



Conference Summary

Digital Conference

Biodiversity and Human Well-Being – Europe's Role in Shaping Our Future

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Organized by FEEdA

*(BMBF Forschungsinitiative zum Erhalt der Artenvielfalt/
BMBF Research Initiative for the Conservation of Biodiversity)*

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Summary of Keynotes

Keynotes

Keynote: *“The Global Biodiversity Framework and the European Green Deal”*

Virginijus Sinkevičius (European Commissioner for Environment, Oceans and Fisheries)

- The environmental triple emergency (climate change, biodiversity loss and pollution) must be tackled simultaneously within a brief time window; need to do many things differently:
 - Radically change the way we produce and consume
 - Find innovative solutions to give more space to nature
 - At one time preserve and restore species and ecosystems, combat climate change and help communities to thrive by ensuring environmental fairness.
- The Post-2020 Global Biodiversity Framework (GBF) needs to be ambitious and transformative to create a ‘Paris moment’ with ambitious and measurable goals and targets:
 - Strong monitoring framework and review mechanism
 - Integration of biodiversity across all policies and sectors
 - Commitments of corporates and financial institutions to assess and disclose their impacts and dependencies on biodiversity and the environment
 - Enable changes in production and consumption patterns.
- Investments in ecosystem restoration and nature-based solutions is needed; international biodiversity financing to support developing countries is a crucial element.
 - EU will double financing from 2021 to 2027 reaching 7 billion € in total.
- EU plan to tackle the triple crisis: European Green Deal
 - Green Deal is the compass, even when the going gets tough.
 - Biodiversity Strategy for 2030 sets targets to protect and restore nature and to reduce pressures on ecosystems ensuring their sustainable use.
 - Proposal for EU Nature Restoration Law sets binding targets.
- Knowledge for evidence-based decision-making and robust progress monitoring is a crucial aspect.
 - EU Knowledge Centre for Biodiversity set up in 2020
 - EU and UNEP consider launching a Global Biodiversity Knowledge Centre at COP-15

Keynote: *“The EU Biodiversity Strategy to 2030: Context, Achievements, Risks and Expectations”*

Dr. Humberto Delgado Rosa (Director for Biodiversity, DG Environment, European Commission)

- EU Biodiversity Strategy for 2030 sets concrete, time-bound, measurable targets and clear responsibilities; this standard is also required for the Post-2020 GBF.
- Several other strategies have been derived from the EU Biodiversity Strategy, also influencing other policies:
 - EU Forest Strategy aims to improve quantity and quality of multifunctional forests.
 - EU Soil Strategy for soil recovery announces Soil Health Law to come next year.
 - Fighting deforestation
 - EU Knowledge Centre for Biodiversity: Guidance to protected area designation and selection of habitats and species for priority restoration actions
 - Sustainable use of pesticides regulation (Agricultural policy)
 - Land-use and forestry regulation (Climate policy)
- EU Nature Restoration Law is the most important nature-related piece of regulation since the Habitats Directive.

(both compiled by Dr. Philipp Sprenger, FEEdA Central Coordination Office)

Summary of Workshops

Plenary Workshop 1: *“Lessons learnt and not learnt: The Post-2020 Global Biodiversity Framework, the European Green Deal and Business”*

Talk 1: *“From IPBES to CBD”*

Prof. Dr. Josef Settele (IPBES Global Assessment Co-Chair; Helmholtz Centre for Environmental Research – UFZ, Germany) &

Prof. Dr. Markus Fischer (IPBES Europe and Central Asia Assessment Co-Chair; University of Bern, Switzerland)

- Policy-relevant scientific evidence is essential and had already an important impact.
- EU Green Deal and GBF pursue important science-based objectives.
- But many scientific findings and options identified by science have not been implemented, even though they are known per se. This concerns in particular too sectoral thinking and the fact that the largest environmental costs (incl. biodiversity and climate) are still externalized.
- In addition, there are still major gaps in knowledge. These include gaps in transformational research (= about transformation) and transformative research (i.e. that which transformation brings about), where the promotion of new formats is important in addition to existing research opportunities.

