

Highlights and challenges of IAD history

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The IAD, as the oldest NGO in the Danube River Basin (DRB), has a varied history. Its foundation in 1956, during the cold war, aimed at fostering research and scientific cooperation between the Danube countries as well as making the Iron Curtain between East and West semipermeable for scientists. After the collapse of the communist regime in 1989/90, the new political environment in the DRB necessitated a change in the mission of IAD. The ICPDR (International Commission for the Protection of the Danube River) was established as a water management body taking over some former tasks of IAD, which became an observer and cooperator of this governmental organization. After the turn of the millennium, IAD launched a new scientific strategy that aimed at bridging basic and applied science and increasing public visibility. Recently, IAD strengthened its network in the DRB by contributing to water protection and water policy. Detailed information is available on the IAD website www.danube-iad.eu.

Foundation of the IAD in 1956

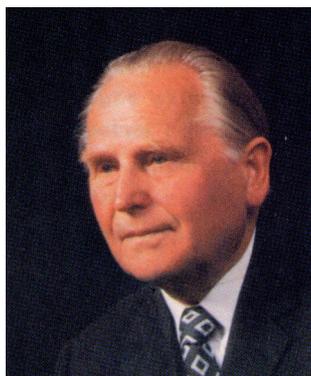


Figure 1. Reinhard Liepolt (1906–1996), founder of IAD and president for 24 years. Credit: AC-IAD.

I can vividly imagine that, in the 1950s, the Austrian university professor Reinhard Liepolt (*Figure 1*) suffered in Vienna from a lack of scientific exchange with colleagues in communist countries about water protection issues for the Danube River Basin (DRB). Thus in 1956, he founded the IAD (Arbeitsgemeinschaft Donauforschung) with the help and cooperation of enthusiastic associates from other Danube countries and with the financial and moral support and under the umbrella of SIL (Societas Internationalis Limnologiae) (*Figure 2*). The organization of a scientific NGO with a president, a general secretary, national representatives (all forming the board) and expert groups (EG), similar as in SIL, allowed for annual meetings in Vienna where scientific issues could be discussed in a free atmosphere. SIL membership extended the scientific network in the DRB to a global level, and this exchange was beneficial for all members of both associations for decades. Only after a major shift in the SIL board and strategy initiated by the death of its long-term General Secretary

Bob Wetzel in 2005 (obituary in DN-12, 2005), IAD not only lost its small annual grant, but also – and more importantly – the official contact to the international limnological community by the decision to terminate SIL affiliation in 2010.

Apart from the annual board meetings in Vienna, IAD Conferences were the basic event to gather and unite EG leaders and researchers from the DRB to exchange data and knowledge (see Tittizer & Cyffka 2019). Conference Proceedings were published and are mostly available through the library of the University of Vienna¹⁾. Later, a few were summarized and published in scientific journals, (e.g. Bloesch 2002b, 2003, 2005). However, nowadays, they have disappeared mostly because the modern scientific system does not accept such contributions for professional records.

In a joint effort, Liepolt managed to publish a monograph on the Danube River (Liepolt 1967) that was an outstanding achievement of IAD and remained a key book of Europe's second largest river over decades (see Haidvogel & Janauer 2019). Not before 2009 was a comprehensive update published as chapter in the book 'Rivers of Europe' (Sommerwerk et al. 2009), now under revision for a second edition.

In this period, in 1976, the Austrian Committee of IAD was formed (www.oen-iad.org), operating as an association according to Austrian law. The AC-IAD honoured Reinhard Liepolt by issuing the 'Liepolt Award' for outstanding scientific contributions of young Austrian researchers every two years. Austria is the only country with a national committee, while member countries were and still are free to organize themselves (e.g. in electing their representatives).

