

International Association of Hydrogeologists
the World-wide Groundwater Organisation

ANNUAL REPORT 2015



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

IAH Annual Report

We have adopted a similar format to that of last year for this summary of IAH's activities and finances during 2015, again endeavouring to prepare a report which is readable and well-illustrated. We have aimed to provide the information in an accessible way by picking out key statistics and figures on the ways in which the different parts of IAH use our funds to help meet the association's educational and charitable objectives.

This year, we have highlighted not only the scientific activities of our commissions and networks, but also some of the ways in which we bring groundwater science to broader audiences, through publications, advocacy and training. We also report on the changing ways in which we can support the growing IAH membership and on the evolving world of scientific publishing. In our financial reporting, the challenges posed by the fluctuations in value of the three currencies in which we operate are highlighted.

We have also provided links to further details for those who are interested. We hope you like this approach and we would be very happy to receive feedback.

Questions or comments?

Email info@iah.org

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below left: Early Career 'water' photos for World Water Day (see page 10)
below right: 42nd IAH Congress in Rome



President's message

With membership reaching record levels, IAH Council, the Executive Committee and the Secretariat worked hard throughout 2015 to ensure good progress in all IAH programmes and endeavours. The Rome Congress proved to be an outstanding success, and the majority of our Commissions and Networks reported commendable levels of activity. Many National Chapters also reported busy local agendas.

During the year, I was able to represent IAH at scientific meetings, workshops and field excursions in Italy, the USA, China, Romania, Lithuania, France (three times), Singapore (twice), UK (twice), Ireland and eastern Canada, delivering six keynote papers and two opening addresses. I sincerely thank the University of Toronto and various host organisations for covering much of my travel costs to attend these events, thereby minimising the financial burden on the association. In fact, as highlighted elsewhere in this report, contributions from meeting hosts, international agencies and employers represent a substantial 'hidden income' to the association, which is rarely publicised, but very gratefully acknowledged.

The IAH Executive held two 3-day meetings during the year, the first in February at the offices of UNESCO in Paris and the second in early July on the campus of Trinity College, Dublin. Key items of business ranged from the somewhat mundane, but extremely important and long overdue changes to the Rules of the Association, to more upbeat issues such as preparing for the 60th Anniversary celebrations in 2016. I am very grateful to Bruce Misstear, ably supported by John Chilton, for their meticulous work revising the rules, and to Willi Struckmeier and António Chambel who, working with the French and German National Chapters, shouldered much of the responsibility for planning events and activities for the anniversary year.

The annual meeting of Council was held in Rome during September. For the most part, it was a spirited affair, buoyed by discussions of potential anniversary events and stirred by the arrival of a large delegation from the Korean National Chapter who delivered a passionate bid for the 2018 IAH Congress and were rewarded for their labours. During the meeting, Council approved licence extensions for all Commissions and Networks up for renewal, and welcomed a new Commission on Groundwater and Energy. It should be noted that while most facets of hydrogeology are now covered, IAH still lacks a Commission or Network dealing specifically with the role of groundwater in agriculture.

As reported regularly, we have made a concerted effort in recent years to improve services to members, a venture that has enjoyed considerable success. The reputation of Hydrogeology Journal continues its upward trajectory and the quality of the website and online information bulletins (Newsletters and Members' Alerts) has improved immeasurably. Stephen Foster and Gill Tyson have started to deliver titles in IAH's new Strategic Overview Series, and the Karst Commission is close to delivering its World Karst Aquifer map. These activities and enhancements come at a cost to the association and the impact on our budgetary reserves can be seen. Despite its popular success, the Rome Congress did not generate the small financial windfall that we regularly enjoy from such meetings and, as we look ahead, we need to develop a means that guarantees income from large, well attended meetings. Further work is also required to ensure all other opportunities for income diversification are fully explored.



Professor Ken Howard
IAH President



Commissions and networks

The IAH Congress each September provides an opportunity for our commissions and networks to bring their work to the attention of congress delegates and to attract new participants, ideas and energy to their activities. Their efforts are not, however, confined to congress, but take place globally by convening meetings, undertaking projects, and organising training courses, often with partners, and publishing the outputs of their work.

Managed Aquifer Recharge

Fourteen authors representing 11 countries made presentations at the congress plenary session organised by the Commission on Managed Aquifer Recharge (MAR). At its commission meeting, progress reports were received regarding the rapidly-developing inventory of MAR projects, extending to 1200 sites in 57 countries, and which will be further advanced in collaboration with the International Groundwater Resources Assessment Centre (IGRAC). The growing activity of national MAR networks in China, Australia, Italy and Spain was also highlighted.

Coastal Aquifer Dynamics and Coastal Zone Management

At its meeting during congress, Coastal Aquifer Dynamics and Coastal Zone Management (CAD-CZM) Network Director Giovanni Barrocu described how scientific and technical information on coastal aquifers was being made available for the benefit of water resources researchers, managers and other stakeholders. This is being done via questionnaires from which checked and validated data on 39 coastal aquifers in Asia, America, Europe and Africa had been uploaded to the network's website. This work was also presented during the poster sessions, attracting the interest of congress participants to join the network and contribute to the aquifer database. Giovanni subsequently reports that network membership has grown to 241 with data from 65 aquifers now checked and available.

