WOMEN IN THE IAHR LEADERSHIP SHARE THEIR THOUGHTS

INTELLIGENCE THROUGH DIVERSITY – TOGETHER WE BUILD SCIENCE, TOGETHER WE ARE IAHR

BY SILKE WIEPRECHT

How would our life be in a society without men? How would our life be in a society without women? Boring, uninteresting, unbalanced, imperfect, not complete - simply, we would miss something. We are glad that we can live in a diverse community and can bring together and benefit from the skills, knowledge and strengths of all. Diversity is what makes us strong.

And it is precisely this approach that forms the basis of a fundamental principle within IAHR. The network of all members, whether greenhorn or old hand, whether from the northern or southern hemisphere, whether man or woman, is only as powerful through the existing diversity. However, there is certainly still room for improvement. Within IAHR we have a total of about 25% women members. However, this is distributed spatially quite unevenly: Latin America is the region with the highest proportion of women (27%), whereas in the Middle East and Africa women are the least well represented (15% and 11% respectively). It is also noticeable, nonetheless, that in the younger generation the distribution between men and women is already rather more balanced, at around 67% to 33%. More sobering, however, is the fact that very little has changed in recent years in terms of the increase in women members. We want to and must change this in order to further strengthen the potential of IAHR and its position.

That is why the Task Force on Gender Equity is working to further improve the balance between the different groups. Though, also within the Task Force we would like to see even more gender balance among the members. At the time being, we have a clear predominance of women in the Task Force. Men often do not think that gender equality is about them, and it is crucial that this changes. Often, gender equity discussions are dominated by women, while men make progress in research and other activities. Thus, it is important to encourage men to get involved and take responsibility. We explicitly invite the men of IAHR to participate and contribute to the Gender Equity Task Force.

Within IAHR we try to identify and raise the visibility of women who are active within the organisation. A balanced membership is one of our strategic priorities and it should be reflected accordingly at the leadership level, but also in our committees, divisions and boards. That this is not simply lip service, but that it is also being implemented, is demonstrated by the milestone modification of the new Constitution approved in Panama in 2019. It manifests itself in Article 17 which states that "*Members of Council (EC, TC, RD) ….. should represent the gender and geographic distribution of the membership.*" Also, in Articles 7 and 8 of the By-laws can be found similar wording, which regulates the composition of the Technical Committees and the Regional Divisions accordingly.

Targets must be achievable and realistic. We are aware that the share of women in the engineering disciplines is approximately 35 to 40%, depending on the region. An equal split between the genders within IAHR would therefore not only be unrealistic but would also not reflect our community. Therefore, our goal is to grow from 25 % to about 1/3 female members in IAHR within the next five years, and the divisions and committees should be appointed in the same ratio.

Nevertheless, we also know that it is not always easy to find enough women for all positions. In reality, the achievement of gender diversity often remains a struggle. If we want to create a gender-balanced board, workshop or committee, we can often only refer to a relatively small pool of women. This is why we endeavour to identify women leaders, develop the skills of our young women members, recognise their contributions and increase their visibility. To achieve this, role models are certainly an important element.

We are very excited to introduce four women from the new Council serving as role models. For the first time in the history of IAHR, the positions of the elected members of the Council are shared equally between men and women. The composition of the entire Council, including the President and Vice Presidents, the Secretaries General, the Division Chairs, the elected members and the co-opted members, is 30%. I think this is a remarkable success on which our further work can build.

Although there are so many amazing women in the water and environment sector, it is always interesting to note that it is still unusual to find women in leadership positions in the water sector. It is almost as if, as we become more technically and scientifically competent, we feel that it is unusual to find women among us. That needs to change. In the long term, we cannot and will not afford to waste and fallow potential of intelligent, motivated and creative women. We are looking forward to finding these great women together with you, to encouraging them to engage themselves and thus, together with our already committed male colleagues, to further advance the fate of IAHR. ■

Professor Dr. **Silke Wieprecht** is full professor at the Institute for Modeling Hydraulic and Environmental Systems of University of Stuttgart in Germany. Her emphasis in research is sediment transport. She is specialized in hydrologic and hydraulic analysis, flood protection with focus on risk analysis, aquatic ecology and especially in hydro- and morphodynamic processes in rivers (transport processes of particles and sediments) as well as research on biostabilisation of fine sediments. Her work includes field surveys, laboratory studies, analytical approaches for sediments, numerical modelling (in 1D, 2D and 3D) and hydraulic laboratory experiments. Professor Dr. Wieprecht is part of a well-established international network of notable researchers focused on sediment transport. She spent research periods as visiting scientist at several universities, i.a. UiTM, Kuala Lumpur, Norwegian University of Science and Technology, NTNU Trondheim and Peking University PKU. She is head of several national and international expert committees. She has been member of IAHR since 2005 and serves as Vice-president since 2017.

