

**International Association of Hydrogeologists**  
the World-wide Groundwater Organisation

# ANNUAL REPORT 2016



**Furthering the understanding, wise use  
and protection of groundwater resources  
throughout the world**



# IAH Annual Report

The IAH was founded in 1956 and 2016 marked the 60th year of our association. We celebrated this occasion at our Congress in Montpellier and at IAH conferences across the world. We also looked forward to strengthening IAH's membership and activities, as a new President and Council took the reins.

By the end of 2016 we had a record 4169 members in more than 130 countries, with new or reactivated national chapters in Brazil, Kazakhstan, Iraq and Turkey bringing our total to well over 40. New groups of early careers hydrogeologists, who represent the Association's future, were established in some countries and, with a reduced membership fee available, we have increasing numbers of students.

The Impact Factor of our Hydrogeology Journal rose again and the number of downloads of articles remains high. Output of books remains intermittent, though it is hoped that the offer of an honorarium will encourage authors and editors in the future. IAH joined twenty other global partners from academia, NGOs, development organisations and the private sector in GRIPP (Groundwater Solutions Initiative for Policy and Practice), to widen our reach in promoting sustainable groundwater management.

Despite an operational deficit, favourable exchange rates meant that we recorded a small overall surplus at the end of the year. It is clear, though, that continued careful management of our finances will be necessary.

We hope you find this annual report informative and clear – if you have any questions or suggestions, please contact us at [info@iah.org](mailto:info@iah.org).

## Questions or comments?

Email [info@iah.org](mailto:info@iah.org)

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# President's message

It was a great honour to take over the role of President of IAH in 2016, during this commemorative year for the IAH. Formally created in 1956, at the International Geological Congress (IGC) in the City of Mexico, IAH celebrated its 60th anniversary with a special Congress in Montpellier, France, honouring at the same time our French colleagues involved in the first days of the Association. Many of our National Chapters also organised in their countries 60th anniversary meetings and honoured their most distinguished members.

The new Council members, elected in September to take the Association through the next 4 years, are able to take up their responsibilities confident that the hard work of the outgoing members of Council has laid the foundations for continued success of the Association. I'm certain that there will be a full programme of work for the new Council, with Forward Look priorities and preparing for the next Congress in Dubrovnik.

I have been pleased to see the continued progress made by our Commissions and Networks, and our National Chapters, in organising conferences, cooperating with national and international agencies, writing technical or educational papers, and providing a strong forum for groundwater science. Our Commissions and Networks are open to both members and non-members, which I am certain helps support their work and visibility.

Participation of IAH in international forums is important. I was able to represent IAH at several scientific and technical meetings, including ISMAR9 in Mexico City, Mexico, in June, the XIII ALHSUD Congress in Merida, Mexico, in August, the 15th Water-Rock Interaction International Symposium (WRI-15), in Évora, Portugal, in October, the Spanish-Portuguese Congress on Groundwater in the Second Cycle of Hydrological Plans, in Madrid, Spain, in November. The Budapest water summit was attended by Shammy Puri and Teodora Szocs. I gratefully acknowledge the substantial inputs made by my colleagues, and the contributions from the meeting hosts, international agencies and employers.

The Hydrogeology Journal continued to be our main flagship, with more and more scientists, mostly non-IAH members, wanting to publish, which shows its global importance. We added to our 'Selected Papers on Hydrogeology' book series by publishing 'Solving the Groundwater Challenges of the 21st Century', edited by Ryan Vogwill and 'Karst without Boundaries' edited by Zoran Stevanovic, Neven Kresic and Neno Kukuric. We published further papers in our Strategic Overview Series, on the topics of 'Ecosystem Conservation and Groundwater', 'Global Change & Groundwater' and 'Human Health and Groundwater'. These were prepared by Stephen Foster, Gillian Tyson, Bruce Misstear and John Chilton and included inputs from our wider membership, for which I am grateful.

Our efforts to improve our activities and publications have consequences for our budget. Our main financial support is our members' fees, and we can also receive some support from any surplus generated by our main congresses. However, this was not possible for our congress in Montpellier. A priority for me as President will be developing and implementing new means for diversifying our financial support.

In the final part of the year arrangements were made for the replacement of the Executive Secretary, John Chilton, and I thank Bruce Misstear, John Chilton and Kellie Nicholson in the recruitment process. My last words go to the IAH Secretariat, who are always ready to help the Executive and Council in their tasks: thank you for your hard work!

**António Chambel**  
IAH President



# A year of reflection... and looking ahead

The IAH was founded in 1956 and 2016 marked the 60th year of the association. France and Germany, two countries that played a large role in establishing the IAH, came together to organise the 43rd Congress in Montpellier. Events held in many other countries also commemorated our anniversary. We also looked forward to strengthening the IAH's membership and activities, as a new President and Council took the reins.

## Congress in Montpellier

There were more than 750 delegates at the 43rd Congress in Montpellier, which was the main focus of our 60th anniversary year celebrations. There was a packed programme of technical presentations, commission and network meetings, the IAH awards, Early Career events and student competitions. It was particularly fitting that France and Germany, two countries whose IAH members played such an important role in IAH's formative years, should jointly organise the congress. A particular achievement of the organising committee and their volunteer student helpers was to ensure that 290 participants took part in the excellent field visits in the region around Montpellier.

Jean Margat featured in a video in Morocco during the 1950s and gave a brief presentation on "groundwater flow and stock". He reminded us of the need to safeguard groundwater resources pointing out that recent publications quantifying regional or worldwide groundwater resources were often based on estimates of rainfall recharge, without considering the subsequent exploitability, and no distinction made between renewable and non-renewable resources. He warned of over-estimation, which could lead to over-exploitation of groundwater resources instead of managing them for sustainability.