The Regional Groundwater Flow Commission

The Regional Groundwater Flow Commission (RGFC) also had a fruitful general meeting during congress. Work is to begin on a book describing theoretical and practical developments in regional groundwater flow. IAH encourages cooperation between Commissions and Networks. A highlight of the congress was the invited presentation to the RGFC session by Richard Taylor, Co-Chair of the Commission of Groundwater and Climate Change about assessing the resilience of groundwater use at low latitudes by looking at groundwater discharge observations.



Network for Groundwater in Urban Areas

Apart from convening well-attended urban sessions at congress, IAH's Network for Groundwater in Urban Areas provided contributions to an EU COST action workshop in Romania on 'Current trends and approaches in urban hydrogeology'. At a more global level, network chair Ken Howard was invited to join an advisory group charged with steering UNESCO's IHP-Theme 4 'Water and Human Settlements of the Future'. The group met in Paris in July and November. Another network activity was the development and delivery of a two hour session on 'Urban Groundwater – Ignore at Your Peril' at the UNESCO-ARCEAU COP-21 Conference on Megacities, Water & Climate in Paris in December. Preparatory work for the session was undertaken by Stephen Foster with the strong support of Ricardo Hirata (Brazil) and Bruno Nguyen (UNESCO-IHP).

IAH's Groundwater Outreach Commission

IAH's Groundwater Outreach Commission reported at congress on its activities, with the primary objective of recruiting new members to assist with the task of providing tools, refining methods and lending support to events which help groundwater professionals communicate our science to policy makers. The commission was pleased to be one of the sponsoring organisations for the Second National Colloquium – Groundwater in Mexico in November. Communication of the basics of groundwater science to decision-makers and other non-specialists is seen as an essential basis for water management policy in Mexico. The commission co-convened and contributed to several meetings in the US in 2015 at which groundwater management and protection issues were drawn to the attention of regulators and lawyers in ways that would resonate with them.

Commission on Karst Hydrogeology

Chair of the Commission on Karst Hydrogeology Nico Goldscheider was among the invited keynote lecturers in Rome, presenting novel experimental and modelling approaches in karst hydrogeology and describing the commission's 'World Karst Aquifer Mapping Project'. The Karst Commission held its annual meeting at the Birmingham karst conference in June. The conference attracted 120 delegates from 22 countries seeking to improve their understanding of the complexities of groundwater occurrence and flow in karstic aquifers and the associated management and protection concerns and environmental impacts. Training workshops on fluorescence, karst water geochemical modelling and groundwater ecology were also offered to delegates and field trips to the Silurian Limestones of Dudley, the Chalk of Wiltshire, the Jurassic Limestones of Lincolnshire and the Carboniferous Limestone of Derbyshire were particular highlights of the conference. The photograph shows some of the group during their visit to underground canals and limestone mines in Dudley.

FINANCE FACT

£3650 was provided from our Education and Development Fund as the final contribution to the preparation of the karst map of the world.



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

Find out more

<https://iah.org/groups/commissions-networks>

Strategic overview series

The need for IAH to have well prepared and authoritative papers on specific topical issues in groundwater has been under discussion for some time, most recently by our working group on education. We were therefore pleased to see such plans realised in 2015 with the release of the first two in a series of Strategic Overview Papers, dealing with 'Food Security and Groundwater' and 'Energy Generation and Groundwater'. At the close of the year further titles were under development.

The papers focus on interfaces between groundwater resources and hydrogeological science and other key sectors – dealing with potential impacts and policy implications in both directions. They aim to provide an authoritative summary for each topic drawing on the association's collective international experience. Production has been led by Past President Stephen Foster and Gill Tyson, with contributions from IAH members from around the world.

Find out more

<https://iah.org/groups/commissions-networks>



Training and courses

A training and courses area on our website was launched in April 2015, also being one of the recommendations of our education group. As well as featuring short courses, field courses and webinars, it includes details of degree programmes in hydrogeology. We encourage submissions by providing an online form for course providers to use.

As you will read throughout this report, training and educational sessions take place at IAH congresses organised by IAH's Early Career Hydrogeologist's Network (ECHN), as well as by IAH's topic based commissions and networks, and regionally via some of our National Chapters. IAH continues to encourage these and welcomes suggestions and volunteers.

Find out more:

<https://iah.org/knowledge/training>

<https://iah.org/knowledge/education-plans>

FINANCE FACT

£4015 budgeted for Forward Look activities was used for the production of the first two strategic overviews.



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

Evaluating IAH member benefits

In all of the activities described in this report which IAH undertakes to meet its scientific, educational and charitable objectives, our members are our strongest resource. It follows that we need to treat them as such and always listen to their views. One way of assessing how we are doing is by regular member surveys.

During 2015 we undertook a survey to seek opinions, feedback and ideas for new benefits and services which IAH might provide to its members and supporters. Overall a total of 180 replies were received from around the world – an increase of almost 75% from our previous survey in 2012. Respondents represented a good span of ages, with a fifth being female.