LINKED IN DIVERSITY FOR WATER SECURITY

BY JING PENG

Water is an indispensable part of my life. As a woman researcher from the China Institute of Water Resources and Hydropower Research (IWHR), I am very honored and pleased to serve as one of the two Secretary Generals of IAHR as well as a Council Member of the organization. With 38 years of study and work in the field of hydraulics and water environment since my college days, I have been applying what I have learned about water to my work, while in turn learning more about water as I work with it. The more I work with water, the deeper I feel the great complexity and vital importance of water. It is such a unique resource that is not only complicated in its own natural sense, but it is also highly connected to many other natural resources and coupled with socio-economic development having an impact on many human activities. Integrating water into the UN SDGs reflects people's unanimous recognition of such complexity and the significance of water. It is because of this uniqueness, there is no universal solution to the water related problems or challenges of different countries or regions at different levels. Communication and cooperation are therefore necessary for us to share interdisciplinary knowledge and diversified experience of people all over the world.

IAHR, being a world-renowned professional community in the field of hydro-environmental research and engineering, has made tremendous contributions during its 85 years of history to inspiring, disseminating and catalyzing the state of the art knowledge and thinking on the most important water engineering and related environmental issues. However, the water challenges that we are faced with have never stopped changing as socio-economic conditions keep evolving and human activities and ecosystems are getting more deeply interwoven. Emerging challenges such as climate change, extreme water events from floods to droughts, water scarcity, water environment and ecological degradation, etc. are all threatening the global water security, which makes innovative solutions of water science and engineering more urgently needed and worldwide cooperation and exchanges more keenly desired. As a member of the IAHR Council, I would like to share the research and practices of my team while learning from others through communication and exchanges on the platform of IAHR.

Dr. **Jing PENG** is Vice President of the China Institute of Water Resources and Hydropower Research (IWHR) and Secretary General, International Association for Hydro-Environment Engineering and Research (IAHR).

She received her bachelor's degree of hydraulic machinery and master's degree of hydraulics and river dynamics both in Tsinghua University, China, and doctoral degree of river and basin environmentology in Tokyo University, Japan.
Her major research fields include hydraulics, water environment and river ecosystem management. As project manager or term leader, Dr. Peng has been responsible for more than 40 research projects. She has also published more than 90 papers on journals.

Water is the source of life. The good governance of water is the ultimate premise of a quality life for everybody on earth. To protect and use this valuable resource in a sustainable manner, we need to consider the interest of both current and future generations, and we need to look at this issue through different eyes, including those of women who might provide us with more diversified perspectives and inputs, and our children and grandchildren who will be living in the world that we leave them.

I hope that IAHR, as a world class professional networking platform, could make full use of its unique advantage of connections to researchers and engineers and even students all over the world, to bring together the immense power of human beings to jointly create a better water future for all. ■

AN OVERVIEW OF WATER AND GENDER ISSUES IN MOROCCO

BY DALILA LOUDYI

Morocco is a north African country with a long historical tradition of water management. Due to its landscape variety, ranging from coastal plains to Rif and Atlas mountain chains to desert dunes, disparities in water resources availability have always been a reality the country had to cope with. Systems of water sharing have been used as an expression of solidarity between small farmers; in addition, other traditional techniques have been developed in dry areas for water supply and conservation such as Noria, Khettara, Mettfia, etc. In the early years following its independence, the country implemented a dam policy aimed at providing more equity in access to drinking water and agriculture development as the main economic activity of most Moroccans. The policy aimed at constructing 2 to 3 dams each year in order to irrigate one million hectares by the year 2000, to protect lands from floods and produce energy. Hence, hydraulic engineering had soon become one of the most developed disciplines within national academic institutions working to respond to the policy needs for engineering technical and managerial resources. Subsequently, other related skills were also needed to adapt water resources management to demographic, socio-economic and, lately to climate change constraints. Therefore, many engineers and researchers were trained in the fields of groundwater, meteorology, coastal engineering, environment, water quality and other related disciplines, the main issue being water scarcity alleviation for food security, and social and economic adaptation.