Jean Margat

## Meetings and commemoration across the world

The anniversary was celebrated in many ways in different places. An article chronicling the history of IAH was published in the August edition of Hydrogeology Journal. As well as the IAH's 60th anniversary, the Irish Chapter celebrated 40 years, Slovakia 20 years and Hungary 10 years. Spain organised two anniversary meetings.

Croatia held a meeting on its own history of hydrogeology and nominated national honorary members. Morocco held a meeting in Rabat associated with the UN COP22 (Conference of the Parties) meeting on climate change. Poland's national conference and general assembly in October was attended by more than 100 members. Portugal celebrated in November and honoured its oldest member.

The Netherlands National Chapter organised a one day conference with the Netherlands Hydrological Society (NHV) in May on the "Export of hydrological knowledge" to highlight the work of Dutch colleagues globally. In September, the British National Chapter and Hydrogeological Group of the Geological Society of London celebrated the IAH 60th anniversary and the Geological Society Year of Water at a two-day meeting. Dick Downing's classic work, 'Groundwater: our hidden asset' was relaunched as an e-book, which will help bring the importance of groundwater to a digital generation.

The IAH Spanish Chapter celebrated its 35th anniversary, at a conference organised jointly with other Spanish associations - the Groundwater Club (CAS) and the Spanish Association of Hydrogeologists (AEH). After an opening ceremony session including representatives of the Spanish Ministry of Environment, Spanish Geological Survey (IGME) and the presidents of the three associations (AIH-GE, CAS and AEH), presentations were given about past hydrogeological experiences, the present situation and the future of hydrogeology in Spain.

We were greatly pleased, too, that the discussions that led to the Brazilian Groundwater Association constituting the IAH national chapter came to fruition during our 60th anniversary celebrations.





### National Honorary Members

As part of the 60th anniversary celebrations, a number of chapters recognised exceptional contributions from long-standing members by awarding National Honorary Member status. This was done in Croatia, Hungary, Italy and Spain and plans were made by Ireland, Germany, Poland and Portugal to do the same.

### New Applied Hydrogeology Award

In our anniversary year we inaugurated the new Applied Hydrogeology Award to “a groundwater professional who has made an outstanding contribution to the application of hydrogeology, preferably in developing countries or in support of international development”. In presenting this to Richard Carter, it was recognised that he has practised, taught and championed applied hydrogeology in developing countries throughout his career with energy, passion and wisdom. He uses sound hydrogeological science to advise governments, NGOs, donors and communities, and inspires young hydrogeologists to develop practical solutions to problems. Richard urged those starting their careers to apply their expertise in an inter-disciplinary manner to the big problems of poverty and water and food insecurity as a highly worthwhile and fulfilling vocation.

Richard Carter



### Recording our history

We took the opportunity of our 60th anniversary to set down a definitive historical record of the association's first 60 years. Past President Willi Struckmeier led the initiative, supported by others including the Time Capsule Project, our Early Career Hydrogeologists and our national chapters. Drawing from the IAH archives and from personal memories, tables of councils, congresses, commissions, chapters and publications we revised the history section on the IAH website. We also received many interesting photographic contributions showing past IAH activities. We are grateful for all the contributions we received; it is our intention to prepare a more comprehensive report and archive for future reference.





## Commissions and networks

The activities of IAH's commissions and networks include contributing to the science of groundwater and undertaking outreach, education and training. They run sessions at IAH congresses, co-convene technical meetings and field excursions with other societies, host workshops and training courses and prepare educational and outreach publications. We welcome suggestions for new topics or activities. You do not have to be an IAH member to participate. In fact we encourage wide involvement from the groundwater community, as this will help the groups to thrive and give greater authority to their work.

### Managing Aquifer Recharge (MAR)

ISMAR9 was organised by MAR in Mexico City in June 2016. This was a significant event for the Commission and its partners, UNESCO (who provided support to delegates from developing countries), American Society for Civil Engineers, Biennial Symposium on MAR, Arizona Hydrological Society and Groundwater Resources Association of California. Around 250 participants from 23 countries attended, many from Latin America.

The Commission actively supports UNESCO IHP (International Hydrological Programme) through working groups and there are opportunities for all in IAH to contribute to these.

Two thematic issues of open access journals were prepared. The first was "Water Quality Considerations for Managed Aquifer Recharge Systems" in the journal, *Water*. The second was "Integrated Water Management Incorporating Managed Aquifer Recharge" in the journal *Sustainable Water Resources Management*.



### The IAH Burdon Groundwater Network for International Development (BGID)

A session at the Montpellier Congress, co-organised by BGID, looked at current and future challenges for improving groundwater supply in developing countries. This focused on groundwater used for domestic and agricultural needs, and considered new approaches for improving knowledge about groundwater availability and renewability. The need for participation in long-term sustainable management was emphasised.

BGID look forward to working more with the IAH regional vice president to increase membership in Sub-Saharan Africa and to develop further research and support activities. They have also taken steps to improve the information available on the BGID website, including links to free resources online, and to increase use of social media.





### Urban Groundwater Network

Incoming Chair of the Network, Helen Bonsor, and previous Chair, Ken Howard, oversaw a wide-ranging and well-attended series of talks at Montpellier. These emphasised the many issues for groundwater and growing city populations, increasing climatic variability and city infrastructure and land use planning challenges. The impact of sustainable urban drainage schemes on shallow urban groundwater resources was considered, along with the influence of urban infrastructure on groundwater flow paths and recharge, the potential role of the hyporheic zone in attenuating organic micropollutants, and approaches for managing urban groundwater as a resource for both heat and water.

