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European Conference on Biodiversity and Climate Change (ECBCC)

**Sustainability, Responsibility
and Nature-Based Solutions:
the Contribution of Public and
Private Funders**

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I. Knowledge and the Ability to Make Responsible Decisions

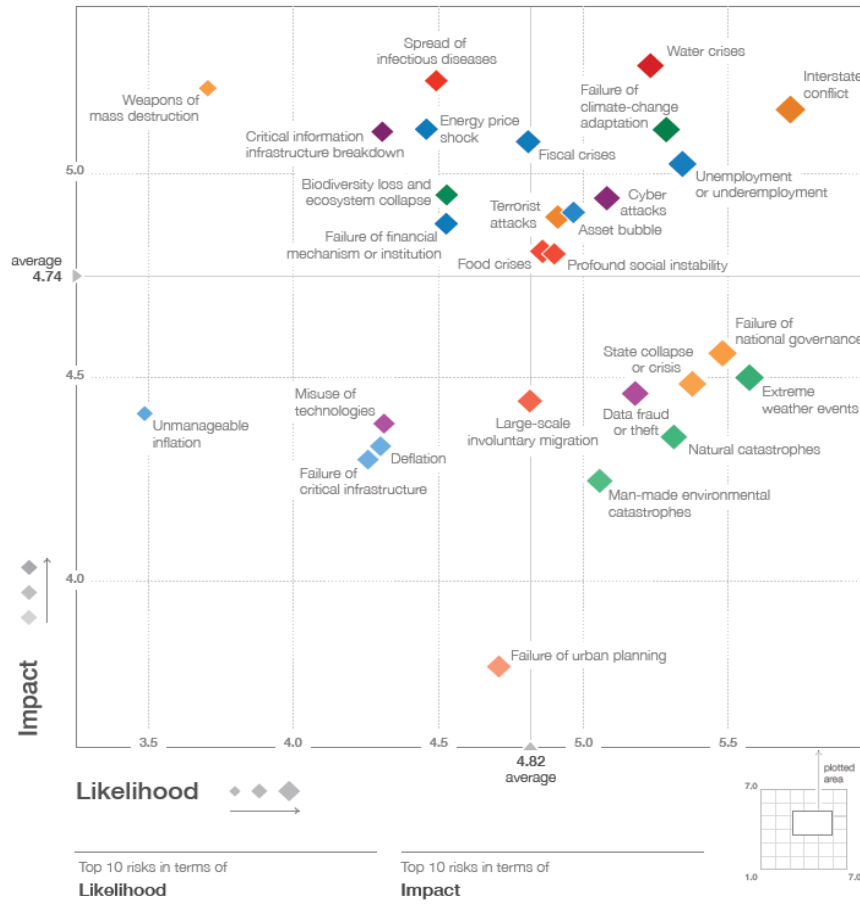
„We enter a time when society is armed with the scientific knowledge and ability to make responsible decisions.“

(David Inouye, Nature, 7 August 2015)

„Affluence destroys the environment.“

(Hans-Joachim Schellnhuber, Der Tagesspiegel, 2 November 2015)

World Economic Forum: The Global Risks Landscape 2015



COMMITTED TO
IMPROVING THE STATE
OF THE WORLD

II. A New Approach to Innovation Policy

Responsible Research and Innovation (RRI)

- Integration of civil society in innovation consultation processes.
- Fostering social and environmental innovations.
- Generating economic value from social and environmental innovations.

III. Public and Private Funders

Foundations and private funders act in a complimentary role to public agencies.

- Foundations try to be more creative, risk-taking, and innovative.
- Foundations can act more sustainably.
- Foundations can act more responsibly.

IV. The Volkswagen Foundation as a Private Research Funder



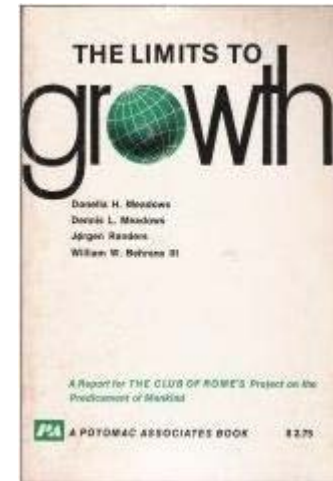
The Foundation is not subordinated to the car company of the same name.



Quelle: Wikimedia commons

Examples from the Volkswagen Foundation's Funding Tradition

- 1970s: Limits to Growth
- 1990s: „Umwelt als knappes Gut“ (environment as a scarce entity)
- 2015: „Wissenschaft für nachhaltige Entwicklung“ (transformative research initiative)



V. Towards Nature-Based Solutions

Restoration of the floodplain of the Noordwaard polder, the Netherlands



Afforestation for improved protection against natural hazards, Switzerland



A Definition and its Evolution



„A nature-based solution is a solution that ...

1. Delivers an effective solution to a major global challenge using nature
2. Provides biodiversity benefits in terms of diverse, well-managed ecosystems
3. Is cost effective relative to other solutions
4. Is easily and compellingly communicated
5. Can be measured, verified and replicated
6. Respects and reinforces communities' rights over natural resources and
7. Harnesses both public and private sources of funding“.

Nature-Based Solutions Definition

– Horizon 2020 AG (Final Report 2014)

Nature-based (i. e. inspired by, using, copying from or assisted by nature) solutions for improving society's economic, social and environmental resilience.

Inclusion/exclusion criteria SC5 AG:

- Built-in resilience – providing the ability to bounce back after perturbation. This can imply, for example, not putting all eggs in one basket, avoiding undesirable lock-ins.
- Designing systems that are reversible where possible, that are locally attuned (in a geographical but also a social sense) and energy and resource efficient.
- Designing them in ways that takes account of the larger, system context and that maintain or augment natural capital where possible.