However, in practice, these disciplines had always been male dominated. Adversely, in rural Moroccan practices, women and girls are the most involved in water management at domestic and farming

levels, particularly in water supply as they spend about four hours per day retrieving water in poor infrastructure areas. In this context, as a woman, water engineer and researcher, I am very much involved in the issues of water management in Morocco and in gender issues. I took part in many projects at national and international level in order to help the country facing the water crisis that hit the most vulnerable who are generally women, given the socio-cultural structure of domestic labor distribution and the weak empowerment of women in rural areas. I mainly work on climate change impact on water resources, flood and drought mitigation and adaptation, and urban water management.

Being conscious of the importance of networking as a researcher and professor of environmental water management for more than twenty years, I was interested in IAHR activities since the early stages of my career. I have published few articles in IAHR journals and magazine and took part to its conferences. Now, as a council member at the IAHR for MENA/ Indian subcontinent region, I am interested in promoting women access to decision making in the water sector in order to improve water access conditions, equity in water sharing and flood and drought resilience in one of the most water stressed areas of the world that is the Middle East and North Africa (MENA) region. IAHR is a good vector for water best practices exchange and networking between women in water engineering within IAHR and with the community of researchers and professionals for water innovative solutions. ■

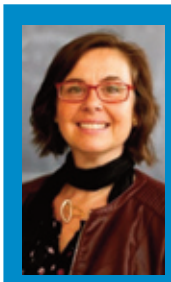
Dalila Loudyi is a Professor at the department of Water and Environmental Engineering at the Faculty of Sciences and Techniques of Mohammedia, at Hassan II University of Casablanca. In 2005, she got her PhD in Hydroinformatics at Cardiff school of engineering. Professor Loudyi was selected by the Moroccan ministry of higher education as a National Contact Point in environment, since 2010, to promote the use of the Seventh European Framework Program (FP7) for research and development at a national level. She is also a member of the Climate change experts committee of LYDEC, a branch of SUEZ Environment in Morocco. In 2019, she was elected as IAHR council member for MENA/ Indian subcontinent region.

WE ARE IAHR

BY AMPARO LÓPEZ JIMÉNEZ

I have been involved in IAHR since 1996, when I participated in my first Symposium on Hydraulic Machinery and Cavitation. Since then, I have been participating in IAHR meetings and organizing workshops and seminars. I am also part of the Spanish Chapter of IAHR and I participate in the IAHR Europe Regional Division Leadership Team. In addition, I am Associated Editor of Ribagua, our IAHR Journal in Spanish and Portuguese. Nowadays, I am also a member of the Europe Division of IAHR and member of the IAHR Council.

In my opinion, the future of hydraulic and environmental engineering involves the integrated management of water at any scale, as this provides not only economic long-term benefits, but also environmental and social benefits, as indicated by the Sustainable Development Goals of the UN. Hydraulic and environmental engineers must be fully committed to achieving these goals. IAHR must strongly lead this involvement with actions focused on information dissemination, networking and research in our field. My motivation is to promote these activities and to participate in them at any scale.



Professor **Amparo Lopez-Jimenez** gained the qualification of Industrial Engineer at the Universitat Politècnica de València and her PhD in the Department of Hydraulic and Environment Engineering (UPV, Spain). She is Full Professor of Hydraulic Engineering at the higher Technical School of Industrial Engineering, and Director of this Hydraulic and Environment Engineering Department.

She has been working on issues of Hydraulic and Environmental Engineering since 1994, preparing research and teaching ever since, in any aspect related to numerical modelling and sustainability issues, particularly related to hydraulic machinery.

Spain is a country where water management and all that it entails has great importance and tradition. Water is an increasingly valued and scarce resource. Universities and companies are working hard to find brilliant and innovative solutions that meet the needs of society in a sustainable and efficient way. The goal for all of us is to improve resilience to extreme and changing future scenarios, promoting the circular economy within the framework of an increasingly globalized world. In this context, the presence of women in the framework of hydraulic engineering has a lot to advance. In my country, approximately 25% of women students are getting an Engineer degree or Master, that is the proportion of students who finish their degree. But if we take a look at intermediate or senior management positions, that percentage drops to 12% or less. This means an egregious loss of women's talent for a number of reasons: women do not have references, they do not choose engineering studies, they do not enter in our Engineering Schools and in the end, society loses the possibility of benefiting from the many capacities of all those women who did not choose the world of engineering, and who could have contributed much to society.