Talk 2: *“Risk – Return – Impact: The new Business Doctrine”*

Christian Heller (CEO, Value Balancing Alliance, Germany)

- We are measuring physical quantities like CO₂ emission, litres of water consumed, and put a monetary price tag on it. Why? Because this is the language that businesses understand.
- With monetization, you can integrate human, natural, and social capital much easier.
- With monetization, you can compare different indicators with each other.
- ALIGN, a project of the EC, is trying to integrate the Green Deal into accounting at the corporate level.
- What we are heading for is shifting from profit optimization to value optimization.

Talk 3: *“Biodiversity Research and the Science System”*

Prof. Dr. Martina Brockmeier (President, Leibniz Association, Germany)

- We need to change both the way we *do* and *evaluate* research.
- To solve major societal challenges, we need inter- and transdisciplinary research and new research structures.
- Barriers to transformation of the science system:
 1. Discrepancy between scientific knowledge and awareness in society, business and politics
 2. Lack of integration of local (and indigenous) knowledge from society and stakeholders
 3. Need for “cooperative competition” and integration of all relevant players
- We need to shift away from index-based science evaluation towards a more differentiated evaluation system that considers inter- and transdisciplinary research even more.

(compiled by Dr. Philipp Sprenger, FEEdA Central Coordination Office)

Talk 4: “The Urgency of Transforming Biodiversity Governance”

Prof. Dr. Ingrid Visseren-Hamakers (Radboud University, the Netherlands)

Governance can only become transformative when the following five governance approaches are:

- Focused on addressing the underlying causes (indirect drivers) of unsustainability;
- Implemented in conjunction; and
- Operationalized in the following specific manners:
 1. *Integrative*, operationalized in ways that ensure solutions also have sustainable impacts at other scales and locations, on other issues, and in other sectors;
 2. *Inclusive*, in order to empower and emancipate those whose interests are currently not being met and who represent values that constitute transformative change towards sustainability;
 3. *Adaptive*, since transformative change and governance, and our understanding of them, are moving targets, so governance needs to enable learning, experimentation, reflexivity, monitoring and feedback;
 4. *Transdisciplinary*, in ways that recognize different knowledge systems, and support the inclusion of sustainable and equitable values by focusing on types of knowledge that are currently underrepresented; and
 5. *Anticipatory*, in ways that apply the precautionary principle when governing in the present for uncertain future developments, and especially the development or use of new technologies.

Workshop 2a: “The Biodiversity-Energy Nexus or Solving the Green-Green Conflict”

Chairs: Prof. Dr. Christian Wirth, Prof. Dr. Vassiliki Kati

Talk 1: “Where to Sit Windfarms? Resolving the Biodiversity-Windfarm-Road Nexus”

Prof. Dr. Vassiliki Kati (University of Ioannina, Greece)

- We can't sacrifice nature to address our energy crisis, as the biodiversity crisis to follow can be even more dramatic.
- Adequate spatial planning of windfarms is the key to resolve the conflict.
- Sit windfarms in human-altered landscapes in proximity with roads, excluding roadless areas and ecologically sensitive areas at national scale.
- Sit windfarms in terrain of milder topography in proximity to roads minimizing land take.

Talk 2: “Wind Turbines in Managed Forests Partially Displace Common Birds”

Dr. Finn Rehling (Philipps-University Marburg, Germany)

- Forest bird communities benefit from improved forest quality.
- Number and size of turbines, and rotor diameter affect forest birds.
- Birds are more sensitive to forest structure than to wind turbine presence.

Talk 3: “Effects of Hydropower Use on Freshwater Biodiversity”

Prof. Dr. Jürgen Geist (Technical University of Munich, Germany)

- Existing technologies of hydropower use can result in substantial negative impacts on fishes and freshwater biodiversity, even if they promise to be “fish-friendly”, “innovative” or “ecologically sustainable”.
- Given that some of these impacts are currently being neglected, a critical and objective evaluation of existing and newly developed hydropower is required.
- Concepts of freshwater biodiversity conservation need to integrate hydropower use in concert with other stressors to develop sustainable conservation strategies.