### Commission on Transboundary Aquifers

The Commission has continued to support UNESCO on transboundary aquifers and draft articles were presented at the UN General Assembly in October.

A new training manual “Integration of Groundwater Management into Transboundary Basin Organizations in Africa” was presented at Montpellier, where the value to both specialists and non-groundwater experts in basin organizations was highlighted. The manual has been supported by the Commission and several international technical organisations and is available in English or French from the African Groundwater Network website. It has been used at training events in West Africa, and there is interest in adapting and applying it in the Nile basin, eastern Africa, Central Asia, MENA region.

### Early Career Hydrogeologists' Network (ECHN)

ECHN continues to thrive, with new groups established in a number of countries, including Brazil (pictured below).

ECHN presented “A day in the life of a hydrogeologist” at Montpellier. Senior hydrogeologists, represented by Callist Tindimugaya, Joanne Thompson, Shammy Puri and Wendy Timms shared challenges faced early in their professional lives and answered questions on career development. The importance and demand for mentoring of ECHs became clear, and was informative for senior hydrogeologists.

The ‘Coolest Paper of 2015’ was awarded to Professor Fred Ogden of the University of Wyoming for his paper, “A new general 1-D vadose zone flow solution method”. This award has been established to help energise early career hydrogeologists, encourage discussion of new papers and share the most recent achievements in scientific groundwater knowledge.

### Network on Coastal Aquifer Dynamics and Coastal Zone Management (CAD-CZM)

CAD-CZM has developed a website that stores georeferenced data on the hydrogeological characteristics of coastal aquifers. Data from across the world can be shared and this exchange of ideas could suggest improvements to the monitoring and management of groundwater resources threatened by saltwater intrusion. Information on more than 50 coastal aquifers has been published on the website, with about 100 more due to be validated. Knowledge gathered on hydrological and hydrochemical processes will help improve vulnerability mapping, groundwater protection technologies, and institutional planning and management.

### Regional Groundwater Flow Commission

The Commission was active in Montpellier and at the Geological Society of America meeting in Denver during the same week. In Montpellier the session covered the topics of fault zone hydrogeology, petroleum hydrogeology, ecohydrogeology, numerical simulation of groundwater flow and basin hydrodynamics. In Denver the topics included characterizing groundwater flow systems at the watershed scale and use of a broad range of techniques such as classical hydraulic analysis (hydraulic heads and water levels), environmental tracers, and numerical modelling. The Commission then began preparing for the international symposium: “Characterizing regional groundwater flow systems: Insight from practical applications and theoretical development” which was planned for June 2017 in Calgary, Canada.



# Strategic overview series

One of the initiatives arising from the 2014 Working Group on Education report is the preparation of a series of Strategic Overview papers. The aim has been to inform professionals in other sectors of key interactions with groundwater resources and hydrogeological science, and to guide IAH members in their outreach activities.

In 2016 four further papers were prepared, in addition to the two published in 2015, entitled:

- Resilient Cities and Groundwater
- Ecosystem Conservation and Groundwater
- Human Health and Groundwater
- Groundwater and Global Change

Further topics are under discussion. All papers in the Strategic Overview series are available on the IAH website.

Condensing the most important aspects of a technical understanding of each topic, together with the key messages and priority actions into six illustrated pages has been a tough task, but the feedback we have received so far suggests this has been successfully achieved. We would like to thank Stephen Foster and Gill Tyson especially for all their work and skill in coordinating the production of these papers, and also thank the many contributing authors.

Find out more

[https://iah.org/knowledge/strategic\\_overview\\_series](https://iah.org/knowledge/strategic_overview_series)

## FINANCE FACT

£4800 budgeted for Forward Look activities was used for the production of the four titles in 2016.