It is time to bring women closer to the world of Hydraulic and Environmental problems, and to bring the full potential of Hydraulic and Environmental Engineering as a solution to young students who have to decide what vocation to develop. The world of Hydro-Environmental Engineering has a lot to offer to young men and women who discover their job interests for the future.
IAHR, as an ambitious and committed association with sustainability, can be a mirror of these interests. Our Association must decisively have people involved in the proposal of innovation and technological solutions that allow solving the complex and varied problems that water and environmental management faces. Both men and women must be main actors in this future, which is common to all of us. ■

WATER FOR ALL

BY IOANA POPESCU

I have been an active member of the International Association for Hydro-Environmental Engineering and Research (IAHR) since 2001, and currently I am a member of the IAHR Council. I do know the association for a long time, and I have always appreciated its interdisciplinarity in water and environment, as well as the broad international composition of its members. This creates the opportunity to link to other experts and see different perspectives. I like in particular the fact that industry and academia come together to analyse problems of the aquatic environment.

Being a member of IAHR brings me closer to the worldwide experiences in water and creates opportunities for collaboration in research and educational activities with experts. In my daily work I have been involved in several large European collaborative research projects related to the field of information and communication technologies and water management (such as IceWater, Ienvis, EnviroGRIDS, Floodsite, SCENT). These projects involve various partners both from academia and industry, some of whom I met for the first time in IAHR.

Due to the nature of my work I am equally involved in educational and capacity development activities in Asia, Africa and Latin America, for modelling systems for water related domains. These activities support professionals in different countries. Through IAHR I hope we could develop an international recognition of these professionals, like an international licencing of professionals in water. In order to do that it is very important to maintain a strong link with young professionals.

Ioana Popescu holds a PhD in Computational Hydraulics and have worked in the field of hydroinformatics for the past 31 years. I am currently Associate Professor of Hydroinformatics at IHE Delft - Institute for Water Education in Delft, The Netherlands. My research focuses on computational methods, flood modelling and flood related vulnerability, lakes and reservoir modelling, river systems modelling and optimisation.

Lately, my research is also focused on incorporating data generated by citizen observatories in flood models. I am also part of World Data Systems, and I believe in promoting the “open data sharing” concept. As part of IAHR, with new generations of professionals, formed in an era of big data availability, I hope to make a small contribution in moving towards data sharing, which will facilitate finding quicker solutions to water-related problems. ■

IAHR COMMUNITY – AN OPPORTUNITY TO BUILD LONG-LASTING PARTNERSHIPS

BY VERONICA MINAYA

I always had a strong connection with nature, and especially with water, which is what led me to follow my professional career in Ecohydrology. Nowadays, we face huge challenges in this field since we need to meet the current water demands but also to guarantee the sustainability of aquatic biodiversity. There are complex environmental and water management issues that need to be addressed using a sustainable and resilient approach.

I have been part of the IAHR community since 2015, when together with a group of colleagues we founded the IAHR-YPN Delft under the supervision of Prof Arthur Mynett. We organized technical sessions and social activities for the young professionals that attended the 36th IAHR World Congress in The Hague. Since then I have been really interested in research development, and women and youth empowerment. At the moment, I am an IAHR Council Member representing the Latin America Region, supporting the activities related to the Young Professional Network Development and the Gender Equity Task Force.

In Ecuador, water resources are threatened by the increase of demand for more food and energy, as well as by poor policies for water management. The government having recognized that the water resources are essential for the economic productivity of the country and the welfare of its people, has started an effort to create new policies that aim at the sustainable management of these resources. Part of these policies include social equality and also the role of women in the integrated and sustainable use of the water resources. I see IAHR as a great platform to share information, exchange ideas and to build partnerships and initiatives. Senior researchers and water leaders inspire young professionals to have an active collaborative role within the IAHR community. As a Council Member I would like to support the interaction not only within the different YPNs, but also among them, and to support initiatives that promote and include the participation of women. ■

Veronica Minaya’s background is in Civil Engineering, with degrees of Masters in Water Science and Environmental Engineering and PhD in Eco-hydrology obtained at UNESCO-IHE and TUDelft. Veronica was a post-doc researcher at the Vrije University in Brussels working at capacity development initiatives in the South, mainly Africa and South America. Currently, she is working as full-time lecturer in the Escuela Politecnica Nacional in Ecuador.