Talk 4: “The Ecology of Ground Mounted Solar Farms in the UK”

Hannah Montag (Clarkson & Woods Ltd., United Kingdom)

- Solar farms can provide both green energy and enhancements for biodiversity – this is a significant opportunity to address both climate change and the biodiversity crisis.
- However, to fully realise these enhancements, management needs to be focussed on wildlife and there are few mechanisms to secure this.

Workshop 2b: “Conserve Biodiversity, Protect Health, Ensure Food Security”

Chairs: Prof. Dr. Johannes Vogel, Dr. Lynn Dicks, Prof. Dr. Alexandra-Maria Klein, Dr. Nike Sommerwerk

Talk 1: “What are the Impacts of Pollinator Decline on Human Well-Being?”

Dr. Lynn Dicks (University of Cambridge, United Kingdom)

- We need pollinators for food production. 75% of major food crops depend on pollinators. 5-8% of human food (by volume) depends directly on pollination. Annual market linked to pollinators is US\$235-577 billion.
- The risks to human well-being are greater when access to managed pollinators in the Global South is lost. The risks are generally lower in wealthier nations.

(compiled by Dr. Vladimir Gross, FEEdA Central Coordination Office)

Talk 2: “Incentives for Food and Farming Systems that Benefit Biodiversity”

Prof. Dr. Urs Niggli (Institute for Agroecology, Aarau, Switzerland)

- Food security for 10 billion people will require 593 million additional hectares by 2050.
- Pollution of the planet in terms of nitrogen, phosphorus, and biodiversity loss is in the “high risk” range.
- Farming systems implementing diversification strategies in a holistic way can be summarized under the term “Agroecological Farming”.
- Best described as a smart combination of traditional knowledge, farmer experience, best use of the ecological context, and technical innovation.

Talk 3: *“Scaling up and Scaling down and the Role of Science-Policy Interfaces in Nature Conservation”*

Hien Ngo (Biodiversity and Pollination Specialist, Regional Office for Latin America and the Caribbean, FAO)

- The Science-Policy Interface: Social processes which encompass relations between scientists and other actors in the policy process, and which allow for exchanges, co-evolution, and joint construction of knowledge with the aim of enriching decision-making.
- Four objectives of IPBES: 1) Assessing knowledge, 2) building capacity, 3) strengthening knowledge foundations, 4) supporting policy

Talk 4: *“The Biodiversity Impact of Food: A Conceptual Framework for the Selection of Out-of-Home Catering Indicators”*

Julia Heinz (University of Applied Sciences Osnabrück, Wuppertal Institute, Germany)

- The out-of-home catering market is the right place to create literacy for sustainable consumption: It can create food experiences, is in direct contact with people and can promote health for people and animals, conveying biodiversity and ease of use of resources on one menu. There is often a lack of orientation as to what sustainability (biodiversity conservation) means and how it can be implemented.

Workshop 3a: *“Aquatic Biodiversity and People – Challenges and Opportunities”*

Chairs: Prof. Dr. Sonja Jähnig, Prof. Dr. Mariana Meerhoff, Prof. Dr. Markus Fischer

Talk 1: *“Think like a River: What Scientists Should Do Differently to Save the World’s Freshwater Biodiversity”*

Dave Tickner (WWF, United Kingdom)

- If we’re to bend the curve of freshwater biodiversity loss, business as usual is not an option for any of us. Radical change is urgently needed across all sectors. Scientists are not immune.
- To help stimulate radical change, we need to rethink the purpose of scientific training to enable more “activist science”.
- Institutions should mainstream the training of tomorrow’s scientists in strategic thinking, influencing tactics, effective communications and other activism skills, alongside technical aspects of ecology and conservation.

