Working towards well informed policy

Dr Sybille van den Hove and **Dr Allan Watt** speak to *International Innovation* about their current work coordinating the SPIRAL, a much needed EU-funded research project focusing on improving understanding of the relationships between biodiversity research and policy making

Can you begin by outlining the overall aims and objectives of SPIRAL?

The overall aim of Science-Policy Interfaces for Biodiversity: Research, Action, and Learning (SPIRAL) is to enhance the connectivity between biodiversity research and policy making, in order to improve the conservation and sustainable use of biodiversity.

The issue at stake is critical: biodiversity is our irreplaceable life-support system, but we have failed to safeguard it and stem the loss of this vital resource. Decision makers and actors need efficient access to available knowledge to guide them in best practice. The role of science-policy interfaces (SPIs) is to foster connections between the diverse insights and perspectives of scientists and other knowledge holders, and the needs and interests of policy makers. SPIRAL will improve understanding of existing SPIs and provide recommendations to increase their effectiveness.

What challenges have you faced so far in meeting these objectives?

The project is both a research project aimed at a better understanding of science-policy interfaces and a support project, offering advice to those involved in the design, implementation or assessment of science-policy interfaces. So we face the challenge of ensuring an effective research process whilst simultaneously remaining responsive to political and societal change.

Furthermore, we are challenged by increasing demand for support caused by an upsurge of activity at the intersection of biodiversity science and policy. It is evident that at all levels – from the local to the international – people are realising the need to reinforce science-policy interfaces and are struggling to find effective ways to achieve this.

A third challenge relates to our focus on science-policy interfaces as an object of study: there is only a limited community of researchers working on the topic while actively linking with practice, and the nature of the subject imposes interdisciplinary methodologies that must be invented and refined as we go. In particular, there is a need to establish common definitions and concepts across a diversity of existing and possible SPIs. So SPIRAL also aims to contribute to the training of researchers interested in the field. We are fortunate to have a highly diverse team, working together across different disciplines and cultures.

How will future biodiversity and ecosystems services projects benefit from this initiative dedicated to science-policy interfaces?

Research on biodiversity and ecosystems services is being carried out within a context of continued loss of biodiversity and increasing pressure on ecosystem services, so it is crucially important that research projects coordinate their efforts and share results effectively. By focusing on enhancing the interface between biodiversity research and policy making, SPIRAL will be able to provide advice of direct relevance to future research projects. The engagement of researchers in the SPIRAL project will be as significant a factor in success as the dissemination of our results, as well as the participation of stakeholders in SPIRAL activities. These will all contribute to spreading good practice in future projects.

SPIRAL includes participating bodies from eight different European countries and Cameroon. How does this diversity contribute to SPIRAL's goals? Are there any hindrances to having people from so many different backgrounds working together?

It can be challenging to bring people together from different disciplinary and cultural backgrounds, but to do so is essential as science-policy interfaces operate differently at different scales and in different countries. All SPIRAL partners have experience in international and European projects and diversity has hitherto been much more of an asset than a hindrance. A specific strength of EU-funded research is the effective collection of a broad array of researchers, and this is particularly appropriate for environmental research; the study of complex systems benefits from a wider range of views. Practically, this diversity necessitates regular meetings complemented by frequent electronic interaction. In SPIRAL we make extensive use of Skype conferences and a project wiki.

How soon do you believe SPIRAL's work will result in tangible contributions to biodiversity governance (ie. implementation of policies or increase in biodiversity wellbeing)?

SPIRAL alone won't result in tangible contributions to biodiversity, but will facilitate the contributions that others – both scientists and policy makers – can make, by strengthening the interfaces between them. We believe that by contributing to the current reflections on biodiversity SPIs and systematically stressing the importance of SPIs in various fora, SPIRAL partners are contributing to the overall objective of a more effective and sustainable governance of biodiversity.

Interface investigations

The **SPIRAL** project aims to produce comprehensive analysis of the role of the science-policy interface, with a view to increasing the effectiveness and sustainability of environmental governance

BIODIVERSITY, THE STAGGERING variety of life in our ecosystem, is our planet's most remarkable achievement. The biodiversity we find here – to the best of our knowledge unique in the universe – is the most precious resource we have. However, mankind's rapacious consumption and relentless sprawl through natural habitats has become a serious threat to our planet's biodiversity. Despite our reliance on the biosphere for everything from building materials to foodstuffs to potential medicines for hitherto untreatable diseases, biodiversity is threatened today more than ever before, as species become endangered in ever greater numbers, and entire ecosystems are degraded or destroyed.

The sustainable use and conservation of biodiversity depends not only on individuals changing their attitudes and lifestyles but also on the actions of policy makers at all levels and in all sectors of government, and on behaviour of other actors whose decisions can have significant impact on biodiversity. It is clear that decision makers need access to the best available knowledge in order to make wise choices, and this is where the concept of the science-policy interface (SPI) comes into play. SPIs are a necessary (albeit not sufficient) ingredient of effective environmental governance and, moreover, they can contribute to reinforcing two other equally important factors: political will and public support.

Simply put, an SPI is a process to manage the intersection between science and policy; it is a general term for the social processes encompassing relations between scientists and other actors, allowing for exchanges, co-evolution, and the joint construction of knowledge with the aim of enriching decision making. Intergovernmental and scientific advisory bodies such as the Intergovernmental Panel on Climate Change (IPCC) and the European Academies Science Advisory Council (EASAC) are typical examples. Different areas of science and policy present SPIs with differing theoretical problems; the SPI, for example, is where scientists and policy makers together deal with issues such as the non-neutrality of scientists or politicians, or the inherent uncertainties and indeterminacy associated with complex issues. Ignorance is an unavoidable part of science, but this does not always align well with the requirement of government bodies to act decisively, and the time scales involved in long term studies conflict with the needs of policy makers in search of practical and easy to implement recommendations. Understanding the interplay between the differing standpoints of science and government at the science-policy interface is the starting point of the SPIRAL project.

