



International  
Water Association

## **60 second interview | *Ralf Otterpohl***

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**Prof. Dr.-Ing. Ralf Otterpohl** has been the Director of the Institute of Wastewater Management and Water Protection at Hamburg University of Technology since 1998. The majority of Professor Otterpohl's time is dedicated to research programmes; working with 25 researchers, he leads activities focused on source control systems, black water, yellow water, and specific technologies for water treatment. Prior to his position at Hamburg University of Technology, he founded and developed a consultancy group that specialised in computer simulation of large wastewater treatment plants and innovative sanitation concepts. The consultancy still exists (*Ottowasser*, situated in Lübeck, Germany), but Professor Otterpohl is currently only lightly involved in its development.

His chosen field of interest and specialism is wastewater management, with a particular interest in new and innovative concepts. He has a long career in mathematical modelling and computer simulation of wastewater treatment plants and it was this interest that motivated his joining IWA – the Association was advocating strongly for mathematical modelling at the time, which was a new and pioneering subject. He is currently Chair of IWA's specialist group on Ecological Sanitation.

- *What do you consider to be the most significant recent change in your field of expertise to have occurred in the last 10 years?*

In my opinion, the most significant change was the heightened consideration of innovation in concepts and approaches rather than the slavish adherence to existing technologies where the margin for improvement is small. This discussion has flourished over the last 10 years; previously it was difficult to discuss innovation of concepts (in wastewater or sanitation), nobody was interested and there was little substantial work on this topic, except from people outside of the water profession. Now, inside the profession, there has been quite a leap forwards and several larger research groups are managing major projects in this area.

One practical example is sanitation. In the past, alternatives to sanitation were almost exclusively viewed as selected types of composting toilets or dry toilets; the issue was raised by those outside of the water profession and as a result was not seen as very 'sexy', or credible. But with the work and effort of a small number of professionals from around the world, the subject has been slowly integrated into the mainstream. I think that internationally about 10 people were active in promoting these ideas - making a fool of themselves at the time - and even talking about subjects and issues in the absence of any recognition.

This was at a tremendous cost in those early years; particularly in terms of enthusiasm and motivation, but also the credibility and profile of those doing the advocating. Today, there are very many joining in and saying the subject is of interest; projects are funded by the EU and other major donors; even the biggest water company in the world, Veolia, is undertaking research at its Berlin branch on this subject.

- *What do you consider to be the most significant future challenge that professionals must deal with in the next 10 years?*

I think we really have to deliver more to those areas of the world where sanitation and water supply provision remain a challenge. We do have a handful of exciting, innovative solutions, but most of them have only been applied on a small scale. So a key activity in the next 10 years will be getting these technologies to scale, improving them, and bringing them into the water profession.

There are many regions of the world where conventional ways are failing. Few are willing to put excessive amounts of money into the rehabilitation of conventional systems, so we need new approaches in these fields. But currently we have a tool box with only one tool in it - we need more!

We also need utilities to move into this area because there are major tasks and actions which cannot be achieved through small scale operations. There remains a need for considerable investment in these fields, even though the systems can be very cost efficient. If you seek to provide services for 2 million people in one location there has to be a suitable organisation that has professional knowledge and skills to manage the process and from my personal observation there are several utilities pursuing this closely. They are still hesitating to go to scale, but that may change soon.

- *Whom do you consider to be the leading expert in your field, outside of your own organization, and why?*

One person that stands out, in my opinion, is Prof. Peter Wilderer. He had adopted the idea of new concepts very early on, was supportive of others, and has raised the subject's profile to a higher level of recognition - he is really an outstanding person in this respect. People who are also looking further ahead and developing new systems include Prof. Petter Jensen in Norway, from the agricultural university near Oslo; and from Sweden, Prof. Håkan Jönsson, who is the Co-Chair of IWAs Ecological Sanitation specialist group - both have put considerable time and effort into this subject. Others, such as Prof. Saburo Matsui in Japan, and Prof. Goen Ho in Australia have been active in this field.

