



SUMMARY REPORT

Are you optimistic about our environmental future? Reflections with the Partnership for European Environmental Research on future research challenges

**23 January 2018
European Parliament, Brussels**

This event gathered policy-makers and stakeholders in the European Parliament to highlight the work presented by the [Partnership for European Environmental Research](#) (PEER), who have over the past 16 years centered their research on topics such as climate change, water management, ecosystem services, and the green economy, to name a few. The event highlighted the achievements thus far and discussed the potential research needs to inform EU policy and enhance innovation.

Sirpa Pietikäinen MEP welcomed participants by highlighting that the main question is how to best communicate research and information to decision-makers, particularly since there is an urgent need for continuous updates. There is a need of system thinking and understanding of the environment in order to be prepared for the challenges posed by global change. It was proposed to establish a kind of social research network to inform and support policy-makers. In legislative procedures there is often the need to consider specific information and this network would provide a possibility to interact directly with scientists. With regards to the future of environmental research it was said that many questions remain unanswered in terms of scope, how to better identify trends, and meeting challenges in securing sustainable use of resources. Worry was expressed on the upcoming regulation on sustainable finance reiterating the importance of examining the interactions between resource efficiency or inefficiency, climate, biodiversity, and risk prevention.

Hanne Bach PEER Chair, Director of DCE-Danish Centre for Environment and Energy, Aarhus University (Denmark) [introduced in her presentation](#) PEER, which is composed currently of eight of the largest European environmental research centres with its main focus on environmental research and on the interaction between man and environment. PEER covers a wide range of environmental sciences developing concepts and methods that contribute to a sustainable development. Both basic and applied research is conducted and an interdisciplinary approach is applied. It was highlighted that the vision of PEER is to be a leader in integrating knowledge and expertise for sustainable development. PEER members share information, expertise, and some facilities in particular EU research projects. The centres bring together their expertise on key environmental topic also collaborating with external partners. It was outlined



that PEER works e.g. on the following topics: atmospheric environment, biodiversity and land use, soils, forests and agriculture, surface and groundwater, fragile environments, geo-information, marine environment, natural hazards, climate change, and environmental technologies, also many issues being of cross-cutting nature. Some PEER projects based on its own funds have turned into EU Framework Programme projects with larger consortia, just to mention the BASE project and OpenNESS.

Jean-François Hulot, Head of Strategy Unit, Dir I – Climate Action and Resource Efficiency, DG RTD, European Commission outlined that the results thus far of Horizon 2020 are analysed as a step to help the development of future research and innovation. It was informed that the Commission has just approved the work programme for the next three years, which has been guided by the principles of open innovation, open science, and open to the world, as well as by the EUs international commitments. It was said that there is an aspiration to align the EU policy on research and innovation to other EU policies, particularly on climate, energy, digitalisation, agriculture and food. When looking at the current work programme and to the next it is important to identify existing gaps by examining three key documents (i) the Communication of the Commission on the Horizon 2020 interim -evaluation , adopted in January 2018” (ii) the “Interim evaluation of Horizon 2020, Societal challenge 5”, focussing on environmental issues, published 1 June 2017 (iii) “Investing in the European future we want” report from July 2017 conducted by the High Level Group on maximising the impact of EU Research & Innovation Programmes. The reports outline that there are many indicators showing that environmental research is successful in the EU and that funds are delivering results. The Commission uses agencies to implement the work programmes, so called externalisation, which means that the evaluation of the projects is done externally, thus offering significant efficiency gains. It was said that the interim evaluation points to some dimensions where more is expected for example improving monitoring and indicators, increasing participation from the EU13, and developing international research cooperation. With regards to innovation it was said that innovators may not always be attracted by Europe. Referring to societal challenges 5, participation from EU13 has increased on environmental topics as well as international cooperation as the EU often takes a leading role in international fora on climate and environment. The next framework programme aims to apply three pillars (i) fundamental research (ii) innovation (iii) response to global challenges. It was said that the list of missions for this has to still be developed taking into account how to measure the impact, establish governance, and ensure co-creation. The discussions are still ongoing but it was informed that challenges such as preservation of natural capital, biodiversity loss, food security, freshwater and oceans, bio-and circular economy will be addressed. Further, a public consultation on this will take place welcoming all inputs.

Eeva Furman SYKE, Finnish Environment Institute, [outlined in her presentation](#) the importance of finding ideal sustainable solutions, which integrate the different values and needs of people.



Practical solutions to the stakeholders are offered in defining the core problem, considering ethical issues and assessing alternative methods, tools and actions. To be able to come up with these practical solutions, sophisticated solid natural and social sciences, but also the combination of both is needed. For the future of ecosystem services three things must be ensured (i) preservation of biodiversity in Europe and beyond (ii) provisioning ecosystem services in Europe, for Europe and for other parts, and (iii) that ecosystem services play a key role in the process of building pathways for sustainable development at all scales. It was also suggested that one should think in two perspectives needed for fostering ecosystem services in our societies: resilience and transformation. The hardest issue to tackle is dealing with trade-offs between various choices. The need to find nature-based solutions was stressed. The need for research that supports policy integration and the development of practices that would change behaviours and life styles were also seen as crucial for maintaining ecosystem services. Particular attention must be given to justice and ethical issues. It was also mentioned that one should search for sustainable solutions on how flows of goods, people and finances within Europe and between continents affect global ecosystem services and human migration patterns. Further, women and children are key players.