Find out more <http://iah.org>

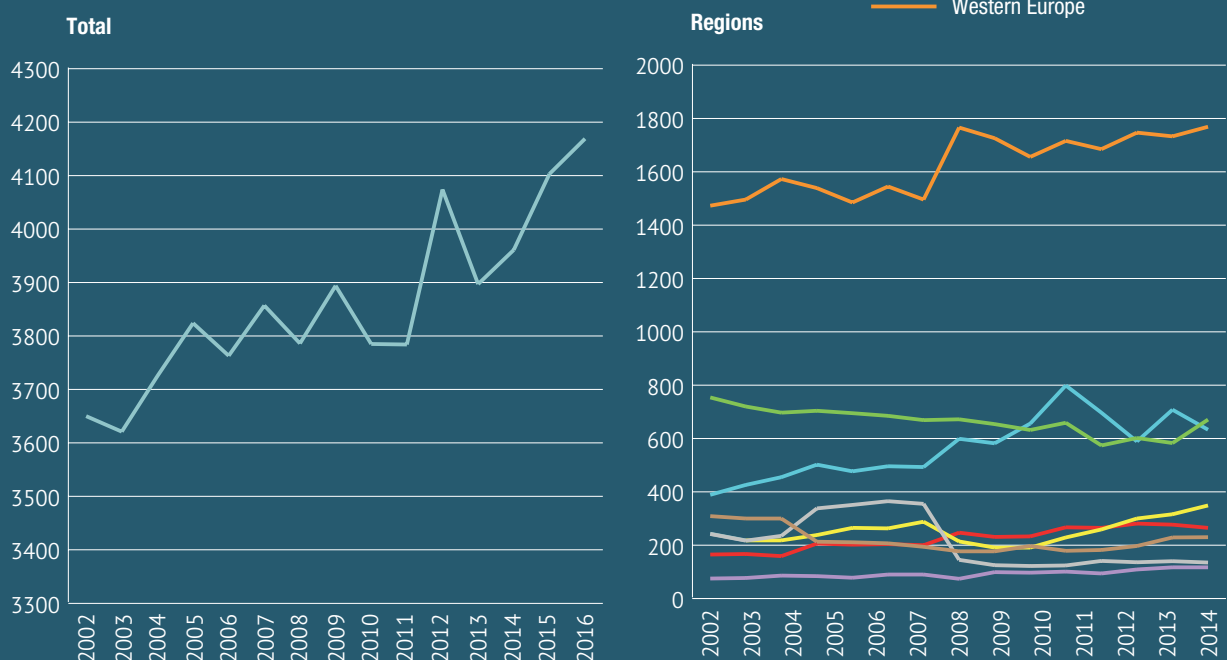




# Membership continues to grow

Membership increased to 4169, our highest number ever, continuing the overall upward trend. We have been keen to attract student members, who benefit from a much-reduced membership fee, and hope that they choose to continue enjoying the advantages of IAH membership as they head off to their chosen career paths. We continue to work on improving member benefits to ensure that IAH remains attractive to those working in the field of groundwater.

We gained members across most regions compared with 2015, though there were slight decreases in membership in Sub-Saharan Africa, and Australasia and the Pacific. The latter may be related to a downturn in the mining industry in recent years. The trend in the longer term has been upward in Western and Central Europe, and Australasia and the Pacific, though elsewhere numbers have remained stable or, in the cases of North America and Eastern Europe, have declined.



## Sponsorship scheme – support and nominations

IAH operates a scheme whereby members in higher income countries can sponsor IAH membership for a professional colleague in a developing country. In 2016 just over 250 hydrogeologists around the world were sponsored by individual IAH members, by National Committees or from IAH central funds. We would like to increase the number of sponsored members and Ireland and Australia agreed to increase their sponsorship, with other chapters also considering this. We welcome financial support, and nominations for those who might benefit from sponsorship, from our members and are very grateful too for donations in support of sponsored members, from those outside the IAH.

## FINANCE FACT

**In 2016 £5,084 of IAH central funds was used to cover the sponsorship of 159 members.**



## National chapters

IAH's national chapters bring scientific, professional and social benefits to our members and community, and enable the association to promote sound and sustainable groundwater use at a country and regional level. It is therefore encouraging to see further chapters being established and, for existing chapters, more members motivated to take part in their council elections. In both cases there is enthusiasm to do more for members and groundwater science and to ensure that this is underpinned by good governance.

### Stronger together

An agreement was made in Brazil that the Brazilian Groundwater Association (ABAS) should constitute the IAH national chapter. Similarly, in Tunisia, IAH has been represented by "Association Eau et Développement (AED)" since the end of 2015. The New Zealand Chapter is now on a firm footing, and has been supported by Wendy Timms, Vice-President for Australasia and the Pacific, from its earliest stages. Likewise, Igor Zektser, Vice President for Eastern Europe and Central Asia, who we sadly lost in 2016, worked hard to promote the establishment of new chapters in his region. As a result, a chapter was inaugurated in Kazakhstan. We were also very pleased to welcome an Iraqi Chapter to the IAH family, with an initial meeting held in February at the University of Technology in Baghdad. The IAH chapter in Turkey has been reactivated and working groups have been established for particular groundwater issues, in co-operation other professional bodies.

### Members rule

Several of our national chapters held elections in 2016, in accordance with their constitutions, which shows that the principles of good governance are being upheld. New committees in Greece, Japan and Spain, and a change in presidency in Slovakia, include representation from the breadth of our membership in academia, national geological surveys and consultancy, and benefit from the enthusiasm and experience of both early career members with more senior professionals. In Poland the General Assembly nominated Professors Andrzej Witkowski and Stanisław Staśko as national honorary members in recognition of their long service to hydrogeology and the Polish Chapter.

New Zealand National Chapter



Iraqi National Chapter





### National Chapters meet in Montpellier

A meeting of national chapter representatives at congresses has become a regular feature since 2010 in Krakow and allows chapters to share ideas on improving benefits for members. IAH President António Chambel welcomed 35 participants from 26 chapters to the meeting. Chapters considered how to improve web presence using a link to an existing site from the main website, a simple landing page for the chapter, or a fully-developed subsite. New sites have been developed for Portugal and Belgium.

### Learning from Portugal

The “Lessons in Hydrogeology” is an annual series of itinerant lectures established by the IAH Portuguese Chapter and supported by hosting institutions. The aim is to promote hydrogeology as a scientific and technical discipline amongst academic and professional communities with an interest in groundwater. They also focus on future or early career hydrogeologists.

Chapter member Rui Hugman explained that the same Lesson will travel to several institutions in Portugal over the coming year. Each lecture deals with a specific subject or case study and includes information about IAH and ECHN, followed by a period of open discussion.

The first edition of the Lesson, “From impossibility to achievement: the Osso da Baleia (Pombal) water well-field project”, was presented at the University of Porto by Manuel Abrunhosa to an audience of students and established professionals.

For students, these participative “classes” stand out from their normal curricular activities and challenge them to interact with the other participants and to look at hydrogeology from different perspectives. For the established professionals, the Lessons present an opportunity to enhance connections between the academic and research community and the real-world application of hydrogeological knowledge and technology.