Talk 2: *“No Data, no Stride – On the Relevance of Freshwater Biodiversity Data”*

Dr. Astrid Schmidt-Kloiber (University of Natural Resources and Life Sciences Vienna, Austria)

Conclusions

- European (freshwater) biodiversity monitoring **data** is still very **sparse** in time and scale and covers only **limited taxa**.
- We need **integration** of available data and new, **harmonised monitoring** schemes.

- **Limited data** and limited **reliability** of freshwater biodiversity data.

Take Home Messages

- **Better data reporting** and **overcome implementation gap**
- European-wide **group-specific, standardised, systematic, long-term** freshwater biodiversity **monitoring**
- Using **appropriate** harmonised (innovative) methods including a reliable **taxonomic backbone**
- Common strategy and **policy commitment: implementation & funding**

Talk 3: *“The Need of Healthy Oceans and Marine Biodiversity for Human Health and Well-Being”*

Dr. Ángel Borja (Marine and Coastal Environmental Management, AZTI, Spain)

- There is increasing global evidence supporting links between ocean health and human health.
- Our health depends on many provisioning, regulating and cultural ecosystem services and on their good status.
- Where you live is important, but less important than how you use the coast (for recreation or other uses).
- Global research into public perceptions and preferences on ocean and human health are needed.

Talk 4: *“Restoring Floodplain Nurseries to Increase Fish Biodiversity is Not a “One-Size-Fits-All” Approach”*

Twan Stoffers (Wageningen University and Research, the Netherlands)

- To increase fish biodiversity in modified large rivers, we propose that river restoration efforts focus on establishing spatially heterogeneous patterns and processes in floodplain restoration projects along the river (as in natural rivers), with a focus on one-sided and two-sided connected floodplains of appropriate dimensions that have year-round and long-lasting connectivity with the main channel.
 1. **Floodplain restoration works as fish nurseries**, but efforts are limited to the boundaries of the modified dynamic forces of regulated rivers.
 2. Within a river, **multiple types of complementary restoration projects** are essential to restore freshwater fish biodiversity.
 3. Within a restoration project, the presence of a **heterogeneous habitat** is important for increasing biodiversity, but for reophilic species it is less important. The presence of **flowing water habitats** is essential.
 4. An all-important element for success as fish nursery is that restoration projects maintain a **permanent lateral connection to the river**.

Workshop 3b: “Conserving Biodiversity – The Role of Economy and the Private Sector”

Chairs: Prof. Dr. Volker Mosbrugger, Dr. Stefanie Eichiner

Talk 1: “Redefining Value Through a Radical Collaboration in an Interconnected Landscape”

Martin Lok (Executive Director, Capitals Coalition, the Netherlands)

- The Capitals Coalition provides the frameworks to measure and value impacts and dependencies on four capitals; natural, social, human, financial.

Talk 2: “Business Know-How for Biodiversity: Insights from the ‘Biodiversity in Good Company’ Initiative”

Dr. Stefanie Eichiner (Chairwoman, Biodiversity in Good Company)

- More than 30 companies are members of “Biodiversity in Good Company”.
- Insights: Motivation, Activities, Reporting

Talk 3: “Biodiversity Risk is a Business Risk”

Adrien Portafaix (Associate Director in Social Impact Practice, Boston Consulting Group, France)

- Companies are encouraged to use the AR³T framework to align with a Nature Positive world: avoid, reduce, restore, regenerate, transform.
- The value of ecosystem services is higher than that of the monetized economy. If we hadn't gotten these services for free, we would not have been able to afford them.
- The companies that are suffering from the collapse of nature are also largely the ones that are driving the collapse.
- While the climate lens puts the focus on energy, the broader nature lens puts the focus on food systems.

Talk 4: “Business and Biodiversity – An Extended Framework for Managing Biodiversity Impacts”

Charlott Hübel (Center for Sustainable Leadership – ZNU, University Witten/Herdecke, Germany)

- Biodiversity is often treated in reporting as a generic or vague topic.
- Research objective: Develop a biodiversity management framework that
 - Concretizes biodiversity impacts
 - Considers organizational factors (structure, culture, etc.)
 - Can serve as a practical guide for biodiversity management decisions
- There is an urgent need for companies to integrate biodiversity into corporate management practices.
- To comprehensively manage biodiversity impacts:
 - Biodiversity has to be broken down into concrete and tangible impact areas.
 - Target, measures, and indicator development has to be supported by relevant organizational factors (values, culture, design, governance, etc.).