Consolidation phase 1980-1992

Under the presidency of Imrich Daubner (CSSR), IAD remained a constant and reliable network in the DRB. Both national representatives and expert group leaders delivered annual reports documenting multidisciplinary IAD activities and outputs. Apart from the Danube River and its tributaries,

¹⁾ <http://bibliothek.univie.ac.at/fb-biologie/biologieilinks.html>



Figure 2. The founding members of IAD (from left to right): Dr. Russev, Prof. Dr. Mucha, Prof. Dr. Liepolt, Prof. Dr. Dudich, Dr. Rudesco, Prof. Dr. Banu, Dr. Knöpp, Vienna, December 1956. Credit: Thomas Tittizer.



Figure 3. The first IAD ship survey of the Danube from Vienna to the Black Sea in 1960, operated by the vessel MS Amur. Sampling in these days was performed in formal clothes with coat, tie and leather shoes. Credit: Thomas Tittizer.

lakes also were a matter of concern (later combined into the limnological catchment approach (Bloesch 2005) and the River Basin Management). The booklet ‘25 Jahre IAD’ (IAD 1981) shows exemplarily the IAD performance in these days, presenting short reports by national representatives. In this period, General Secretary Edmund Weber (obituary in DN-16, 2007) was a prominent leader and organizer of IAD Conferences. After five conferences in Vienna, these then took place according to a given sequence in all member countries, which was abandoned in the late 1990s. Further, most conferences had a headline pointing out the main topic, and produced resolutions on behalf of the public to highlight major achievements and problems in Danube River protection. Unfortunately, there was no systematic archive of these documents and board meeting protocols, although presently the IAD history is being researched. Most of the scientific output of IAD supporters is in publications in national and international journals, often located in Danube countries. At least, the triennial IAD reports by the presidents, published in the SIL-Proceedings, document the scientific production and personal changes.

In the years 1960/61 and 1988, IAD performed a Danube survey along the river course, encompassing physical, chemical and biological sampling, to get a clear picture about the degree of pollution (Figure 3). The results and compilations of key topics were published in the book series ‘Ergebnisse der Donauforschung’ (see Haidvogel & Janauer 2019). In the mid 1990s, a third Danube cruise was planned but not realized, mainly because of organizational and financial problems. These investigations were substituted later by ICPDR in their Joint Danube Survey (JDS) campaigns in 2001, 2007, 2013, and 2019 (ongoing) (see Schwarz 2019).

Political changes 1990 and new IAD strategy 1998

The major political changes in Europe in 1989/90 affected the work of the IAD (Wachs 1996, Bloesch 1999). In view of the foundation of the EU in November 1993, the water sector in the DRB was completely reorganized, cumulating in the establishment of the ICPDR in 1998 (www.icpdr.org), which

aims at implementing the Danube River Protection Convention signed in 1994 and enforced in 1998. IAD and WWF were the first NGOs accepted as observers in the ICPDR. Since ICPDR is a governmental organization, these NGOs cooperate in activities without voting rights. The main task of ICPDR is to coordinate the implementation of the EU-WFD (2000) in Danube Countries. As active observers, many IAD scientists work in several Expert Groups and contribute significantly to ICPDR reports and the JDS, as well as large EU-driven projects such as navigation (in particular, the submerged sill at Bala-Borcea Branch) and hydropower (in particular, the fish passage at the Iron Gate dams) both dealing with spawning migration and protection of the highly endangered Danube sturgeons (Reinartz 2002). More details are given in Schwarz (2019) and Haidvogel & Janauer (2019). IAD also participated with programs in the Danube Day – every 29 June – that was introduced by ICPDR in 2004 to raise public awareness (Figure 4).