This is an excellent idea that we would like to see tried by other chapters.





## International development

The IAH has a global reach through its more than 4000 members in 130 countries, and national chapters in over 40 countries. We recognise that we can achieve even more by joining forces with other groups. We extend our reach and influence by co-operating with organisations across the world with aims that complement ours.

### Aral Sea Basin

The new Kazakhstan Chapter was involved in planning for the international conference “Water Resources of Central Asia and Their Use” held in Almaty at the beginning of September. The event was organised by Kazakh ministries and institutes, supported by the Swiss Federal Department of Foreign Affairs and UNESCO. The aim of the conference was to enable all countries of the Aral Sea Basin to better manage water efficiency and scarcity, climate change, and economic and population growth at both national and regional scales. It looked at how experts in Central Asia are working across borders and sectors for effective solutions.



### GRIPP joins hands with the MAR Commission at Montpellier

IAH joined GRIPP (Groundwater Solutions Initiative for Policy and Practice), a global partnership led by the International Water Management Institute, with the MAR Commission particularly supportive. This promotes sustainable groundwater management through applied multi-disciplinary research and engagement with stakeholders at multiple levels, in particular in developing countries and related to agricultural use of groundwater. GRIPP has more than twenty partners from academia, NGOs, development organisations and the private sector.

### EuroKarst

EuroKarst is the European bi-annual conference on the Hydrogeology of Karst and Carbonate Reservoirs. It is organised every two years by the Universities of Neuchâtel (Switzerland), Besançon (France), and Malaga (Spain). It offers a platform for professional exchanges between field practitioners and academic researchers, with the IAH Karst Commission being particularly well represented. Springer have published a book containing 30 papers presented during the 2016 conference: “Eurokarst 2016 Neuchâtel: Advances in the Hydrogeology of Karst and Carbonate Reservoirs”.





### Africa Groundwater Atlas

The Africa Groundwater Atlas was launched online in May 2016. It was developed within the UPGro research programme by the British Geological Survey, supported by the IAH Burdon Groundwater Network for International Development (BGID), and other hydrogeologists across Africa. The Atlas had its formal launch at the 7th Rural Water Supply Network Forum in Abidjan, Cote d'Ivoire in November. More funding was secured from UPGro to develop it further over the next three years, with further support expected from BGID members.

### XIII ALHSUD Congress of hydrogeology

The XIII ALHSUD Congress and first Mexican Congress of Hydrogeology took place in Merida, Mexico in August, attracting 302 participants, mainly from Latin-America, including many students. The congress stressed cooperation between Latin-American countries, exchanging experiences from individuals working in associations, universities and multilateral consortia. Cooperation between the IAH Chapter in Mexico and the ALHSUD Chapter in Chile was established, relations between the IAH Chapters in Colombia and Mexico were renewed, and arrangements for ABAS to represent IAH in Brazil were taken forward. Proposals were provided for the Water Code in Chile, and there were also requests to recognise the groundwater profession's social responsibilities, by supporting community hydrogeological investigations in the Ica Region, Peru.

### MARSOL

Members of the IAH MAR (Managed Aquifer Recharge) Commission have been working with MARSOL, a European project co-financed by the European Union. This project has been evaluating and demonstrating how water of different sources and quality (such as desalinated sea water, river water, and treated wastewater) can be stored underground using different techniques. Improved knowledge on operations, maintenance and monitoring procedures, as well as regulatory and economic considerations, will help ensure sound and sustainable practices for technologies that will improve water availability. Training workshops were held in the Netherlands, Greece, Italy and Spain.

### Water-Rock Interaction International (WRI) Symposium

The 15th WRI was held in Évora, Portugal in October, chaired by José Manuel Marques of the IAH Portuguese Chapter (AIH-GP), under the auspices of the Water-Rock Interaction Working Group of the International Association of Geochemistry. It was attended by more than 300 delegates from over 30 countries. Major topics considered were ore deposits, geological sequestration of CO<sub>2</sub>, thermal and mineral waters, and water-gas-rock interaction. A post conference trip to the islands of the Azores focused on thermal and mineral waters, and high temperature geothermal energy in the field.





## Adapting to change

IAH publishes two book series and a scientific journal, all containing essential material for individuals undertaking groundwater-related research, work and study.

### Hydrogeology Journal

Since our publisher has merged to form Springer Nature, we are now associated with one of the world's largest and most influential research, educational and professional publishing houses.

#### Measuring our Journal impact

HJ's rising Impact Factor (2.109 for 2016) is great news. The number of downloads of HJ articles is high, too, showing that although HJ has a lower academic Impact Factor than other top journals, HJ is much read and used. This fits well with IAH's aims for the journal – it is scientifically innovative, and is practically useful for water resource management worldwide.

Usage and influence can now be tracked using 'Altmetrics'. This includes mentions on Twitter, Facebook, Google+, LinkedIn, research blogs, mainstream media coverage, Youtube, etc; bookmarks on reference managers like Mendeley; and citations on Wikipedia. Springer has partnered with Publons to help our peer reviewers receive recognition for their work, which can enhance their profile and show evidence of their expertise and contribution to science.

#### Free access to articles

Five of the most interesting from this year's 130 published articles were designated as "Editors' Choice" and made available free, to view and download. Authors can also pay for HJ readers to have free access to their articles through 'Open Choice'. Springer offer IAH members a 25% discount on their price for this. Authors and subscribers can now share articles swiftly and legally through Springer Nature's 'SharedIt', to social media platforms, repositories, websites, networks and via emails. SharedIt is accessed by over 200 media outlets, including the BBC, The Economist, WIRED and The New York Times. The list also includes many leading science bloggers.