Nature-Based Solutions Definition – Expert Group Proposal (Annex 1)

The “nature-based solution” concept builds on and supports other closely related concepts, such as the ecosystem approach, ecosystem services, ecosystem-based adaptation/mitigation, and green and blue infrastructure. They all recognise the importance of nature and require a systemic approach to environmental change based on an understanding of the structure and functioning of ecosystems, including human actions and their consequences. Nature-based solutions, however, have a distinctive set of premises: (i) some societal challenges stem from human activities that have failed to recognize ecological limitations; (ii) sustainable alternatives to those activities can be found by looking to nature for design and process knowledge. They therefore involve the innovative application of knowledge about nature, inspired and supported by nature, and they maintain and enhance natural capital. They are positive responses to societal challenges, and can have the potential to simultaneously meet environmental, social, and economic objectives.

Four Priority Areas:

(1) Sustainable Urbanisation

- The need to rethink and reconfigure cities in such a way that they provide healthy and liveable environments.
 - Ecosystem services can enhance resilience with respect to extreme weather conditions, water supply, etc.
 - There is a clear need for the integration of the social, environmental and economic dimensions.
- Which business models enable economic growth through sustainable urbanisation whilst providing health and social benefits for citizens?
- How can infrastructures be optimized?

(2) Restoration of Degraded Ecosystems

- Significant areas of ecosystems are being lost and/or degraded.
 - This trend threatens the ability of ecosystems to function, e. g. with respect to water purification, protection against soil erosion, etc.
 - There is growing interest in the business community to maintain and/or restore the functionality of degraded ecosystems.
- How can we encourage and support financial institutions and companies to invest in restoring/renaturing degraded ecosystems?
- What kind of demonstration projects are suitable for changing the mindsets of citizens?

(3) Climate Change Adaptation and Mitigation

- This is an overarching and cross-cutting priority area which impacts on all aspects of the environment.
 - It addresses not only climate change but also other social, economic and environmental challenges, e. g. flood risk management and floodplain recreation.
 - There are new opportunities for investing in techniques such as carbon biomineralisation and carbon photo-sequestration.
- How can we best integrate nature-based climate change adaptation and mitigation into key sectors of the economy?
- What is needed to establish the economic and social benefits of nature-based solutions in addition to the environmental ones?

(4) Improved Risk Management and Resilience

- The European Union is exposed to a range of natural and technological hazards, e. g. droughts, earthquakes, epidemics, and floods.
 - The implementation of nature-based solutions offers major opportunities to prevent risks.
 - There are ample opportunities to develop a methodology and empirical studies with respect to establishing the insurance value of ecosystems.
- How can we develop models for calculating scenarios of risk reduction for different types of ecosystems?
- What does it take to translate risk reduction into value creation and policy-relevant recommendations?

Seven Lines of Innovation Actions



Urban regeneration



Sustainable use of matter and energy



Improving well-being in urban areas



Enhancing the insurance value of ecosystems



Coastal resilience



Watershed management and ecosystem restoration



Increasing carbon sequestration

VI. The Multilevel Approach to the Implementation of Nature-Based Solutions

- EU level: Horizon 2020 (especially “Sustainable Cities through Nature-Based Solutions”)
- National level: BMBF („Klimawandel und Stadtentwicklung“, „Nachhaltige Urbanisierung International“ und „Zukunftsstadt“)
- Regional level: Research funding programmes for transformative research e. g. in Baden-Wuerttemberg, Lower Saxony, and Northrhine-Westphalia
- City level: currently the leading example Copenhagen
- Foundations: Climate Works Foundation, German Environmental Foundation (DBU), Allianz Umweltstiftung

VII. The Way Ahead with Nature-Based Solutions

- Capitalise on existing knowledge, and supplement where necessary, to provide a sound evidence-base for tackling some of the most pressing global challenges with solutions inspired or supported by nature;
- Integrate social, economic and environmental considerations in such a way as to result in responsible innovations;
- Deliver role-models for change that can be measured, verified, replicated, adapted and scaled-up in Europe and world-wide;
- Open up new opportunities for capacity-building in all areas of ecological expertise and related subject areas;
- Foster trans-disciplinary and multi-stakeholder involvement from design to implementation to enhance awareness, mutual learning, and optimal uptake of solutions, including societal buy-in;
- Innovate with governance, finance and business models, as well as stimulate both social innovation and market opportunities;
- Leverage both public and private sources of funding for scaling up the deployment of nature-based solutions.

Further Steps within Horizon 2020 (I)

Work Programme 17: Cross-cutting activities

Sustainable cities through nature-based solutions

- SCC-02-2016-2017: Demonstrating innovative nature-based solutions in cities
 - 2016: Demonstrating innovative nature-based solutions for climate and water resilience in cities (40 mio. euros, deadlines in March and Sept.)
 - 2017: Nature-based solutions for inclusive urban regeneration (40 mio. euros, deadlines in March and September)
- SCC-03-2016: New governance, business, financing models, and economic impact assessment tools for sustainable cities with nature-based solutions (urban re-naturing)
- SCC-04-2016: Sustainable urbanisation

Further Steps within Horizon 2020 (II)

Work Programme 12: Climate action, environment, resource efficiency and raw materials

Nature-based solutions for territorial resilience

- SC5-08-2017: Large-scale demonstrators on nature-based solutions for hydrometeorological risk reduction
- SC5-09-2016: Operationalising insurance value of ecosystems
- SC5-10-2016: Multi-Stakeholder dialogic platform to promote innovation with nature to address societal challenges

“I cannot tell whether things will get well
when we change them,
but so much I can tell:
things will have to change
if they are to get well in the end.”
(Georg Christoph Lichtenberg)

Thank you for your attention!

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