Collaborative climate strategies

How SETAC is advancing environmental decision-making

The Society of Environmental Toxicology and Chemistry, or SETAC, is a global not-for-profit organisation which focuses on a multitude of environmental challenges. It undertakes a collaborative approach to environmental science, involving a variety of stakeholders – including academics, scientists, businesses, and governments – to ensure expertise is shared among numerous sectors. Research Features caught up with Bart Bosveld, SETAC Global Executive Director and SETAC Europe Executive Director, to discuss SETAC's history, its current collaborations, and the future of the organisation.

Through global workshops, collaborative projects, and peer-reviewed publications, SETAC works to encourage and promote science-based decision-making. It has expanded considerably since its inception and now has numerous units working on various environmental projects across the world. Though a great deal has changed rapidly in the wider field of environmental policy and research, SETAC prides itself on tirelessly centralising objective science, to ensure its work is rigorous, thorough, and globally beneficial. Bart Bosveld has been a member of the organisation since the days of his PhD and, therefore, has a wealth of experience in all aspects of SETAC. *Research Features* caught up with Bart to learn more about the organisation.

Could you tell us a little about the history of SETAC and how you came to be involved with the organisation?

The history of SETAC goes back to 1979, when it was founded in North America. The main reason for the founding of this organisation was the increasing environmental issues (for example, the Great Lakes and their contamination), the lack of a multidisciplinary approach to these environmental problems, and the absence of a platform to exchange and publish research results. There was a recognition of the need for chemists, biologists, and other scientists to collaborate but also to have the different stakeholders – academics, businesses, government – come together in these debates in order to come up with solutions. So that was the origin of SETAC, and since then, it has expanded, with members across the world. To stay closely connected with the membership, five Geographic Units were established under the umbrella of SETAC. And now we have SETAC North America, SETAC Europe, SETAC Asia-Pacific, SETAC Latin America, and SETAC Africa, and the overarching SETAC global organisation.

My involvement in fact also started a long time ago. As a PhD student, I was working on the effects of dioxins and PCBs on fish-eating birds, and I presented that research at a SETAC conference in North America. Since then, I have continued to be a member throughout my career as a researcher, then as executive director of SETAC Europe, and now as the global executive director. So, really I've been linked to SETAC from the beginning, and I grew into it.


Bart Bosveld is SETAC Global Executive Director and SETAC Europe Executive Director.

SETAC adopts a multidisciplinary approach to environmental challenges. How do your diverse strategies work in practice?

All meetings, workshops, and courses we organise incorporate a multidisciplinary approach. For example, if we organise an event, then it already starts with the organizing committee, which should include members with expertise in the relevant disciplines and represent the different sectors. The next step is to ensure that a balanced programme is offered and the various viewpoints from each discipline or sector are included in the debate. The aim with this approach, is to take all available science into consideration and draw scientifically sound conclusions.

What sort of global organisations does SETAC collaborate with?

Quite a few. A few highlights include our collaboration with the United Nations Environment Programme (UNEP) on the Life Cycle Initiative, developing the "Global Guidance for Life Cycle Impact Assessment Indicators." We also worked together with UNEP for the Stockholm Convention on the scientific basis for evaluating Persistent Organic Pollutants (POPs), for the Minamata Convention on Mercury on the development of a central Mercury Platform; and for the Strategic Approach to International Chemical Management (SAICM) on several environmental management capacity building projects.

Together with the World Health Organization (WHO) we are working on projects with the Chemical Risk Assessment Network.

Further, we are collaborating with the Organisation for Economic Co-operation and Development (OECD) on advancing the Adverse Outcome Pathways (AOP) approach to chemical assessment and management and with the International Organization on Standardization (ISO) on several standard method workgroups.

On the continental level, in Europe, we collaborate with the European Commission. One example of this collaboration is the recent appointment of SETAC as a member of the High Level Roundtable for Chemical Management and Sustainability to advise the commission on the implementation of the European Green Deal action plan.

We collaborate with the European Food Safety Authority (EFSA) and are

Working towards a sustainable environment is our number one priority, but everything for us remains fully based on science.

SETAC is undertaking numerous environmental projects around the world.