(all compiled by Dr. Vladimir Gross & Dr. Philipp Sprenger, FEEdA Central Coordination Office)

Workshop 4a: “Society – How to Live in Harmony with Biodiversity”

Chair: Prof. Dr. Bernhard Misof

Talk 1: “*Relational Paradigms in Social-Ecological Research: Contributions for Living in Harmony with Nature*”

Prof. Dr. Berta Martín-López (Leuphana University, Germany)

- Relational approaches that not only focus on interactions between social and ecological entities, but offer platforms to embody human-nature connectedness, can contribute to build paradigms of Living in Harmony with Nature.
- Approaches that foster relational values can support paradigms of Living in Harmony with Nature by resituating people as active nature stewards and by restructuring governance systems so that a caring ethos can guide decision-making.

Talk 2: “*The Role of Narratives in Reframing Human-Nature Relations and Cultural Transformations*”

Prof. Dr. Diana Mangalagiu (Environmental Change Institute, University of Oxford, United Kingdom)

- In many different cases, environmental change stands for different narratives and value sets not directly related to it.
- It is essential to *shift focus from studying and transforming the climate dynamics* (i.e. the symptoms of the impact of societal changes on the environment) to studying and transforming the societal dynamics that are the core drivers involved.
- In doing so, we have to move from a doomsday (insecurity) perspective to an optimist (occasion for change) perspective—and find the new narratives that can do this.
- Transformative narratives can be built bottom-up and tell a positive and engaging story, articulate a vision of “where we want to go” and provide solutions for attaining this vision, rather than articulating problems to avoid.

Talk 3: “*Indigenous Knowledge of Nigeria’s Ekuri Community in Conservation of Biodiversity and Tackling Climate Change Crisis*”

Edwin Ogar (Program Coordinator, Wise Administration of Terrestrial Environment and Resources (WATER), Nigeria)

- The proactive roles of the Ekuri community to preserve her natural heritage has the genuine capacity to meet the needs of present and future generations and is worthy of emulation by other communities to save mother Earth from total depletion of resources and accompanying negative consequences on human being.

Talk 4: “*BioWaWi-Citizen Science: Monitoring Biodiversity by Use of Crowd-Sourced Sound Data*”

Dr. Gisela Wachinger (DIALOGIK gGmbH, Germany)

- With traditional methods, habitat monitoring is stuck: too slow, too scattered. Sound files seem to be a new and better representation of biodiversity related to land use.

- The combination of citizen science (global participation of persons with local knowledge) and AI-based big data processing has the potential to unleash habitat monitoring and bring it to a new level, both quantitatively and qualitatively.
- A crowd-sound-monitoring for biodiversity could be the solution for authorities, politics, education, to rise environmental awareness, to detect endangered habitats, and to protect biodiversity.

Workshop 4b: *“Is Governance the Key in Preserving Biodiversity?”*

Chairs: Prof. Dr. Christine Fürst, Dr. Tobias Schulz

Talk 1: *“Economic Instruments and Incentives”*

Prof. Dr. Martin Quaas (University of Leipzig, iDiv, Germany)

- The value of natural capital and biodiversity is currently not adequately reflected in market prices
- Correspondingly, natural capital and biodiversity are deteriorating
- Economic instruments such as fisheries catch shares help valuing natural capital and set incentives for more sustainable use of biodiversity
- One challenge is the fair distribution of benefits

Talk 2: *“Tipping Points in the Governance Subsystem”*

Prof. Dr. Insa Theesfeld (Martin-Luther-University Halle-Wittenberg, Germany)

- To realize a holistic understanding how the provision of biodiversity and ecosystem services is embedded in sectoral governance subsystems at larger scales, we need to integrate cascading effects where one subsystem change stimulates another subsystem change. This can be supported through integrated models.

