

Enablers for Transformative Change to Sustain People and Nature Centred World

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Abstract

Capitalizing on the global urgency and the momentum to meet the objectives of the Agenda 2030, this science-policy interface recommendations focus on three interconnected areas of possible interventions: related to bio-regional collaboration, nature-based sustainable industrialization, and new forms of people-nature-centered partnerships.

We have seven years left to transform our world by 2030 and to create 'the future we want'¹ according to the universal goals and targets set in 2015 by the 2030 Agenda for Sustainable Development. The pace of changes related to planetary and human health as well as increased political instability is alarming and a new paradigm shift is needed to expedite and enable the sustainable transition from social, science, and technology perspectives and policy instruments within the time we have left. The proposal focuses on three enabling topics that could take place between now and 2030 and relate to:

1. Bio-regional collaboration

Recognizing ecological habitats of the planet shaped around five different climate zones and opportunities, which geography and ecosystems-based approaches offers for nature-based solutions.

i) The extent of environmental degradation

Unsustainable production and consumption patterns and trends, combined with the increased use of resources, put at risk the healthy planet needed to attain sustainable development. Those trends are leading to a deterioration in planetary health at unprecedented rates, with increasingly serious consequences, in particular for poorer people and regions. The world is not on track to achieve the environmental dimension of the Sustainable Development Goals or other internationally agreed environmental goals by 2030; nor is it on track to deliver long-term sustainability by 2050. Urgent action and strengthened international cooperation are urgently needed to reverse those negative trends and

restore planetary and human health (GLO 6, UNEP 2019).²

ii) An acknowledgement of the ecological habitats of the planet and its five climate zones

Working with (rather than against) the planetary ecosystems of tropical, dry, temperate, continental, and polar climate zones internationally recognized in the Köppen–Geiger climate classification³

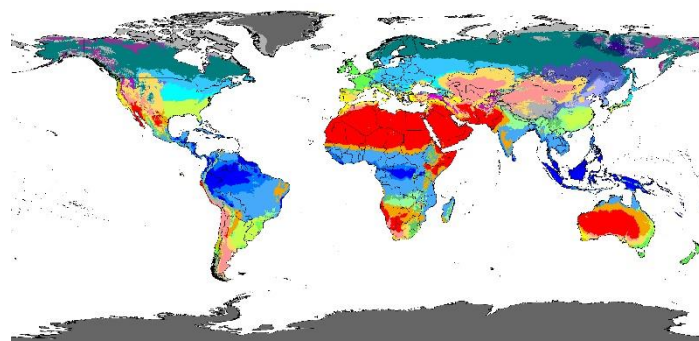


Figure 1. Beck, H.E., Zimmermann, N. E., McVicar, T. R., Vergopolan, N., Berg, A., & Wood, E. F. - "Present and future Köppen-Geiger climate classification maps at 1-km resolution". Nature Scientific Data.

would strengthen bio-regional collaboration and offer new opportunities for nature-based regional economies. In the European Union for example Regional and Urban policies under (DG Regio)⁴ of the European Commission work on regional developments enhancing rural-urban connectivity as part of the implementation of SDG Target 11.8 on Strong National and Regional Development Planning.

¹ "The future we want" (resolution 66/288, annex) 70/1. Transforming our world: the 2030 Agenda for Sustainable Development, Resolution adopted by the General Assembly on 25 September 2015

² UNEP, Global Environment Outlook 6 (2019)

³ Beck, H.E., Zimmermann, N. E., McVicar, T. R., Vergopolan, N., Berg, A., & Wood, E. F. - "Present and future Köppen-Geiger climate classification maps at 1-km resolution". Nature Scientific Data.

⁴ EU DG Regio https://commission.europa.eu/about-european-commission/departments-and-executive-agencies/regional-and-urban-policy_en

Elsewhere EIT Culture & Creativity⁵ is transforming Europe's Cultural & Creative Sectors & Industries. In the Middle East and North Africa (MENA) region, countries collaborate on the trading of the most prominent agricultural cultivar such as date palm. Enhanced bio-regional collaboration in the MENA region can be further capitalized in joint programs on the utilization of agricultural by-products to create small to medium size industries.