SPIRAL (Science-Policy Interfaces for Biodiversity: Research, Action, and Learning) develops this concept with the specific goal of supporting the conservation and sustainable use of biodiversity. There has recently been increased recognition in both the scientific and the political arenas of a need to enhance the link between

DISCUSSING FLOODPLAIN MANAGEMENT

SHEEP-GRAZED LANDSCAPE, FRENCH ALPS

biodiversity research and policy making; more effective interfaces between science and policy are urgently needed in order to inform effective policies and improve institutional interrelations. Healthy SPIs in this area are also crucial to modifying the social behaviour of policy makers and political institutions, business actors, research organisations and individual citizens towards greater sustainability.

EXPLORING THE SCIENCE-POLICY INTERFACE

One of the main tasks of SPIRAL is to understand how the many factors either hindering or facilitating connectivity between scientists and policy makers come into play. This will be achieved by focusing on the relationships between four main aspects of SPIs: their 'structure', 'function', 'processes', and 'outputs'.

Structure refers to the institutional arrangements that have been set up to achieve the SPI's goals, such as intergovernmental panels, advisory boards or knowledge platforms. The SPI's functions are its main aims and stated objectives – for example some SPIs are knowledge creation or communication projects whilst others may be set up to translate research into policy advice, or alert decision-makers about emerging issues. The interactions of the interface, the actions taken by it leading to its tangible effects or outputs, are the SPI's processes.

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Processes might include participation measures, like regular meetings, e-conferencing and other forms of discussion, or the co-production of knowledge via joint development of tools, models and scenarios. Other SPI processes could be concerned with the assessment of performance through adaptive reviews or external assessments, or ensuring fairness and balance in issues of inclusiveness or transparency; the scope and scale of processes in the range of existing SPIs varies widely.

The categories of structure, function and process can be difficult to isolate from one another – one structure can perform multiple functions, and a single function can be performed in different ways by different structures. There is also some overlap between the categories of structure and process, though generally the processes relate to the day-to-day operation of the interface, and are framed by its structure. For instance, the structure of the science-policy interface could be an expert group composed of members from the scientific community, NGOs, industry and public administrations, and its processes could involve regular meetings, or informal discussions with written summaries.

This stocktaking analysis forms part of SPIRAL's plan to gain insight into how biodiversity research and, more broadly, biodiversity knowledge inform policy-making processes, in order to devise new strategies for improving the integration of scientific, ethical, moral and stewardship principles into policy. The project's results and recommendations will be synthesised and disseminated throughout and beyond the domains of biodiversity-related science and policy, through products such as a series of briefs targeted at specific audiences in the policy and stakeholder community, and a handbook on good practice for developing effective SPIs. In this way SPIRAL aims to produce a series of wider outcomes, directly contributing to the improvement of biodiversity research into policy and providing opportunities for those involved in biodiversity science-policy interfaces to share experience, network and critically analyse their successes and difficulties.

TESTING IDEAS IN PRACTISE

As well as case studies of existing SPIs that are taking place currently, such as the UK National Ecosystem Assessment or the Water Framework Directive, SPIRAL includes test cases, SPIs that are in the process of being designed and in which SPIRAL partners provide support on an ad hoc basis. These constitute real-life experiments in which some of the thinking developed in and around SPIRAL can be tested as and when appropriate. A full list of test cases is available on SPIRAL's website; examples include the Human Adaptation to Biodiversity Change project, AfriBES, the future EU biodiversity SPI, Marbef+ and the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES).

IPBES is the most significant development in the biodiversity SPI at the international level since the establishment of the Convention on Biological Diversity in 1992, and has the potential to become as important for biodiversity as the IPCC is for climate change. IPBES will require the full support of the science and policy communities for success; along with separate projects that have similar aims, such as BiodiversityKnowledge, SPIRAL is sharing its preliminary findings with the IPBES secretariat and other key players involved in the IPBES negotiations, and will continue to offer its support throughout the life of the project. As a major test case, IPBES is closely followed by SPIRAL and constitutes a very rich exploration ground.

The conceptual framework on which SPIRAL's analyses are based has now been developed, and work on mapping existing SPIs has begun. The 39 month project only started in October 2010 so it is still too early to present results, but one surprise early finding is the increasing practical focus on SPIs. At the EU level, DG Environment is currently reflecting on a possible EU mechanism of expertise for biodiversity and ecosystem services, as well as improving its overall SPI across environmental issues. Furthermore, several EU member states such as France are also engaged in designing national biodiversity SPIs. Already able to contribute to these efforts, SPIRAL is proving to be a very timely project indeed.

SPIRAL

INTERFACING BIODIVERSITY AND POLICY

OBJECTIVES

To enhance the connectivity between biodiversity research and policy making in order to improve the conservation and sustainable use of biodiversity.

PARTNERS

Centre for Ecology & Hydrology, UK • **Median SCP**, Spain • **Research Institute for Nature and Forest**, Belgium • **University of Helsinki**, Finland • **Royal Netherlands Institute for Sea Research**, The Netherlands • **University of Bucharest**, Romania • **Helmholtz Centre for Environmental Research – UFZ**, Germany • **The James Hutton Institute**, UK • **Centre de Coopération Internationale en Recherche Agronomique pour le Développement**, France

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