In this changed political setting, the role of IAD to unite Danube Countries in water protection had ended, as this task was taken over by ICPDR. The decade programs of IAD became less important and were abandoned. However, IAD still aimed at promoting science as the foundation of water management and bridging basic and applied research (Sommerwerk et al. 2010). As a consequence of the war in the Balkans during the 1990s, the planned IAD Conference in Novi Sad was cancelled, and as a substitute, a first joint meeting with NR and EGL was organized in Mosonmagyaróvár, Hungary, in 1999. In 2002, an internal Peer Review (Bloesch 2002a) provided the foundation for strategic changes and to abandon a few traditions: i.e. balance novelty with tradition in a changed environment. The board decided to prioritize a few key research topics (sturgeons, macrophytes, microbiology, Danube quality maps and biomonitoring; later complemented by hydro-morphology), while the Danube Delta, the Vienna floodplains and old Danube branches, the Hungarian internal delta (Pannonian Plain), the Iron Gates, the Lower Danube Green Corridor as well as major tributaries remained hotspot areas of scientific interest. IAD was transformed from a loose



Figure 4. Danube Day 2006: IAD transboundary bicycling tour from Vienna to Győr. The official ICPDR theme ‘Danube Living Space’ was interpreted by IAD as ‘Let the Danube inspire you’ and realized by ‘Save the Sturgeons’. Credit: Meinhard Breiling.

network into a legal association according to Austrian law to allow application and partnership in European research programs. This necessitated creating statutes and introducing a list of members paying an annual fee as the countries already did since 1956. Also, significant physical changes occurred, e.g., losing the traditional support of the Austrian Ministry, leaving the traditional host institute in Vienna (Bundesanstalt für Wassergüte) and organizing a new IAD office for the General Secretary.

After these structural revisions, in 2010, the Presidium was enlarged by the Vice-President to increase the representation of IAD in international organizations. Other changes occurred with Expert Groups (EG), a process that is still ongoing today. Some EG lost their leaders by retirement and no successors were found, some traditional basic science EG merged (e.g. Phytoplankton and Zooplankton), and some topics lost importance (e.g. Radiology). Further, new topics emerged, leading to new EG such as Floodplain Ecology, Invasive Alien Species, LTSER & Environmental History, and Sustainable Development & Public Participation. There was a change from traditional basic aquatic science disciplines (chemistry, physics, biology) to more applied and societal subjects. Any EG should be active in networking and representing IAD, as documented in annual reports in a similar way as the country annual reports.

The German representative at that time, Thomas Tittizer, suggested launching an IAD bulletin to reach the public. This idea was first realized in 1999 by bilingual issues in German and English, the latter recognized as the accepted international (scientific) language. Since 2008, the bulletin is published in English only and in a new modernized layout. *Danube News – Donau Aktuell* (ISSN 2070-1992) appears twice a year and features the most challenging topics in aquatic research and water pollution issues relevant to the DRB. They also contain obituaries of prominent IAD officers that reflect parts of its history. All editions can be downloaded from www.danube-iad.eu.



Figure 5. Mureş/Maros River, with a mean discharge of 184 m³/s, the largest tributary of Tisza River that flows into the Danube River. It still features many near-natural stretches with extended gravel bars and riparian vegetation. Photo: Jürg Bloesch.

Celebration of 50 years IAD (2006)

The 50 year anniversary of IAD was celebrated in Vienna during the 36th IAD Conference. The historical evolution and the turnaround of IAD are well documented in *Danube News* 13/14, 2006, where the Mureş River, Romania, was proposed to be a model catchment as a potential outdoor lab for IAD (Sandu 2008, Schwarz 2010) (Figure 5). Since the late 1990s, IAD tried to be more visible by disseminating PR materials (IAD flyers since 1995), maintaining a homepage (from 1999), and exhibiting roll-ups, all being periodically updated. Moreover, its attractiveness was enhanced by supporting young scientists in the Middle and Lower Danube countries. During 2001-2007, IAD sponsored SIL poster presentations of four PhD students in Melbourne, Lahti and Montreal that were selected by peer review. The requested reports of the conferences documented the positive and useful experience of creating and presenting a good poster, and likely assisted these students to create an international network and promote their scientific careers. Nowadays, these activities are sustained by small grants for young students attending IAD and international conferences.