Hans Sanderson DCE, Danish Centre for Environment and Energy, Aarhus University reiterated [in his presentation](#) that when looking to the future research must be policy relevant, and in order to do so it was highlighted to better inform of risk-based solutions. It was said that concrete information is needed on the type of impacts, their dimensions, probability, risks and the costs of climate change. It was said that some of these issues are being dealt with by investments made into climate change services in Europe, which transform the climate data into decision-relevant information. It was said that the private sector is significantly under-researched in terms of climate change adaptation, e.g. types of risks and alternatives faced by European businesses. It was said that some risks are already being felt by businesses and the Financial Stability Board is documenting how climate can become the next big trigger for an economic crisis. In order to prevent this from happening there is a need to transform data into information that is relevant for businesses. It was also highlighted that there is a significant need for developing and supporting the policies that are being implemented such as the sustainable finance directive as well as the low carbon economy. There is still a need for research to develop necessary technologies and instruments for the policy to be implemented and close existing gaps in the real world. Further, the importance of the next European climate change adaptation strategy was raised underlining that the focus should be on activating local and regional actions.

Georg Teutsch Helmholtz Centre for Environmental Research - UFZ (Germany) outlined that science has advanced significantly in terms of modelling and computing facilities, showcasing a large simulation of predictions of water scarcity and droughts. The simulations based on the projections of global warming present high risks for several European countries. Particularly it



has been projected that there will be three to five months per year of drought conditions in central Europe, depending on location. For Europe it was said that these new environmental conditions could mean 40% less river flow in summer, leading to problems with cooling and waste water flows as well as cooling problems. It has been shown, in France, that 30% of cooling power might not be available due to such conditions in summer. It was stressed that higher temperature, in moderate climate change scenarios, will have an impact on soil-moisture, ground water recharge, and land use change. It was concluded that these projections should evoke a reaction and call for adaptation measures. It was emphasised that the means from science are available to address this problem as well as quantify the impacts on regional level using the coupled modelling. It was added that a variety of expertise from different fields is required in an interconnected way to optimise future measures. It was concluded that climate science has delivered the required knowledge, but regional projections and adaptation measures still need to be much further developed.

Dr. Anne Tremier IRSTEA, French National Research Institute of Science and Technology for Environment and Agriculture [outlined in her presentation](#) that environmental technologies are usually associated with e.g. process development, pollution treatment, and reducing waste. However, in order to develop an integral circular model, these processes have to integrate the use of resources, eco-design, and be thought within territorial ecology. Further, they have to provide not only products, but also environmental services and encourage responsible consumption and recycling. In order to achieve this it is necessary to assess the environmental value and life cycle of products and services that these processes provide. The Horizon 2020 DECISIVE project was mentioned, which suggests a new paradigm of management for urban bio waste by promoting the use of biotechnologies at a different scale than before. With regards to the future there is still a need for innovative technologies based specifically on waste, wastewater and residues recycling. It was emphasised that the perspective should go beyond energy production and organic matter recycling. Social challenges were raised underlining that technologies must be included in new organisational models, which must be combined and aligned with circular bio-economy models. The need for common assessment methods was raised and financial indicators are needed to assess the performance. In order to meet these challenges a link must be made between innovative technologies and societal challenges by optimising the value chains. It is necessary to work with multi-criteria analysis, on planning and regulation issues. Environmental technologies are not just a question of technical issues, but should be integrated into fields such as ecosystems services and adaptation.

The **discussion with the audience** further raised the importance of the environmental data presented particularly mentioning the projections and simulations showcased. It was said that the interaction between changes of environmental conditions and the possibility of coupling it to economic models is a great advancement, which will be further explored using different economic parameters and exploring the impact for different sectors. The role of regulation was



raised and the time needed for its implementation. It was pointed out that there is often little understanding of the time factor and cumulative effects in environmental developments. In relation to the time it takes to implement regulations both at EU and national level the environmental situation might already have changed. Further, due to different approaches taken by different countries the results may vary. It was also said that there is a strong need to reconcile policy and science resulting in better evidence-based policy. The link between science, research, policy, and legislation must be made. It was pointed out that there is no room for innovation unless policies support it mentioning the need for bio-based solutions and environmental technologies. The importance of also involving the private sector was raised mentioning that many businesses do understand this and are moving proactively even before regulations are set in place. It was reiterated that regulations can trigger innovation and with regards to adaptation help avoid unwanted paths. It was said that climate is also uniting people across the globe as there is a strong movement to tackle these issues together also with public opinion providing a strong feeling of urgency. In terms of looking for synergies it was said that the many proposals within Horizon 2020 can also be relevant to the Joint Programming Initiatives. It was raised that cities and urban areas should be given a higher priority as they play a pivotal role in finding solutions for many environmental challenges and can respond much quicker than the EU. It was further mentioned that cities are a hub for governance with many actors playing a key role in mobilising change. The need to promote nature-based solutions in both urban and rural areas was raised.

MEP Sirpa Pietikäinen and Hanne Bach thanked the participants for the interesting and inspiring discussion, also looking forward to continued collaboration and bringing further information on environmental research to the Parliament.