### Green and Blue Books

Publishing IAH 'International Contributions to Hydrogeology' (blue) books and 'Selected Papers in Hydrogeology' (green) books continues to be intermittent. Sales have also fallen, despite the attractive discount available to members. We have, though, achieved successes in publishing two further books in our Selected Papers series, and work is underway on International Contributions 29 on groundwater investigations.

Authors often prefer publishing papers in indexed journals, which have better opportunities for citation. If our books could achieve an ISSN number as a series, this would cover some, though not all, citation factor indices, so this will be pursued. Council agreed that a small honorarium of up to €500 could be paid to help allay authors' costs. Royalty income from books would be used to fund this, with the aim of producing more and better books, and increasing income.

2016 releases: Solving the Groundwater Challenges of the 21st Century, edited by Ryan Vogwill, which looks at impacts that human activities have on groundwater systems; and Karst without Boundaries edited by Zoran Stevanović, Neven Krešić and Neno Kukurić, which presents papers from the conference held in June 2014 in Trebinje, Bosnia and Herzegovina.

#### Find out more

<https://iah.org/publications>



# New IAH Council takes office

The results of the 2016 IAH Council elections were declared at the Association's Annual General Meeting in Montpellier on 26 September. The democratic health, institutional transparency and organisational energy of IAH benefit greatly from regular changes to the Council's composition. All paid-up members are eligible for election to Council, and considerable efforts were made to encourage members to stand. The nomination period opened on 1 January, with calls on the website, newsletter and journal alerts to publicise this, and closed on 31 March. Nominations were received from IAH national chapters and commissions and networks as well as from individual members.

Voting for the new IAH Council opened on 1 July and closed on 23 September, with 1481 members voting representing a 36.8% turnout. This was a small improvement on both 2008 and 2012. Our on-line voting partner tells us this compares well with turnouts for similar associations. Members who voted commended the ease and efficiency of the on-line system but also regretted the lack of more contested posts.

We were pleased to see a strong team result from the elections, with 6 new officers taking up posts, although we were a little disappointed that more candidates did not step

forward to provide competition for more of the posts, with only 2 posts contested in his way. The new team is shown in the table below.

The outgoing President, Ken Howard, on behalf of all the members of the Association, thanked the retiring council for its hard work. The new council was in turn welcomed by the incoming president, and held its first meeting in Montpellier on 28 September.

Post	Name	Country
President	António Chambel	Portugal
Secretary General	Bruce Misstear	Ireland
Vice President, Finance & Membership	Teódora Szöcs	Hungary
Vice President, Science & Programme	David Kreamer	USA
Vice President, Asia	Makoto Taniguchi	Japan
Vice President, Australasia	Wendy Timms	Australia
Vice President, Eastern Europe & Central Asia	Natalia Vinograd	Russia
Vice President, Western & Central Europe	Marco Petitta	Italy
Vice President, Latin America & the Caribbean	Carlos Molano	Colombia
Vice President, Middle East and North Africa	Ahmed Fekri	Morocco
Vice President, North America	Joanne Thompson	Canada
Vice President, Sub Saharan Africa	Callist Tindimugaya	Uganda



# Governance matters

## Council and Executive meet

The Executive Committee met in Dorchester-on-Thames, UK, in February and June and both the outgoing and incoming Councils held meetings at the Montpellier Congress. These meetings provide opportunities for council members, as the association's directors and trustees, to consider issues related to the governance and management of IAH and take any decisions that are needed.

Council reviewed progress on Forward Look, education, income diversification, publications and a proposal for membership fee increase for 2017. Incoming president António Chambel welcomed the new Council and explained how Council, Executive and Secretariat link and the key role of regional vice presidents in supporting national chapters in their region.

## Forward Look

Many of the improvements in member benefits and services envisaged in the Forward Look have been completed or initiated. Our new website is up and running, with new developments continuing. The new commission and network structure is well established and our Early Career Network flourishing. Membership is rising and congresses are well attended. It was acknowledged that there was more to be done. Achieving the aim of 5,000 members by 2020 seems now unlikely, but continued efforts by members particularly to attract students and those in the early stages of their careers would help the association to be much stronger in the future.

## Education

We have increased the use of our reserves over recent years to support our educational and charitable objectives. It was agreed that the Strategic Overview Series should be augmented with new topics, and that our activities should be extended to webinars and short courses to reach a broader audience. The journal and books would continue to be a publishing priority for IAH.

## Income diversification

Council confirmed the need to continue efforts to diversify and increase income. Robbie Dow and the Executive Manager, John Chilton, presented proposals to establish a network of corporate supporters to help increase annual revenue through regular sponsorship. We should aim to reach out to sponsors for targeted support for specific events and products, which would enable IAH to better deliver its mission.

## Managing publications

There were increasing costs for managing our publications. A recommendation from books editor Nick Robins for an honorarium for authors and editors was approved by the new Council. Costs for our Editorial Office Manager are now shared between IAH and our Hydrogeology Journal publisher, Springer, following their merger with Nature. Future costs may increase. IAH is fortunate to have been able to depend on Executive Editor Cliff Voss for many years, with the support of his employer USGS and without direct cost to the IAH, though this arrangement may not continue indefinitely.