We were reassured by the largely positive feedback concerning IAH's price, value and services, and that so many would recommend the association to others. Some of the responses and suggestions require more detailed thought and analyses; as always the information and ideas provided by members and supporters will feed into IAH's future plans and priorities.

While these percentages are high and encouraging, we should not rest on our laurels, but continue to make as many improvements to member benefits as our modest budget will allow.

SURVEY STATS

80% of respondents felt IAH gives good value for money

83% believed that IAH fees are reasonable/the right price

82% would recommend IAH to colleagues



...it would be good if IAH would offer short courses on specific topics (GIS application to hydrogeology, statistics for hydrogeology...)

...provide information on short courses

...organise webinars

...development of the next generation of hydrogeologists is important

...like the move to social media

...include national chapter websites within IAH website

National chapters

IAH's national chapters are a valuable means of bringing scientific, professional and social benefits to our members and community, and also enable the association to promote sound and sustainable groundwater use at a country and regional level. Two of the ways in which this is done are by holding technical meetings and issuing awards in recognition of service and achievements. Below are some examples of chapter activities undertaken in 2015; all demonstrate a place for smaller, focused events in the mix of scientific activities which IAH seeks to provide.

Hard rock hydrogeologists meet in France

The 20th Conference of the French Chapter, dedicated to the topic 'Hard Rock Aquifers: up to date concepts and practical applications' took place in La Roche-sur-Yon, Vendée, France in June. Overall 180 participants were present for the two days of the conference, 90 went on the field trip on the first day and 32 on the geological and touristic excursion on the last day on which they were able to observe spectacular rock outcrops and thermal springs. Participants from 20 countries were a well balanced mix of researchers, hydrogeologists from geological surveys, water agencies, local and national administrations, and from consultancy companies and industry. Our French colleagues are to be congratulated for the high technical standard and excellent organisation of the conference and associated field trips.



Rock outcrops and thermal spring in the Manis and Mallieuvre region, France



Awards presented at chapter meetings

The IAH Netherlands Chapter, together with the Netherlands Hydrological Society (NHV), organised a symposium at which more than 100 participants heard presentations about the value of groundwater. They recognised that the issues IAH has been tackling in the GEF Groundwater Governance project also resonate very clearly at the national level. At the meeting, Professor Theo Olsthoorn, chair of the Netherlands Chapter, received a Recognition for Special Merit from the NHV for his work on groundwater hydrology in the Netherlands, only once before given to a groundwater professional.

The US Chapter selected Michael Campana, Professor of Hydrology and Water Resources at Oregon State University, as the 2015 recipient of their International Service Award. The presentation took place during the 2015 Geological Society of America's Annual Meeting. The award recognises the efforts of hydrogeologists based in the US who have shown outstanding commitment to assisting the international community with groundwater-related needs. Michael was selected because of his scientific, humanitarian, and educational efforts and accomplishments related to international hydrogeology.

The British Chapter's 2015 Ineson Lecture meeting, convened jointly with the Hydrogeological Group of the Geological Society of London and attended by 123 delegates, included a very entertaining and educational Darcy Lecture from Rainer Helmig, providing insights into the technologies and challenges of storing gas underground. The afternoon session saw the 2015 Ineson Lecture, in which David Lerner of the University of Sheffield reviewed his research career in an entertaining fashion, from observing leaky pipes and developing techniques for the accurate assessment of urban recharge; to diffuse urban groundwater pollution, including organic contaminants and nitrate, and novel ways of testing for urban contaminants. During the meeting the 2015 John Day Bursary was presented to Helen Robinson of the University of Glasgow. The bursary is presented annually to support a student to undertake hydrogeology-related fieldwork outside Britain as part of their postgraduate studies. Helen presented a poster on her geothermal research at Menengai in Kenya.



Participants at the groundwater vulnerability conference in Poland

Groundwater vulnerability reviewed in Poland

In June 2015 the Polish National Chapter and the University of Silesia hosted a conference on 'Groundwater vulnerability: from scientific concept to practical application' at Ustron in the Carpathian Mountains close to the Slovak border. The Polish Chapter has organised previous conferences at this location, including an earlier meeting on groundwater vulnerability in 2004 from which papers were published in IAH book 'Selected Papers, 11'.

The conference comprised three and a half days of oral presentations, a short poster session and a whole day field trip. There were 65 participants, about half from within Poland and the others from a wide range of countries. Small can be beautiful, and a topic-focused meeting such as this brings together like-minded groundwater colleagues, with some excellent material in well-crafted presentations with plenty of content and knowledgeable questions and discussion. Overall, it was an excellent meeting with substantial contributions from young professionals to both poster and oral sessions. Our Polish colleagues can always be relied on to organise a good meeting and to be welcoming hosts, and our thanks go to Jacek Rózkowski, Andrzej Witkowski and all the members of the organising committee.

Early Career Hydrogeologists' Network

The IAH Early Career Hydrogeologists' Network (ECHN) is now five years old and continues to encourage and support involvement in IAH activities of early career professionals, about 200 of whom came to the Rome Congress. 100 attended the ECHN Annual General Meeting, at which activities during the year were reported, highlighting the establishment of more ECHN groups at national level. After the success of previous ECHN lunchtime sessions, Cliff Voss, Hydrogeology Journal Editor in Chief and members of his editorial team hosted a session on how to write 'knock-out papers', attended by more than 100 congress delegates.

