

Dear colleagues,

Welcome to the Umweltbundesamt (or in short UBA) – to the German Environment Agency!

Last year, the Water Science Alliance decided to “go on tour – that is: to “go Germany” with the annual Water Research Horizon Conference. And, the Water Science Alliance asked us at UBA to host the first meeting outside of Berlin.

For us, this is a great honour! UBA has been a member of the Water Science Alliance since 2014. We were both pleased and a bit proud to meet the kind request to host this meeting:

- Proud, because this request acknowledges our role in the water research community, as well as the work of our scientists and their standing as researchers.
- Pleased, because this request reflects the breadth of our own approach to water research. In fact, the integrative approach of the Water Science Alliance is quite similar to that of UBA: to look beyond the “silos” such as hydrology, plankton ecology or drinking-water quality, to bring together water researchers to look at the bigger picture, to conduct a broad scientific

‘brainstorming’ debate about the most pressing water challenges. But also: to identify the knowledge gaps that we need to reduce in order to understand how we can tackle these challenges. At UBA, we need such debates: as a basis for developing policy options that we can suggest to the government as well as for identifying the uncertainties we need to reduce before it is wise to suggest policy options.

In our perspective, scientific curiosity *per se* is one approach to defining research questions, very justified and important in its own right. We experience policy development as a quite complementary driver for defining research questions. Let me give you four examples:

- One example is advising politics in the development of measures to prepare for climate change: this requires the best possible understanding of the impacts we should expect on water-bodies. For water quantity (that is, droughts and floods) this may appear obvious, but what are our best guesses about the potential impacts on water quality? How well can we predict this?

- A quite different example: Standards regulating emissions or concentrations in water-bodies have been one of our most widely used policy tools, even though we are well aware of their limitation with view to the thousands of substances that get released into the environment. The interesting question is: Can we validate how effectively standards actually improve water quality? For the small number of substances that we can control by implementing standards? But also beyond these, for overall water quality by promoting better management?
- My third example is the challenge for research posed by change: Not only does climate change, but so do our patterns of land-use or wastewater reuse. We change some patterns quite on purpose specifically for the target of mitigating climate change – such as biomass production for energy – or for recycling substances in wastewater. How well do we understand the impacts of such change processes on water quality? How well can we understand them at the point in time at which we develop such policies?

- Let me name one more aspect: Most of us appreciate biodiversity as a high value in its own right. But how much do we really know about it – about its relevance for ecosystem functioning? Are we in fact loosing our grip on understanding how aquatic ecosystem biodiversity is developing because long-term data series are increasingly being abandoned, are no longer valued by those who fund such work?

This year's Water Research Horizon Conference has picked questions for which policy development needs answers.

Where answers are not yet available, it needs well defined research questions so that we can start tackling the uncertainties. And in most cases this process requires networks and teams – often with a broad range of expertise.

This is why we feel that the annual opportunity at the Water Research Horizon Conference for us is so important: to interact (including those whom we don't regularly meet in our more specific scientific communities), to develop enthusiasm and to form and strengthen networks.

We are excited about the ideas that our discussions today and tomorrow will bring about. We are very much looking forward to the synthesis of these ideas. We are all together in this – it does not matter who does the research, it matters that it gets done – that questions are asked and answers are found.

You may be aware that Dessau is one of the sites of the trend-setting architectural movement in the 1920's and early 1930's – the Bauhaus, which created the basis of modern architecture. I hope that quite a lot of you were able to use the opportunity last night to get familiar with this approach. One part of the concept of the Bauhaus architects was indeed communication. Our UBA building here is optimized to meet modern criteria of economizing energy and using renewable, healthy materials, and it certainly is not Bauhaus.

However, creating an atmosphere conducive to communication was also high on the agenda of our architects as well. We hope this venue conveys the spirit of innovation for an inspiring atmosphere and for fruitful discussions – hopefully producing new (research) ideas!