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International
Resource
Panel

BUILDING BIODIVERSITY

The Natural Resource
Management Approach

Today Janez Potočnik and Izabella Teixeira are colleagues as Co-Chairs of the International Resource Panel. A decade ago, they became friends as negotiators at the 10th Conference of Parties of the Convention of Biological Diversity in Nagoya, Japan. They have distilled that decade of experience into clear, science-based principles informed by the research of the International Resource Panel.

To the world's efforts to restore and regenerate nature, they add the single-biggest missing piece: natural resource management. The picture that emerges is one of opportunity: for biodiversity-rich nations to be recognized for the value of their natural wealth and be rewarded for maintaining ecosystem services, and for countries with high resource footprints to invest in global natural resource management as an efficient strategy to reduce their indirect pressure on biodiversity to ensure an environmentally secure future.

As policymakers prepare for CBD COP 15, these science-based principles can help them move beyond pledges and commitments, and take action that we can soon see working in the natural world. Sharing lessons from their past and present roles, and based on powerful scientific evidence from the International Resource Panel, the Co-Chairs urge Parties to push for a bold global agreement on biodiversity targets.

Countries must use natural resource management approaches to acknowledge, understand and address the direct and indirect drivers of biodiversity loss for climate, nature and socially just economic and social development.



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BUILDING BIODIVERSITY

THE NATURAL RESOURCE MANAGEMENT APPROACH



Janez Potočnik and Izabella Teixeira
Co-Chairs of the International Resource Panel

0

Executive
Summary

Page 1



1

Biodiversity
supports
humanity in all
its needs, yet we
neglect its value.

Page 5



2

In 2021 we must
seize the political
moment and
focus global
biodiversity
governance on
the drivers of
biodiversity loss.

Page 9



3

To address the
drivers of
biodiversity
decline, we must
take a natural
resource
management
approach.

Page 13



4

Four principles of
natural resource
management can
help countries
effectively
implement
biodiversity
policy.

Page 17



5

Make targets
bold and
implementable
through a
natural resource
management
approach to help
Kunming succeed.

Page 33



EXECUTIVE SUMMARY

Resource management is the link between sustainable prosperity and the survival of the natural world.

Decision makers, whether in government or the corporate sector, operate within an economic framework that does not formally recognize how much we rely on biodiversity, for everything from food and medicine to climate resilience. This means our economic systems are failing to account for the real cost of environmental damage and harmful resource use. **And so far, our efforts to protect and restore nature have overlooked the biggest single factor in biodiversity loss: the world's inefficient and irresponsible use of natural resources.**

The Aichi Targets state that governments and natural resource stakeholders ought to, among other commitments, implement plans for sustainable production and consumption. These targets were intended to keep the impacts of natural resource use well within safe ecological limits. There has

been only very limited success, but we know that it is possible to do more.

Using a natural resource management approach to fulfil this directive in the post-2020 framework means turning the underlying drivers of biodiversity loss, including consumption and production of natural resources, into opportunities for innovation and leadership with the potential to expose misaligned economic incentives and vested interests. We can address the illness, not the symptoms, of biodiversity loss, by promoting natural resource management strategies that enable the active protection, restoration and regeneration of biodiversity to drive sustainable development.

The most ambitious targets and credible implementation plans at Kunming will acknowledge this.

Based on natural resource management approaches, decision makers can apply four principles to turning biodiversity loss into biodiversity value:

Know your true impact

Every sector and every consumer must understand why and how they have an impact on nature – where the materials come from and how each step in a product's life cycle affects biodiversity. Producing, using and re-using, and finally disposing of products in resource-efficient and circular ways can reduce their impact on biodiversity or even have a net positive effect. With enough transparency about impact, decision makers can design policies that incentivize demand for these biodiversity-positive products.

Plan together

Policymakers can engage with businesses, diverse government departments and local leaders, and consult with scientists, to map the overlapping uses of natural resources, in the ocean and on land. It is the combination of local and scientific knowledge that will allow "business as usual" to be replaced with the innovative, integrated policies that are essential to simultaneously meet biodiversity, climate, socio-economic and infrastructure needs.