(compiled by Prof. Dr. Christine Fürst, Chair of the workshop)

Talk 3: *“Success and Failure in Forest Biodiversity Conservation Governance”*

Dr. Tobias Schulz (Swiss Federal Institute for Forest, Snow and Landscape Research – WSL)

- Sectoral (forest, agriculture) biodiversity and ecosystem services governance is characterized by multi-level competences and responsibilities of multiple actors. This may support uncontrolled losses in biodiversity. Consequently, a concerted BES governance approach implemented in regional planning and development is needed.
- Trying to measure the effectiveness and the impact of existing BES governance approaches in terms of providing more BES is one-dimensional. Governance subsystems have to be treated as dynamic outcomes, similarly to economic and ecological subsystems.

(compiled by Prof. Dr. Christine Fürst, Chair of the workshop)

Talk 4: “Transformative Governance Instruments: Acceptance from Agriculture and Forestry – A Case Study from Germany”

Dr. Marion Mehring (ISOE – Institute for Social-Ecological Research, Germany)

- The key problem of biodiversity and ecosystem services conservation is not a lack of awareness or motivation, but rather a question of successful and sustainable implementation of appropriate biodiversity and ecosystem services conservation measures. *(key message adapted by Prof. Dr. Christine Fürst, Chair of the workshop)*
- Those who are already implementing measures are doing so because they want to make a contribution (intrinsic motivation to act ecologically).
- For those who do not implement measures, the barrier is not a lack of understanding of the necessity and meaningfulness of measures, but rather concerns considering economic efficiency.

Plenary Workshop 5: “Horizon Scanning – Challenges for the Future”

Talk 1: “The Current Financial Sector is Incompatible with Biodiversity Protection”

Prof. Dr. Marc Chesney (Professor of Quantitative Finance, Zurich University, Switzerland)

- We are confronted with the bankruptcy of a system of casino finance in which debts, bets, and cynicism prevail over savings, investment and trust. This process plunges society into permanent social and environmental crises.
- This situation creates systemic risks. Ignoring the facts is undeniably the recipe for future social, environmental and economic disasters.
- Net zero emissions in 2050 or after is a problem rather than a solution.
- The exploitation of new oil, gas fields and coal mines as well as the destruction of biodiversity should be forbidden.

Talk 2: “Saving Biodiversity in a World on Fire: Towards a Convivial Alternative”

Prof. Dr. Bram Büscher (Professor for the Sociology of Development and Change, Wageningen University and Research, the Netherlands)

- Mainstream conservation has had important success but does not provide a solution to the biodiversity crisis, which has gone from bad to worse over the last decades.
- We need an alternative that tackles the root of the problem, which by definition means we have to move towards a different economy beyond (generic) growth; one such alternative is the new paradigm of convivial conservation.

Talk 3: “Zero Carbon Buildings with Straw – a Sustainable Solution for Africa and Beyond!”

Eckardt M.P. Dauck (Chairman, Impact Building Solutions Foundation, Uganda)

- Climate friendly building materials made from renewable resources, like straw and certified timber, can replace concrete and bricks at scale.
- These are advanced technologies and are no longer just for niche markets – they are global solutions. New frameworks like the Environmental, Social, and Governance (ESG) standards play a fundamental role in the adaptation process.

Talk 4: “Youth & Science: The Amplifiers of Reason”

Marvin Huber (Advisory Board, European Youth Parliament, Austria)

- Young people have through international efforts, advocacy on all policy levels, science-backed and informed opinions, devotion, and incredible resilience played a major part in putting environmental degradation back on the international agenda. Whilst still facing limited access to the decision-making table, these efforts are a testament to the role of young people at the forefront of driving politics in a science-based manner.
- Young people are able and willing to combat the biodiversity crisis. It is long overdue to establish and extend partnerships with all stakeholders in this process. Science has to connect to the living reality of young individuals, and youth needs to build on informed opinions. Science and youth need to continue their role as “amplifiers of reason”.

Take away

In one word: What do you personally take away from the conference?