Encouraging young scientists

Although IAH has long recognised its experienced professionals by its awards, more recent initiatives are intended to encourage scientists at earlier stages of their careers. Thus, during the IAH AGM in Rome the ECHN 'Coolest Paper of 2014 Award' was presented to António Hernández-Espriu from UNAM, Mexico for his paper on the adaptation of DRASTIC for mapping groundwater vulnerability in aquifers subject to differential land subsidence.

The Regional Groundwater Flow Commission, with the support of the ECHN initiated a competition in Rome for the best research paper on regional groundwater flow. Four prizes were awarded during the closing ceremony, with shared first prize awarded to Jiale Wang of the China University of Geosciences, Wuhan and Ádám Tóth of Eötvös Loránd University, Budapest with second prize shared between Giorgia Lucianetti from Roma Tre University, and Szilvia Simon, also from Eötvös Loránd University. Finally, the 'Young Karst Researcher Prizes' for 2015 were awarded by the IAH Karst Commission to Amaël Poulain and Caroline Dubois from Belgium and Sandra Oehlmann from Germany.

Find out more

<http://echn.iah.org/>

Prize winners Szilvia, Jiale, Giorgia and Ádám with IAH President Ken Howard and Commission Chair Judit Mádl-Szőnyi.



Advocating for groundwater in the global arena

IAH members and other hydrogeologists need no reminding of the underlying importance of groundwater resources to all areas of human activity. Getting this message across to other water colleagues, to a wider range of scientific disciplines and more broadly into the international professional, political and public arenas is an essential objective for IAH. Taking part in, and contributing to, global water events is one way in which this is achieved.

World Water Day

World Water Day was celebrated as usual in March with the 2015 theme of water security. IAH produced a four page guide highlighting the critical importance of groundwater for food, health, energy, ecosystems, urbanisation, industry and equality which was included in the promotional and educational material available from the World Water Day website. Many of these themes have been taken up in more detail by IAH in the Strategic Overview Series described on page 6.

The main international event for World Water Day took place this year in New Delhi, at which IAH was represented by senior members of our Indian National Chapter. The guide mentioned above was provided to senior staff of the UN and the Government of India, the UN World Water Development Report was released and the 2015 Stockholm Water Prize winner was announced as Sh. Rajender Singh, pictured with our Indian IAH colleagues.

IAH's Early Career Hydrogeologists' Network (ECHN) entered into the spirit by inviting its members to participate in national events and online, suggesting ways in which they could play an active role in improving water management as a driving force for improved water security. The ECHN website also featured a call for 'water' photographs to mark the day.

Dushanbe: 'Water for Life Decade'

IAH Secretary General Shammy Puri represented the association at a High Level Round Table co-convened with UNESCO-IHP at a conference in Dushanbe to close the UN Decade: Water for Life 2005–2015. The Round Table focussed on 'Water cooperation for achieving water-related goals'. The presentations and discussions were devoted to the achievements of the Decade, in particular the delivery of WASH programmes under the MDGs. It was noted that significant progress had been made but there was still room for improvement, particularly in operation and maintenance of water and sanitation facilities. A strong case was made by Ministers in the final Declaration that water-related goals should be included in the new Sustainable Development Goals to be adopted by the UN later in the year, and this has indeed happened.



Stockholm Water Prize winner Sh. Rajender Singh (centre) with Dr DK Chadha (right), and Dr D Saha of the Indian National Chapter

Find out more

<https://iah.org/wp-content/uploads/2015/03/2015WWD.pdf>



World Water Forum

IAH Vice President for Science and Programme Coordination António Chambel represented the association at the World Water Forum (WWF) in Korea to participate in two meetings dedicated to i) launching the outputs from the GEF groundwater governance project and ii) the 'Global groundwater vulnerability to floods and droughts' map prepared by UNESCO-IHP and BGR. António was a round table panelist in the first and talked about the role of IAH in WHYMAP in the second.

This launch event saw the formal end of the GEF project. Presentations focused on the three main products of the work, the global diagnostic, the vision and the framework for action. Panellists from the partner organisations answered questions and contributed to a wide ranging discussion amongst the 65 participants. Issues raised included the positive and negative roles of incentives, ownership of groundwater, links between governance of groundwater and land, differences in governance between aquifers with different levels of exploitation and poor usage of science-based information for groundwater management, to cite but a few.

All of these issues had been mentioned in the project documents, which attests to the project's comprehensive coverage of groundwater governance. Feedback since the WWF confirms the success of the side event, the excellent collaboration between the project partners and the quality of the project outputs. Our efforts now turn to making the recommendations from the project into the reality of improved governance and management of groundwater.

Find out more:

<http://www.groundwatergovernance.org/>



FINANCE FACT

UNESCO provided £1900 for Dushanbe and KIGAM £3500 for António's visit to Korea. Both are included in the contributions in kind as described on page 17.



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

Supporting international development

The Burdon Fund has long been a focus of IAH's efforts to meet its charitable objectives, largely by supporting hydrogeologists in Sub-Saharan Africa in their efforts to sustainably develop groundwater for poverty reduction.