Grow with nature

Policies that incentivize a circular bioeconomy founded on nature-based solutions will support a global economy that leverages natural ecosystem services to improve quality of life while reducing and, where possible, reversing biodiversity loss.

Value nature

To value natural capital is not to detract from nature's intrinsic worth. Instead, it enables the economic system to recognize nature's benefits and allow investment, such as payments for ecosystem services. This valuation of natural capital will require clear international standards and careful regulation.

In 2020, 83 countries committed to the "Leaders Pledge for Nature", promising to reverse biodiversity loss by 2030 for sustainable development. Although far from universal, it demonstrated a powerful example of the new global momentum towards addressing biodiversity loss. **The focus will be on countries to honour these commitments in Kunming, through science-based targets and implementation strategies. We call on leaders to focus their strategies on natural resource management approaches – the missing link in policymaking that can incentivize transformational change.**



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Box 1

What are natural resources? A note on terminology

This piece speaks about “natural resources” and “principles of natural resource management”. We describe below some of our definitions of these concepts.

- When speaking about “**natural resources**”, we use the International Resource Panel definition, which refers to metals, minerals, fossil fuels, biomass, water and land. These resources can be tracked as flows through the economy: from extraction, through processing and consumption, to point of reuse or discarding at end-of-life.
- When referring to “**natural resource management**” and its approaches, we refer to strategies and tools to secure the sustainable use of these “natural resources”.
- When speaking about “**principles**”, we refer to evidence-based elements of successful natural resource management approaches to policymaking.
- When speaking about “**assets**”, we mean something that provides societal value by enabling better functions, such as biodiversity preventing erosion and improving the quality and resilience of crops.
- When referring to “**value chains**”, we refer to all stages in a product’s life, from supply of raw materials through to disposal after use, and encompasses the activities linked to value creation such as business models, investments and regulation (UNEP 2021a, p.23).
- Finally, when describing “**nature-based solutions**”, we refer to actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits (International Union for Conservation of Nature [IUCN]). We do not refer to all anthropogenic methods for producing biomass, such as mono-cropping, but rather practices which seek to mimic the same ecosystem services that nature provides.

In the piece you will see that these definitions are applied to explain how key “principles” of tracking, systemically planning, deliberately encouraging circularity and valuing natural resource flows, i.e. “natural resource management”, can unlock the value of biodiversity for socio-economic development.





1.

BIODIVERSITY SUPPORTS HUMANITY IN ALL ITS NEEDS, YET WE NEGLECT ITS VALUE.

Biodiversity is the diversity within species, between species and of ecosystems. It offers our world untold richness. It delivers crucial services for human health and societal resilience, while also providing clear intrinsic value¹ (Rea 2017). The advantages of a biodiverse planet are widespread and varied, from reducing the likelihood of zoonotic diseases, to mitigating the impacts of flooding. Biodiversity underpins our food systems by aiding crop pollination and promoting healthy soil formation. It boosts ecosystem productivity and resilience, ensuring every resource that humanity relies on from the natural world is amplified and protected from system shocks.

And yet – biodiversity is declining faster than at any time in human history. In less than half a century we have witnessed the disappearance of about half of Earth's forests and one million animal and plant species are threatened with extinction (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES] 2019a). Two-thirds of our marine life

is under threat from plastic pollution and overfishing, and global recorded populations of animals, mammals, birds, fish, amphibians and reptiles have fallen by 68 per cent over the last half century (World Wide Fund for Nature [WWF] 2020).

“

Earth's living systems as a whole are being compromised. And the more humanity exploits nature in unsustainable ways and undermines its contributions to people, the more we undermine our own well-being, security and prosperity.”

