Insight Paper

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Embracing Evidence: Advancing Biodiversity Decision-making

The Belgian Biodiversity Platform prepared this paper as a continuation of the second **Conservation Research Matters** conference convened in Brussels on 21 December 2023 which focused on **Evidence-based decision-making for Biodiversity**. Its content is derived from the analysis of background materials, group discussions, and the keynotes delivered during the conference. This paper targets policy makers potentially engaged in biodiversity decision-making processes, as well as stakeholders contributing to scientific data and knowledge pertinent to biodiversity conservation, including researchers, citizen scientists, and data or knowledge-producing practitioners.

Takeaways

- **Diverse and relevant knowledge production:** The scientific community generates diversified and relevant knowledge supporting biodiversity conservation across various disciplines.
- **Advocating evidence-based decision-making:** While some efforts towards evidence-based decision-making exist, it is not consistently practised in conservation.
- **Challenges in bridging research, policy and practice:** There is a notable mismatch between research timelines and the urgent needs of decision-makers. This hinders the effective utilisation of knowledge and data.
- **Need for interdisciplinary approaches:** Addressing societal challenges requires embracing interdisciplinary and transdisciplinary approaches such as the consideration of socio-environmental dynamics.
- **Enabling effective use of data and knowledge:** Challenges persist in accessing and utilising available data and knowledge for decision-making, which requires further development of dedicated tools, processes and infrastructures for knowledge and data flows.

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Why does evidence-based decision-making matter?

In Europe, momentum is building for biodiversity conservation, with stakeholders increasingly emphasising the integration of science, policy, and practice (Hermoso et al. 2022). This aligns with the principles of the Global Biodiversity Framework (Convention on Biological Diversity, 2023), guiding the countries' efforts towards evidence-based decision-making and engaging into collaborative practices with government, academia and civil society.

Evidence-based decision-making is an approach to governance that aims to formulate informed decisions on policies, programs and projects by placing the best available research evidence at the heart of policy development and implementation (Young and Quinn, 2012). It is opposed to opinion-based policies, which rely strongly on the selective use of evidence such as single studies regardless of their quality, or non-verified judgments of individuals or groups, often driven by ideological perspectives or speculative conjecture.

Evidence-based decision making has become a basic principle for many decision-making entities around the world, and in Europe in particular, regarding health and environment policies (Lee and Kirkpatrik, 2012; Loftedt, 2014) since it optimises the effectiveness of the resulting actions and ensures the transparency of decision-making processes.

Over the last ten years, the use of an "evidence-based framework" has also been suggested as a way of supporting biodiversity conservation management decision-making (Pullin and Knight, 2003; Stewart et al. 2005).

The objective of the Conservation Research Matters II conference was to gauge the application of this principle in Belgium, identify the challenges hindering its implementation, and propose potential solutions for enhancement.

What is meant by EVIDENCE ?

All types of scientific knowledge, either from natural sciences or humanities, generated by a process of research and analysis either within or without the policy-making institution (Juntti et al. 2009). Information needs to be regarded as relevant, accessible and produced in conditions free of the influence of non-scientific interests. In some contexts, it may include the knowledge and expertise of lay persons or stakeholders considered as experienced-based specialists like practitioners.

Insights

• The Belgian scientific community does hold a wealth of diverse and pertinent knowledge to bolster biodiversity conservation efforts. A recent study conducted by the Biodiversity Platform revealed that 66 Belgian research units are actively engaged in addressing biodiversity-related challenges, spanning a wide array of disciplines from natural sciences to political, social, and economic sciences. This research encompasses no less than 152 distinct themes, underscoring the **breadth of knowledge potentially available for informing decision-making processes** in biodiversity conservation.

• **Evidence-based decision-making is not the rule** throughout all institutional and non governmental bodies involved in conservation in Belgium, although more and more initiatives are being taken in this direction, such as those addressing biological invasions. While certain methods show promise, particularly when addressing localised queries that rely on species occurrence data, evidence-based decision-making seems to be far less applied on a broader scale or within strategic planning.

• Conservation measures are often decided on the basis of monitoring data, but beyond these, insufficient use is made of knowledge gained from research and practice. **Better links and knowledge transfer** between the scientific, policy and practice spheres are necessary to adequately address complexity inherent in biodiversity issues.

• There is a mismatch between the time required for research and knowledge development, and the urgent demands of decision-makers, often articulated in haste, within short or very short timeframes. It is therefore important to **timely identify and characterise policy needs** so as to ensure a good match and anticipate requirements beyond the timescale of political mandates. It should avoid scientific advice to be used strategically or symbolically to justify, a posteriori, policy options that have been developed based on overtly political grounds (Juntti et al. 2009). In the case of climate change decisions, it has been shown that successful knowledge use cases involve some form of iteration between knowledge producers and knowledge users (Dilling et Lemos 2011). The same principle should apply to biodiversity conservation.

• There is a crucial need for knowledge relating to socio-environmental dynamics. **Interdisciplinary and transdisciplinary approaches** need to be further considered and embraced. This will lead to more comprehensive understanding, and the inclusive development of innovative solutions (Craver et al. 2019). Conservation is not the sole matter of natural sciences. It presents societal challenges, and the resulting actions must be known, understood, accepted, or endorsed and sometimes even carried out by the lay public. As such, it requires the consideration of multiple, often conflicting, values (Hemming et al. 2021).

• **Access to data and knowledge** is a major challenge for real and effective evidence-based decision-making. Those involved in the decision-making process are often at a loss when faced with the quantity and dispersion of the information to be considered. Moreover, the format of this data and knowledge often makes it difficult or even impossible to apply in practice. There is considerable scope for improvement in this area, for example through better aggregation in composite scores, indicators or any form that makes sense to decision-makers or conservation stakeholders. But above all, there is a need for better translation, integration and consideration of research results. Effective interface development and use, encompassing initiatives like IPBES, data infrastructures as GBIF, and decision support tools, are crucial in this respect.

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Belgian Biodiversity Platform

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The Belgian Biodiversity Platform (BBPf) was set up in 2001 by the Belgian Federal Science Policy Office (BelSPO) to coordinate research priorities and promote the results of scientific work on biodiversity in Belgium. It has evolved over the years to become a genuine interface between scientists, decision-makers and practitioners (“science-policy-practice interface”) in support of sustainable development. Its main missions today revolve around three strategic goals:

1. Providing capacity and infrastructure for biodiversity science, policy and practice
2. Facilitating collaboration between regional and federal actors to support the interface between biodiversity science and policy
3. Catalysing innovative transdisciplinary approaches that improve biodiversity decision-making processes

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