Its roots go back many years to the establishment of a charitable fund by the Irish Chapter in memory of David Burdon, a colleague who devoted much of his career to the developing world. The associated IAH network was established in 1987 to help enable the fund to be used effectively; over the years we have endeavoured to make existing and new knowledge more widely available and facilitate opportunities for networking and training.

It has been recognised for some time that the simple name – Burdon Network – did not properly convey its objectives and activities. In particular, many of the younger members of IAH, both those who could contribute to and benefit from the activities of the network, were unfamiliar of its origins. Thus in 2015 the name 'Burdon Groundwater Network for International Development' was introduced, making quite clear its focus on support for groundwater and groundwater professionals in the international development sector.

Two examples of recent activities follow.



Regional course on groundwater management

Following three successful courses organised by the Africa Groundwater Network and part supported by the Burdon Fund in Lusaka, Bamako and Porto Novo, water professionals in the Niger River Basin identified the need for a course on groundwater within a river basin water management framework.

A further such course was held in Ouagadougou in August 2015, delivered in French to 18 participants of whom 11 were women. They were mainly Niger Basin water users and other water sector professionals from national and private institutions of member countries of the Niger Basin Agency, Benin, Burkina Faso, Cote d'Ivoire, Guinea, Niger, and Togo. The course aims were to promote sustainable groundwater resources management and raise awareness of the importance of groundwater resources in Africa, build capacity for improved groundwater management, enhance the sharing of information and improve understanding of groundwater processes and their interaction in a river basin context.



FINANCE FACT

The Burdon Fund contributed £3200 towards the cost of the regional course.

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



Africa Groundwater Literature Archive

The successful, sustainable development of groundwater resources in Africa is critical to the continent's future economic and social improvement, and food security. This depends on reliable information, which in Africa is notoriously hard to find and access. In November 2015 the Africa Groundwater Literature Archive was launched by the British Geological Survey, in collaboration with the Burdon Groundwater Network for International Development, to help make such vital information more available to everyone.

The Groundwater Literature Archive is a searchable online database of nearly 7000 references to published and unpublished literature about groundwater in Africa. This includes thousands of reports, some of which were previously hard to access, with priceless information from groundwater exploration, research and development projects carried out by a wide range of organisations over many decades. There are also thousands of published journal articles and hundreds of books or book sections, conference papers, maps and university research theses.

As many as possible are freely available to download, if a digital copy exists and copyright restrictions allow. Where restrictions don't allow full text downloads – such as for non-open access journals – the Archive tries to provide URLs for the abstracts. Every reference is attributed with supporting information. At a minimum this includes the country, or countries, to which it relates, and thematic keywords describing the document content. Additionally, more than 1500 of the references are georeferenced, and can be searched on a map.

This is only the beginning. There are thousands more documents about groundwater in Africa, including valuable reports and articles that only exist in paper form. We would like to see even more essential information on African groundwater made accessible and available. If you know of relevant documents, especially if they are, or can be made, available digitally, please get in touch, and help improve access to the kind of information that can make lives better.



Find out more

<http://www.bgs.ac.uk/africagroundwateratlas/index.cfm>

Adapting to change

Facilitating and encouraging publication of the scientific research of its members in books and journals has always been a prime objective of associations such as IAH. Publishing is also an integral part of IAH as a business, contributing incomes and requiring expenditures. Right from the beginning of IAH, it has also been viewed as an important member benefit, encouraging hydrogeologists to join and to participate in the association's activities. The world of technical publishing is, however, rapidly evolving and IAH is by no means alone amongst scientific societies in needing to find ways of adapting to these changes.

The global trend towards digital publishing is reflected in a continuing rise in the proportion of IAH members who prefer to access Hydrogeology Journal online rather than in print. Secondly, the desire of both researchers and research funders to see the results of their work freely available to all is producing rapid growth in the number of open access journals. Adapting to this change, from September 2014 IAH has offered an 'open choice' option to allow authors open access arrangements in our journal. Open access requires a submission fee payable by the author, his institution or the funder of the research and, in consultation with the journal publisher, we are able to offer a substantial discount for IAH members. In 2015, the first full year of the arrangement, 18 out of the 130 articles accepted for publication were open choice.

For book publication, there are two main challenges which are again not confined to IAH. Firstly, under increasing time constraints and under academic pressure to publish in high impact journals rather than books, it is becoming ever harder for our books editor to persuade authors or editors to commit the time needed to produce high quality books. Secondly, with the trend towards digital access, it is becoming more difficult to sell books, even with the substantial discount available to IAH members. If we cannot induce authors to produce nor members to buy then, as many societies are finding, maintaining regular book publication is indeed a challenge.

Discussions between our editorial teams and publishing partners Springer for the Hydrogeology Journal, and Taylor and Francis for the IAH book series, help keep the association through its Council abreast of the nature and pace of these changes. Thus, at its meetings in 2015 with Springer in Heidelberg and at the Rome Congress, IAH was reassured that there is no current pressure to move the Hydrogeology Journal either to fully online nor fully open access publication. Moreover, there is still considerable desire within the IAH membership for the option to receive a printed journal.

