Icelandic volcano, which threatened travel throughout Europe and attendance at the 2012 Busan Conference (not to mention a typhoon in Busan).

Through all of this, IWA, with its new leadership regrouped, is now well positioned for the challenges ahead, with its formal reentry post-Covid in the form of the 2022 WWC in Copenhagen.

VIII. IWA's Bright Future – Conclusory Thoughts

IWA's future is even brighter than what has been seen in the successes and resilience of its predecessors over a period of 75 years, including a dramatically changing backdrop since IWA was conceived in 2000.

As the author of this document, let me take a moment to explain this view in my own words. IWA and its predecessors, unlike their counterpart national water associations which can command membership and dues, exists and survive through a different mechanism – it attracts members through an offer of being associated with, involved with and publishing with, the best and the brightest at the global level. This applies to individuals, utilities or companies.

And unlike national associations, the renewal of membership, participation in events and the contribution of energy of the participants was and is, entirely voluntary. This fact spells out the promise and the challenge of IWA. Like its predecessors and itself in its first 20+ years -- it needs to earn the attention, participation, membership, loyalty and affection of its members. Every day and every year.

To meet this challenge in the competitive circumstance that underlies the discussion above, the organization needs to adapt, innovate and continually change to be the extraordinary legacy that it enjoys. A careful reading of the past, some of which is documented in this report, fully illustrates this point.

Now to the premise: IWA's future is in fact brighter than any time in the past. The evolution of the regulatory environment unintentionally drives the actors in the water sector to think in a compliance rather than excellence framework. Many circumstances drive us all into short-term rather than long-term thinking – into reactive rather than science-based solutions. By contrast, IWA and its predecessors were never organizations focused on the present nor on the rank and file of national associations.

As Glen Daigger, IWA's President from 2010-2014 once said, "the national water associations are focused on codifying the present, and IWA is focused on shaping the future". That is the differentiator and IWA's *raison d'être*.

In a rapidly changing scientific, policy and human sensibility set of circumstances, IWA's future is indeed bright. To remind the readers, it is today by far the largest international association related to water. Almost all of the top academics in water are part of and aligned with IWA. Increasingly, the regulatory community is part of the IWA family. Utilities remain a challenge for IWA, although they are today largely reactive to the regulatory constraints in each continent/country.

The world's water challenges are greater than ever before. As we preached for the past 20 years, the combination of economic and population growth, urbanization and climate change impacts spell out a daunting future, in both high-income and low-income countries.

Looking ahead, IWA needs to do what it has done in the past 22+ years – respond to these challenges. In doing so, it has talented leadership at all levels to meet these imperatives. And as they proceed, let us all remember that its members are its lifeblood, to continue to pursue the leading-edge of science, research and practice, and continue to adapt to meet the practical challenges of running a large international association in an era of participation-focused individuals and organizations.

APPENDICES

APPENDIX 1A Founding References for IWSA

APPENDIX 1B Founding References of IAWPR

APPENDIX 2 Helmut Kroiss LWWTP article in WST

APPENDIX 3A IWSA 75th Anniversary Report -- 1997

APPENDIX 3B IAWQ 50th Anniversary Report - 1990

APPENDIX 4.. Merger News

APPENDIX 5..IWA at the beginning of 2007