The present – bottom line of 63 years IAD existence

The vivid history of IAD reflects the different cultures in the DRB, major political changes, and the strong gradient of financial power from upstream to downstream countries. Over decades, IAD fostered the scientific dialogue across borders, adding a new dimension in the past years: dissemination of scientific results to the policy level and the public, in particular by contributions to international projects and in the framework of the ICPDR and the European Strategy for the Danube Region (EUSDR, Priority Areas 4 (Water Quality) and 6 (Biodiversity)). The bridge between science and politics is complex and difficult, as governmental managers and decision makers often do not take scientific data and facts into consideration, and only a strong scientific foundation can yield reliable and truly sustainable solutions to environmental problems.

Major scientific achievements are presented and acknowledged in Haidvogel & Janauer (2019) (see also Bloesch 2009); but scientific quality is an everlasting task. Too many papers are descriptive and present so-called monitoring results, rather than investigating ecological processes, testing hypotheses and developing concepts. While the introduction of a review system for IAD Conference contributions was a first step for improvement, scientific education remains a primary problem. Although several universities are actively involved in IAD research, political pressure influences education systems not only in primary schools, but also in universities and Academies and, hence, has an impact on IAD performance. In the conflict area of bottom-up and top-down strategies, the IAD presidency is dedicated to acquire funding and implement

projects targeting the protection and restoration of aquatic biodiversity in the Danube Region, to attract all Danube countries and motivate scientists to become pro-active IAD members and promoters, and to further increase IAD visibility at the regional level.

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Six decades of scientific cooperation in the Danube River Basin

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In 2020, the International Association for Danube Research (IAD) looks back to almost 65 years of investigating the second largest river system of Europe. Since 1956, IAD has passed turbulent times. Scientific cooperation across the political divide between 'west' and 'east' is without any doubt among the biggest achievements which was attained until the turn from the 1980s to the 1990s (Bloesch 2019). Using among others previous publications on the history of IAD and the extensive IAD-library hosted at the University of Vienna this article summarizes major research topics and their change over time (e.g. Daubner 1982, Berczik 1995, Bloesch 1999, Bloesch 2009).

Development of Danube research and main scientific achievements of IAD

Efforts to establish an international association for Danube research started much before the Iron Curtain divided the Danube countries. In 1935, the 'Internationale Kommission zur wissenschaftlichen Erforschung der Donau' (International Commission for the Scientific Investigation of the Danube) was founded. The Austrian fishery scientist Adolf Cerny, his famous Romanian colleague Grigori Antipa and the Hungarian Danube researchers Rezsö

Maucha and Emil Unger were important promoters (Liepolt 1959, Berczik 1995). Already in 1935, A. Cerny undertook a first river survey by ship to get in touch with other scholars and to exchange on the most needed research activities. Water samples were taken during the travel and analyzed either directly on place or at the 'Hydrobiologische Donaustation' in Vienna. Following contemporaneous European research trends in hydrobiology, monitoring fish migration was identified as a major task. Emil Unger was designated to lead this endeavor envisaged for 1936. A large number of fish specimen should have been marked, and (re-)captures being reported back by fishermen similar to studies of the Upper Danube, the Rhine or the Main (see e.g. Steinmann et al. 1937). Soon after, the deteriorating economic situation and World War II prevented coordinated activities among scientists for many years. But the Danube Commission of 1935 is proof that researchers in the Danube River Basin exchanged and cooperated already before World War II. One might speculate that these efforts have helped to set up and implement a comprehensive joint scientific program shortly after the foundation of IAD in 1956. In many countries, the formation of IAD speeded up long-lasting initiatives. For example, in Hungary, it gave the necessary impetus to establish internationally connected Danube research via the foundation of the 'Danube Research Institute' at the Hungarian Academy of Sciences (Berczik 1995).