These changes could have implications for our publishing strategy and potential impacts on our business model. A fully open access journal is, in effect, largely paid for by the authors rather than the readers; which would clearly change the financial arrangements for publishing and the nature of our member benefits. At the same time, it would still require the substantial resources of the editorial team. As envisaged by IAH's Forward Look, a review of our publication strategy, established and overseen by Council as the association's trustees, could be needed so that IAH is well prepared to respond to such major changes and challenges.

Find out more

<https://iah.org/publications>

FINANCE FACT

Publishing royalties from books and journals have been stable in recent years at around £16,000, representing 7–8% of our income.



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

Council and Executive meet

The Council of IAH met at the Rome Congress and the Executive Committee met twice during the year, in Paris in February and Dublin in early July. 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 accordingly.

Commissions and Networks reviewed

An important feature of the overhaul of IAH's Commissions and Networks in 2010–2011 was the establishment of a formal review and renewal process to help ensure that obligations were being met and that promised activities were being carried out and reported. At the Rome Council meeting, Vice President for Science and Programme Coordination António Chambel reported on the first period of operation of those of the new Commissions and Networks due for renewal. Following extensive and detailed discussion, all of the requests for renewal were approved by Council, but with shortening of licence periods and closer monitoring of outputs requested for some.

New Commission approved

António also tabled a proposal for a new commission on groundwater and energy, an area of work in which IAH has been keen to establish a group for some time. The new commission intends to work with international energy agencies and other important stakeholders. Council readily approved the establishment of this new commission, which will be co-chaired by Grant Ferguson, Bridget Scanlon and Rob Ward, and participation in the work of this new commission is welcomed.

Approval given to new IAH Rules

After a lengthy process led by Vice President for Finance and Membership Bruce Misstear and already reported previously, a revised set of IAH Rules has been approved by Council and the Annual General Meeting, following extensive review and discussion at Executive meetings in 2014 and 2015. The Rules support IAH's governing Articles, providing more detailed guidance for the management of the association. The Rules were last reviewed in 2007 and it had become apparent that they needed updating to take account of the way in which the membership, national chapters and commissions and networks are now operated, and with the ways in which communication has evolved in the digital age. It is hoped this careful work by Council, Executive and Secretariat will stand the test of time and enable the Association to adapt its operations in a rapidly changing world.

See the rules:
<https://iah.org/knowledge/learning-resources>



Overall financial performance

The overall operating deficit of £39,000 for 2015, compared to one of £8250 for the previous year, left the association with funds of £98,000 in our bank and building society accounts. A gradual decline in our reserves over recent years reflects the increased use of resources on charitable and educational activities and member services. This obviously cannot be sustained continuously, and efforts are underway in 2016 and planned for 2017 to increase the association's income to maintain and expand our activities.

Currency fluctuations complicate comparisons

Comparison of financial performance from year to year and with the yearly budgets remains complicated by currency fluctuations within and between years, depending on the strengths of the three currencies in which IAH operates. The formal accounts prepared to meet our company and charity obligations, and presented in summary here are obliged to use a single rate for the year which is shown in the notes beneath the table. Looking at the statement of financial activities for 2015, overall income of £255,600 for the year was £7500 lower than 2014 in sterling but €8700 up in euro terms. Total resources expended at £284,300 were £13,000 higher than in 2014 but at €386,000 were €37,000 higher than the previous year.

This substantial difference in impact of currency fluctuations on income and expenditure reflects the fact that much of the association's income in membership fees comes near the beginning of the year in euros (and to a lesser extent in US dollars), and a large part of the expenditure in operating and managing IAH is undertaken in sterling and spread more evenly throughout the year. Financial transactions throughout the year which involve currency exchange rates obviously use the rate at the time of the transaction. Comparison with the 2014 figures is also affected by the impact of exchange rates in that year on income and expenditure. As shown in the accompanying figure, during 2014 the euro steadily weakened in value from 1.20 to 1.32 to the pound and in 2015 there were significant fluctuations in strength of the pound, euro and dollar.

As in 2014, the influence of currency is seen in comparison of our membership fee income, which in 2015 was down by £7000, but up by €4300 from the previous year. Total membership fee income is also influenced by the distribution of membership categories. Overall membership for the year was up to 4103, our highest ever total, contributing to an increase in income. The approval by Council in Marrakech for the introduction for 2015 of greatly reduced student fee rates produced a very welcome 30% increase in the number of student members; the future of our association, but

contributes towards a small decrease in overall income. The gradual increase in online memberships illustrated in last year's report also works towards a decline in fee income, but also reduces printing costs as shown on page 17.

Currency gains and losses are normally a very small proportion of turnover, and often in the same range as the annual surplus/deficit. Taking away the effect of currency gains/losses, we have been close to breaking even in a number of years.