# Financial performance reviewed

We have gradually drawn down our reserves in recent years, as we have the increased use of resources for charitable and educational activities and member services. At the same time, there have been increasing costs for managing our publications. A recommendation from books editor for an honorarium for authors and editors was approved by Council. Costs for our Editorial Office Manager are now shared between IAH and our Hydrogeology Journal publisher, Springer, following their merger with Nature and a review of their own overheads. Future costs may increase. IAH is fortunate to have been able to depend on Executive Editor Cliff Voss for many years, with the support of his employer USGS and without direct cost to the IAH, though this arrangement may not continue indefinitely.

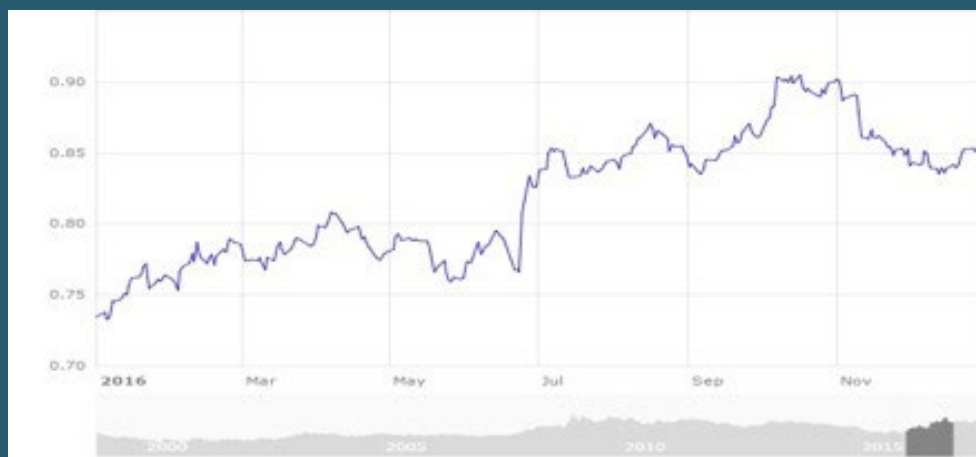
We are required to prepare our accounts in pounds Sterling (GBP). Although our membership reached a record high in 2016, at 4169, overall income in 2016 was £5000 lower than expected, which can be attributed partly to the high value of the pound against other currencies earlier in the year (most of our income is in euro). Despite caution with spending, total expenditure was £6000 above the set budget, meaning that overall there was an operating deficit of £11,000 on our

routine activities. However, there was a notable weakening of the pound after the UK Brexit vote at the end of June. Converting euros to pounds to cover our routine costs, at the more favourable exchange rate, led to a small surplus of £3,705 at the end of the year. This compares with a deficit of £39,064 in 2015 and clearly marks a significant improvement.

## Implications of the UK's Brexit vote

One of the consequences of becoming truly global is that we need to operate in sterling, US dollars and euros. As a part of IAH's overall risk management strategy, and especially since the financial crash of 2008, we have maintained a close watch for likely major currency fluctuations and manage our funds in the three currencies accordingly. As an international professional association with a global distribution of members, IAH obviously has to keep an eye on major political events especially if they are likely to have significant economic and financial implications. On 23 June, voters in the United Kingdom

chose to leave the European Union. Since that time sterling has weakened against other major currencies. Since we receive much of our income in euros this has enabled us to 'buy more pounds' when we convert this income to sterling to cover our day to day costs. We will continue to monitor events and consult with our accountant, bank and the Charity Finance Group and can give reassurance that we are making every effort to ensure the security of our funds. In the longer term, there should be no major implications for the way in which IAH can work as a UK registered company and charity.



Euro to pound exchange rate, 2016 (European Central Bank), showing how the euro has become stronger against the pound since 23 June.



# Statement of financial activities for the year ending 31 December 2016

Incoming resources		£	£	EUR(€)	USD(\$)
Membership fees			200,730	235,215	247,540
Contract and subvention income			32,367	37,928	39,915
Investment income			144	169	178
Donations			17,809	20,869	21,962
Royalties			20,199	23,669	24,909
Other income			0	0	0
<b>Total resources received</b>			<b>271,249</b>	<b>317,850</b>	<b>334,504</b>
<b>Resources expended</b>					
Member services	Salaries	22,957			
	Printing and publications	109,102			
	Hydrogeology Journal Editorial Office	17,712			
	Other	16,595	166,366	194,948	205,163
Donations and grants payable			5,084	5,957	6,270
Support costs	Salaries	27,204			
	Travel and subsistence	39,705			
	Printing, stationery and database administration	11,899			
	Website development	2553			
	Other	3546	84,907	99,494	104,707
Management and administration of the charity	Salaries	15,436			
	Strategic review and training	5098			
	Accountancy fee	1800			
	Other		22,334	26,171	27,542
Finance costs (bank charges) and depreciation			4422	5182	5453
<b>Total resources expended</b>			<b>283,113</b>	<b>331,752</b>	<b>349,135</b>
<b>Net income / expenditure</b>			<b>(11,864)</b>	<b>(13,902)</b>	<b>(14,631)</b>
Net foreign exchange gains / (losses)			15,569	18,244	19,200
<b>Net incoming resources</b>			<b>3,705</b>	<b>4,342</b>	<b>4,569</b>
<b>Balance brought forward at 1 January 2014</b>			<b>97,956</b>	<b>114,785</b>	<b>120,799</b>
<b>Balance carried forward at 31 December 2014</b>			<b>101,661</b>	<b>119,126</b>	<b>125,368</b>