SETAC involves numerous stakeholders in environmental decision-making.

It is a huge benefit for members and researchers that they can receive feedback on what they are doing from colleagues across the globe.

a member of the EFSA Stakeholder Buro. We collaborate with the European Chemicals Agency (ECHA) and with support from EFSA, ECHA, and other organisations, we developed the SETAC Europe Certification Programme for Environmental Risk Assessors. Most recently SETAC founded the International Board for Environmental Risk Assesors (IBERA) to implement the certification programme at a global scale.

In North America, we are collaborating with the United States Congress to provide the scientific basis for the environmental risk assessment of chemicals as they were promulgating the Frank R. Lautenberg Chemical Safety for the 21st Century Act, with the United States Army Public Health Center on the development of Wildlife Toxicity Assessments for the protection of wildlife from substances of interest to the military, and with the United States Environmental Protection Agency on the advancement of whole effluent toxicity testing for detecting and addressing toxicity in surface water and ultimately protection of aquatic life.

In terms of other scientific organisations, we are, for example, collaborating with the Society of Toxicology, the International Society of Risk Assessment, and the International Society of Exposure Assessment, which have overlapping interests with SETAC. An important part of the collaborations with other organisations involves organising workshops where we invite experts from across the world, again with a focus on a multi-sector approach, working together to provide a scientific basis for the regulation of pressing environmental issues.

To what extent has the work of SETAC changed since its inception in the late 1970s, given the wider changes in environmental science and policymaking?

That is an interesting question. On the one hand, the issues have become even more complicated, thinking for example of climate change, and even more disciplines are needed to solve these issues. On the other hand, since SETAC's inception, our approach has not changed much; science remains at the core of SETAC. I think that is one of our big strengths, and this is also reflected in our slogan Environmental Quality Through Science®. Working towards a sustainable environment is our number one priority, and SETAC scientists provide the scienctific foundation. By collaborating, reviewing and evaluating the various viewpoints, and progressing on the basis of good science, SETAC supports important decision-making.

Can you tell us about the importance of involving stakeholders in environmental decision-making?

The importance is that all science is considered, and possible bias is eliminated by involving the various stakeholders. Every scientist and environmental professional has their own focus and blind spots, while together they are able to provide the full picture and filter on the basis of scientific principles and facts. What remains cannot be denied and could serve as the basis for the solution of environmental issues.

Do you feel optimistic about the future relationship between environmental science and global policy?

Yes and no. I am generally an optimistic person, but I am also aware of and frustrated by how political leaders sometimes ignore the science and go blind in pursuit of their personal or political goals. Global policy might always be affected by other things than just science. Continuous efforts are required to stress the need for science and for arguments with a solid scientific backing.

How has a global organisation like SETAC adapted to the hurdles of the pandemic?

The pandemic has really changed things. As a scientific society, we value the exchange of knowledge and need to dicuss findings to further develop our insights. While an important part of this exchange already took place in the virtual world, physical meetings were an important tool to not only stay updated and discuss results but also to find partners to collaborate in new projects. The past year, all meetings were cancelled or moved to the virtual world. In 2020, two of our major meetings were organised as online meetings, each with 1,600 scientists participating in a variety of sessions, covering all aspects of environmental toxicology and chemistry. This year, we had to once again organise the SETAC Europe annual meeting as a virtual event. Later this year, we will have major meetings organised by SETAC Latin America, SETAC Africa, and SETAC North America, either as an online or a hybrid meeting. So on the one hand, it has seriously affected our operations, but it also accelerated the developments towards increased remote participation to further extend the network, reduce the environmental footprint, and increase global collaboration.

What can our readers do to support the work of SETAC?

If you are working in the field of environmental toxicology or chemistry, then you can support SETAC by joining the network and sharing your results, ideas, and practices to advance the science in support of a sustainable environment. Participate in meetings or publish your research and share your insights and results with a broader community across the world.

Partner organisations and supporting members can provide support to help us raise funds to execute new programmes. These programmes could range from organising expert workshops to providing state of science reports on hot topics, career development programs, helping young scientists in choosing a future in environmental research, capacity building in developing countries, professional education and certification programmes in environmental risk assessment, and much more.

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