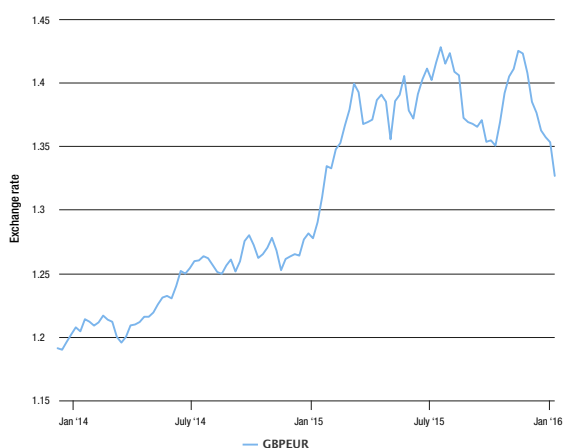
Year	£1=		Currency gains/(losses)	Net incoming resources
	Euro	Dollar		
2007	1.36	1.99	£6950	£8100
2008	1.03	1.45	£47,950	£63,650
2009	1.13	1.62	(£6545)	£27,400
2010	1.16	1.55	(£11,450)	(£23,100)
2011	1.20	1.55	(£4800)	(£4100)
2012	1.23	1.63	(£4950)	(£11,400)
2013	1.20	1.63	£2100	(£68,500)
2014	1.29	1.56	(£8250)	(£14,250)
2015	1.36	1.48	(£10,500)	(£39,100)

These impacts will always be with us, and the association's Secretariat works to moderate them by operating bank accounts in three currencies and by endeavouring to disburse and receive funds in the respective currencies to minimise losses at the time of transaction. Membership of the UK's Charity Finance Group (CFG) also provides IAH with access to comprehensive and timely advice on managing currency issues and other financial matters.

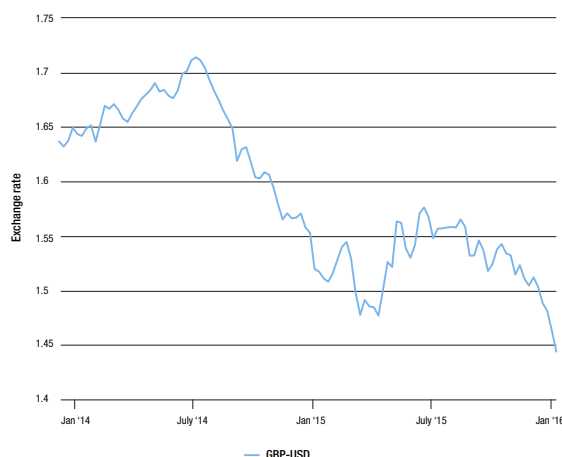
Read IAH's full accounts

<http://iah.org/about/reports/management>

**GBP to euro exchange rate
Jan 2014 to Jan 2016**



**GBP to US dollar exchange rate
Jan 2014 to Jan 2016**



Our largest items of expenditure for the last seven years are shown in pounds sterling in the table below, indicating declining print costs with rise in online members, which is matched by decline in income, salaries rising gradually with inflation and high travel costs associated with meetings for the Forward Look in 2010 and council in 2013.

	2009	2010	2011	2012	2013	2014	2015
Printing publications	86,900	100,400	97,200	93,700	88,200	77,900	70,300
Editorial stipends	19,700	20,800	19,900	21,000	22,100	19,100	23,500
Salaries	53,700	59,800	59,700	58,700	70,800	60,400	67,400
Actual travel costs	17,100	43,000	34,700	32,200	46,000	33,900	35,000

Much of the expenditure is straightforward and items related to specific activities are highlighted where relevant throughout the report. A couple of additional items are worthy of further explanation...

Contribution in kind for travel costs

Of the £30,832 in donations, £29,700 represents funding provided from other sources such as conference and meeting hosts, international agencies or employers towards the travel of members of the IAH Executive and Council. Including this as income complies with good accounting practice, and it is also added to the travel expenditure, meaning that the much lower amount of £35,000 was the actual expenditure by IAH on travel by Council, Executive, Secretariat and journal team.

Marrakech loan repaid in full

During 2015, the loan of €15,000 to the Moroccan National Committee of IAH for preparation of the Marrakech Congress was repaid in full. This does not appear as income in the summary accounts but in the full accounts is recorded as a debt repaid.

Statement of financial activities for the year ending 31 December 2015

Incoming resources		£	£	EUR(€)	USD(\$)
Membership fees			185,471	251,981	273,811
Contract and subvention income			21,585	29,325	31,866
Investment income			659	895	973
Donations			30,832	41,888	45,517
Royalties			17,067	23,187	25,196
Other income			0	0	0
Total resources received			255,614	347,277	377,363
Resources expended					
Member services	Salaries	22,944			
	Printing and publications	93,854			
	Other	15,765	132,563	180,100	195,703
Donations and grants payable			11,288	15,336	16,664
Support costs	Salaries	27,255			
	Travel and subsistence	64,732			
	Printing, stationery and database administration	11,393			
	Website development	3317			
	Other	4982	111,679	151,727	164,872
Management and administration of the charity	Salaries	17,207			
	Strategic review and training	4669			
	Accountancy fee	2238			
	Other	0	24,114	32,761	35,599
Finance costs (bank charges) and depreciation			4647	6313	6860
Total resources expended			284,291	386,238	419,699
Net income / expenditure			(28,677)	(38,961)	(42,336)
Net foreign exchange gains / (losses)			(10,387)	(14,112)	(15,334)
Net incoming resources			(39,064)	(53,072)	(57,670)
Balance brought forward at 1 January 2014			137,020	186,155	202,283
Balance carried forward at 31 December 2014			97,956	133,083	144,612