## Balance sheet as at 31 December 2016

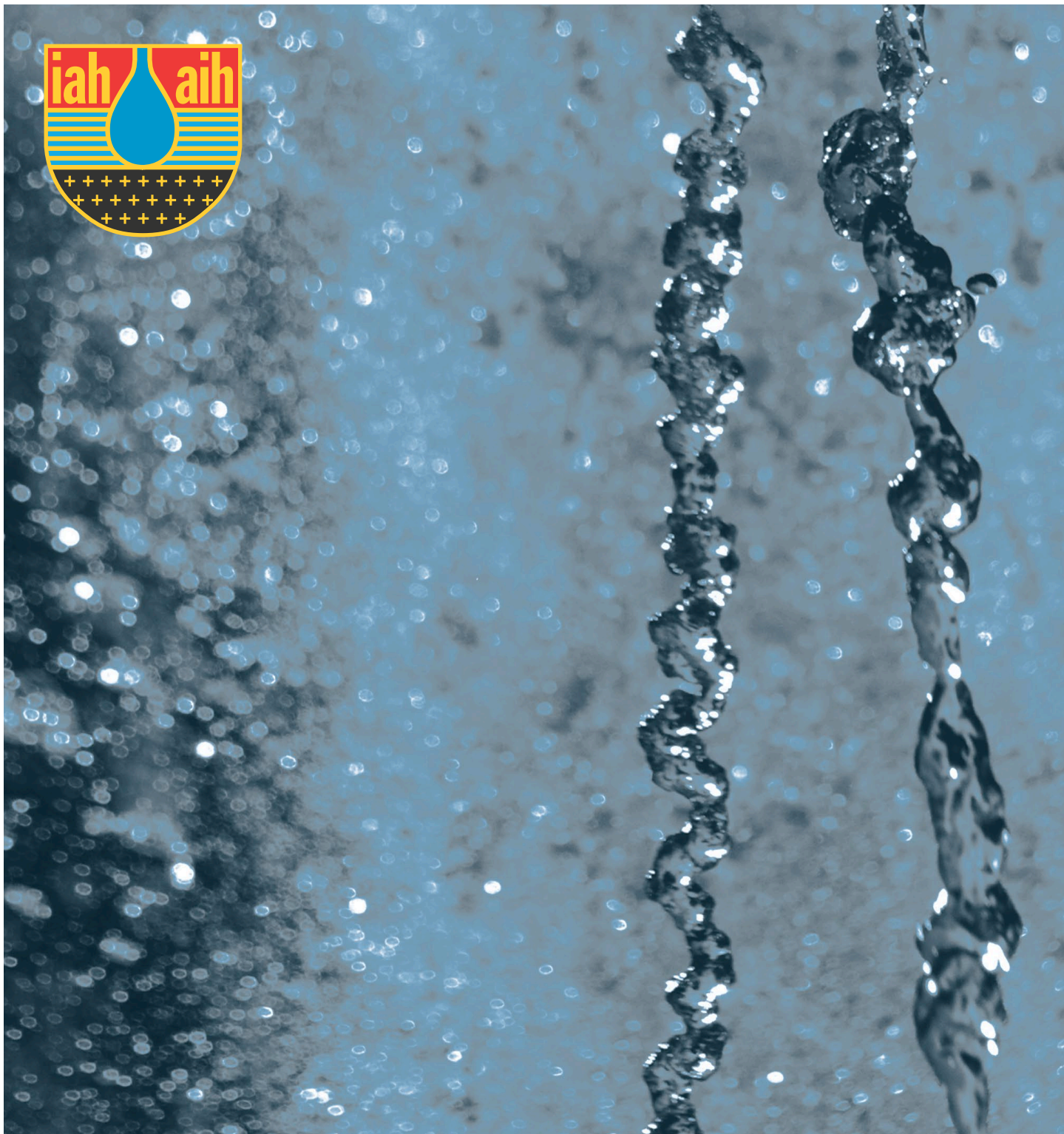
	2015	2014	2015	2014	2015	2014
	£	£	EUR(€)	EUR(€)	USD(\$)	USD(\$)
<b>Fixed assets</b>	1596	2514	1870	3100	1968	2946
<b>Current assets</b>						
Cash and debtors due	107,353	100,183	125,796	117,394	132,388	123,546
<b>Creditors</b>						
Amounts due within one year	(7288)	(4741)	(8540)	(5556)	(8988)	(5847)
<b>Net assets</b>	101,661	97,956	119,126	114,939	125,368	120,645
Represented by:						
Unrestricted Funds	64,506	60,916	75,588	71,381	79,549	75,122
Burdon Fund	37,155	37,040	43,538	43,403	45,820	45,678
<b>Funds</b>	101,661	97,956	119,126	114,785	125,368	120,799

**Statement by the Association's reporting accountant:** These summarised accounts are extracted from the full financial statement of the Association which were subject to an unqualified report by Locke Williams Associates LLP, Blackthorn House, St Pauls Square, Birmingham, B3 1RL. The independent examiners have confirmed that the summarised accounts are consistent with the full annual financial statements and the Trustees' Annual Report of International Association of Hydrogeologists for the year ended 31 December 2016. The annual report and accounts were adopted by the IAH Council on 24 September 2017 and were submitted to the Charity Commission and the Registrar of Companies.

These summarised accounts may not contain sufficient information to gain a complete understanding of the financial affairs of the Association. For further information, the full accounts, the reporting accountants' report on those accounts and the trustees' annual report should be consulted; copies of these can be obtained from the IAH International Office or downloaded from [www.iah.org](http://www.iah.org).

Throughout this report the conversion from sterling (£) to euro (€) is at the rate of €1.1718 = £1 and to US dollar (\$) is at the rate of \$1.2332 = £1.





# **International Association of Hydrogeologists**

## **the World-wide Groundwater Organisation**

IAH Secretariat

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