- *Which report, product or service from your organization deserves more attention and why?*

Of course, I have published quite a bit about the possibilities of new concepts. However, what I consider really crucial is to demonstrate these things in real life. So I think my largest practical contribution is the Lübeck Flintenbreite project, the real life implementation of an ecological sanitation system that has been visited by 2,500 people from 60 different countries from around the world. That has had quite an impact.

My experience with people seeing this project is that they come to perceive that such approaches are possible, that it is economically feasible, that it looks very neat - and the process of understanding opens up their imagination. Generally, however, we are stuck in what we know; we have all grown up with conventional sanitation systems and to see that something else is possible and just as comfortable has large potential impact.

- *In what ways would you like to see IWA change in the next 5 years?*

One positive point is that the Association has so many like minded people working in the same field - this feature of membership should be protected. There should be enough new initiatives to attract young researchers and younger members, to attract people who want the feeling of belonging, as this is the strength of the organisation.

In IWA there is a strong spirit of innovation, of creative thinking, of being more relaxed and less formal than in national organisations - this too needs to be fostered and developed. On occasion, a close relationship to a national Association may be prohibitive for those of us trying to reach further or develop new thinking. One practical suggestion for IWAs future development would be to provide additional possibilities to link up with people on a national level and/or a regional level. Connections to IWA specialist groups would be one example.

- *Special interests...*

I have spoken about research and practical applications before, but at the same time I see a need to include innovative concepts and thinking in teaching at universities and colleges, because this is something that it is clearly lacking. There is a need to make the teaching perspective and curricula wider on this subject - this does not have to be

a full class, it can be maybe just two or three hours on such issues - but this would give students the idea that there is something beyond the conventional....

Many of our young people work abroad and they should have some knowledge about the needs and the possibilities for other parts of the world, other geographical and social economical conditions. Ideally, this would be something the IWA could offer; having prepared presentations where people could pick out things they could include in their teaching from an IWA-presentation-exchange pool.

- *What are the key fracture points – issues of conflict or debate in your specialist area?*  
That they exist is definitely true for my field of work. When working with concepts that are quite a bit different from the usual there is potential to provoke anger and fear from within the profession. People will believe in what they have always believed in and are sometimes not willing to accept there are other ways that may have some advantage. Conflict of this type is being reduced as more and more people hear about new concepts and alternative sanitation options and get to know that there are several people working on these topics. Still, it has to be addressed and these fears have to be taken seriously, so open debate helps. It is critical to make a clear distinction between emotional criticism that tends to hurt the individual and professional criticism that helps further conceptual and practical development.
- *Forthcoming news of interest...*  
We [the specialist group] are interested in preparing for IWA a handbook on resource management sanitation, to bring together the array of new concepts, experience and case studies. Although there is much information which is currently available, much of it is not commonly known. To this end, we have developed the website of our specialist group (<http://www.ecosan.org>) where we have compiled resources and aim to bring more cases studies and research to the knowledge of professionals working in this field.

At my own institute we have 15 researchers working full time on these subjects so we are probably the largest organization working in this field at the moment, with an extensive portfolio of publications.

- *Career defining moments...*  
I would definitely encourage everybody, especially those who are finalising their university studies, to focus on those subjects that really interest them as opposed to going purely for what appears to be a better opportunity. If a person is really enthusiastic about something with some potential, really loves to do it, then this person will be successful in that field. This happened for me with computer simulation and mathematical modelling - I was really enthused by the subject. This motivation came after hearing a presentation by Prof. Willy Gujer some 18 years ago. I thought this was really something. This was so enlightening at the time that I started my Masters in this field and then followed it with research work for my Doctoral dissertation. This work inspired my activities on innovative concepts as a counterbalance to the disappointment of mass flows of conventional systems.
- *Contact points*  
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