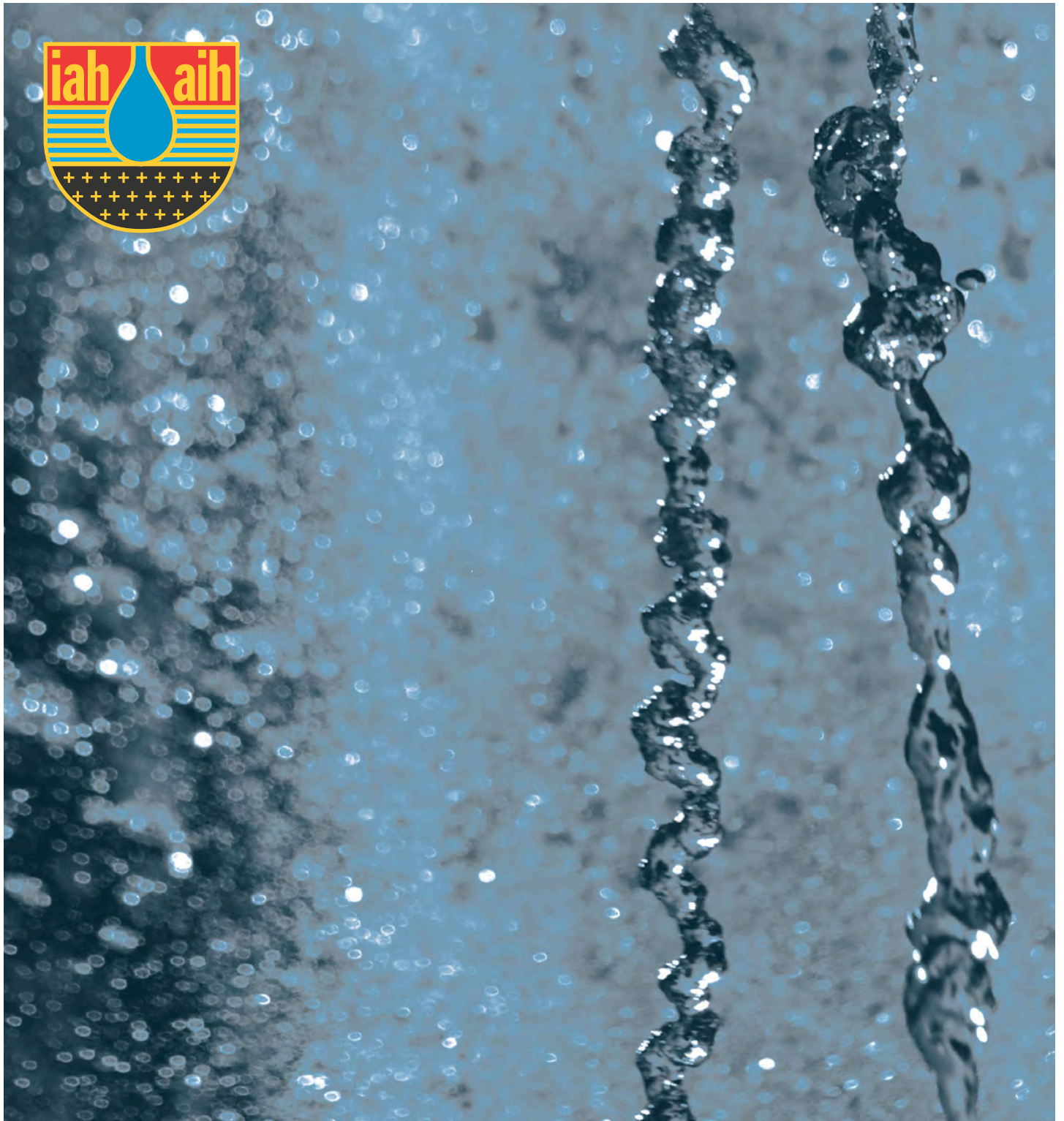
Balance sheet as at 31 December 2015

	2015	2014	2015	2014	2015	2014
	£	£	EUR(€)	EUR(€)	USD(\$)	USD(\$)
Fixed assets	2514	3433	3416	4664	3711	5068
Current assets						
Cash and debtors due	100,183	136,360	136,109	185,259	147,900	201,308
Creditors						
Amounts due within one year	(4741)	(2773)	(6441)	(3767)	(6999)	(4094)
Net assets	97,956	137,020	133,083	186,155	144,612	202,283
Represented by:						
Unrestricted Funds	60,916	96,776	82,760	131,480	89,930	142,870
Burdon Fund	37,040	40,244	50,323	54,675	54,682	59,412
Funds	97,956	137,020	133,083	186,155	144,612	202,283

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 2015. The annual report and accounts were adopted by the IAH Council on 4 August 2016 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.

Throughout this report the conversion from sterling (£) to euro (€) is at the rate of €1.3586 = £1 and to US dollar (\$) is at the rate of \$1.4763 = £1.



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