Elizabeth Mrema, Executive Secretary, UN Convention on Biological Diversity

We know that the primary cause of biodiversity loss is the inefficient production and use of natural resources to provision societies (IRP 2019a). The IRP Global Resources Outlook 2019 found that the extraction and processing of biomass drives over 80 per cent of land-use-related biodiversity loss. Biomass – crops, crop residues, grazed biomass, timber and wild catch of fish – is used for food, material, feedstock and for energy, of which the unsustainable production and consumption of agricultural commodities is a major culprit (IRP 2019a). Three-quarters of the Earth's surface has been altered by humans, leading to an unprecedented decline of forest and natural spaces (IPBES 2019b). This approach is self-destructive: the food system relies heavily on the ecosystem services provided by biodiversity, such as pollination, healthy soils and clean water

(IRP 2016). Further evidence of this can be found in the International Resource Panel flagship publication, the Global Resources Outlook (2019).

These provisioning ecosystem services all depend on healthy, biodiverse, natural environments. Their true value remains unknown, but the costs of ecosystem degradation are beginning to stack up. The Food and Agriculture Organization of the United Nations (FAO) estimates that, globally, \$240–560 billion worth of crops rely on honey bee pollination (FAO 2018), yet in the USA over the past 60 years honey bee hives have declined by 60 per cent (van Engelsdorp 2008). Mangrove forests help avoid an estimated \$80 billion each year globally in coastal flooding damage (Global Commission on Adaptation 2019), yet they continue to be cleared for better sea views, coastal aquaculture and maritime access.

We operate in an economy that does not recognize how much we rely on biodiversity, for everything from food and medicine to climate resilience. An estimated 1.2 billion jobs rely on effective management and sustainability of ecosystems (World Business Council on Sustainable Development [WBCSD] 2021) and 70 per cent of people living in poverty depend on natural resources for their livelihoods (Kempf 2018). This inequality is exacerbated along gender lines: 700 million people around the world regularly go hungry (UNEP 2021b), and seven out of ten of them are women and girls (Kempf 2018). Their reliance on natural resources makes impoverished populations even more vulnerable to environmental degradation and climate change (Kempf 2018).

The 2021 Dasgupta Review has found that the value of the stock of natural capital has fallen around 40 per cent per capita in the past 25 years – even as globally produced capital per head has doubled. We have failed to manage natural capital in a manner that maintains resilience and prosperity. Increased extraction of natural capital will now therefore come at the expense of future provision of the services nature provides (Dasgupta 2021; WBCSD 2021).

Nature is a resource keeping each of us alive; but it is degrading rapidly and being shared unfairly. High-income countries, representing one-third of the global population, have material consumption footprints that are 60 per cent higher than middle-income countries, and thirteen times the level of low-income countries (IRP

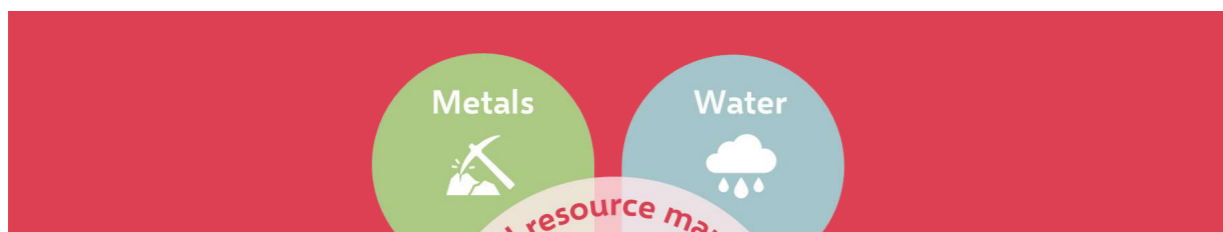


2019a). While the poor rely on biodiversity and natural resources for their basic survival, it is the wealthier nations whose consumption of these resources lead to the greatest negative environmental impact.

Trends of biodiversity decline risk causing dangerous and irreversible breakdowns of terrestrial, freshwater and ocean ecosystems, threatening the foundations of social and economic provisioning systems upon which billions of people rely. Not to mention the cultural, climate regulating and supporting services also threatened by the breakdowns of ecosystems. The world is already experiencing severe impacts from biodiversity loss, but we are struggling to take the necessary action.

1. Intrinsic value defined as the true value of an asset not determined by market prices. In the case of nature, recognizing that it has value in its own right, independent of human use.

Figure 1: Sustainable resource management nurtures biodiversity value.



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