2. Nature-based sustainable industrialization

i) Long-term growth, natural resources utilization, and industrialization

Natural resource-based activities and their weight in a country's economy have important implications for development. For many years, however, the prospect of achieving long-term growth based on natural resources has been the subject of heated debates. To a large extent given the frequent volatility cycles characteristic of natural resource-based activities. For instance, with the significant increase in global demand for natural resources from 2000-2014, a window of opportunity opened for developing countries to reposition themselves in the world economy. The policy debate then shifted from whether natural resource abundance was necessarily a 'curse', to the way in which it could be best used to foster a process of inclusive and sustainable industrial development (UNIDO 2012).

ii) Upgrading of regional value chains, and linkages between the natural resources and economy

To a large extent, the international community agreed on the importance of overcoming at least two important challenges. First, to upgrade positions in regional and global value chains, increasing the value-added content of production and diversifying away from primary commodities; and second, to build and strengthen the linkages between the natural resources and other productive activities of the domestic economy to

maximize their impact. The decline of the commodity cycle invited assessments of the impact of resource-rich activities on economic growth. And while aggregate measures show that the success of such a course of action is rare and by no means automatic (UNCTAD 2019), it is also the truth that a few cases illustrate how developing countries in Latin America and Africa succeed in transforming natural resource industries.⁶

iii) Drivers for sustainable nature-based industrialization

While this type of aggregate analysis offers insights into how challenging a natural resource-based growth trajectory can be, it also gives little attention to one of the key drivers of successful cases: the capacity to use advanced knowledge and innovate. This, in turn, depends on the nurturing of a complex set of interactions between firms, subcontractors, public agencies, and local communities⁷

Moreover, the issue draws attention to the extent of policy space available for resource-rich countries, the majority of them developing ones, to act upon their resource-based development strategies, while managing internationally agreed rules around trade, investment, and intellectual property.

According to the International Labour Organization (ILO)⁸ nature – based solutions can generate 20 million new jobs, but 'just transition' policies are needed. Rural employment would increase significantly if investments were made in policies that harness nature while ensuring human well-being. Launched at the UN's Biodiversity Conference, COP15 in 2022, the report 'Decent Work in Nature – Based Solutions' underscores the need for a just transition – greening the economy in a way that is fair and inclusive, creating meaningful work opportunities also for sustainable industrialization and leaving no one behind.⁹

Opportunities for nature-based sustainable industrialization can be found in health-related

⁵ EIT Culture & Creativity <https://eit.europa.eu/eit-community/eit-culture-creativity>

⁶ Andersen et al. 2015; Crespi et al. 2018; Katz and Pietrobelli 2018

⁷ Andersen et al. 2015; Crespi et al. 2018; Katz and Pietrobelli 2018

⁸ ILO <https://www.ilo.org/global/lang--en/index.htm>

⁹ ILO 'Decent Work in Nature-based Solutions

https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_863632/lang--en/index.htm

industries, for example. Recent research focused on traditional medicine (Srinivas 2021)¹⁰ documents the potential for some countries to develop new industrial complexes while providing possible solutions for health service delivery. Realizing such potential is challenging, as it would require industrial policies, coordinated with other policy areas. For instance, recognition of traditional knowledge as suitable option alongside allopathic medicine remains subject to debate, and it would require changes in the scope of science and technology and innovation policies, including issues of research funding or approaches to property rights protection. Moreover, advancing industrialization in these alternative areas would require improvements in infrastructure, development of supply chain capabilities, redefining regulations pertaining to the public procurement of medical products, or those applicable to ensure products meet proper quality and safety standards.

3. New people-nature-centered partnerships

Acknowledging the role which indigenous peoples had over the millennia in safeguarding natural ecosystems, as well as the economic and technological value which indigenous knowledge has in optimizing the best use of natural resources.¹¹ New collaborative, science-based partnerships are needed to upgrade the technical capabilities of local communities, with full use of the frontier technologies (...) *We acknowledge the natural and cultural diversity of the world and recognize that all cultures and civilizations can contribute to, and are crucial enablers of, sustainable development.(...)*¹². The potential of new people-nature-centered partnerships would:

- i) Create holistic self-sustainable regional models.
- ii) Embrace transformative opportunities of frontier technologies.

- iii) Create new dynamic partnerships for the changing world.
- iv) Ensure equitable development and management of the environment for human and planetary health.



Figure 2. A holistic concept of 'Cultural Capital' © Dr Sandra Piesik

Policy recommendations / conclusions

'HABITAT: Vernacular Architecture for a Changing Climate'¹³ Piesik, S (2023) Thames & Hudson demonstrates a link between natural ecosystems, the historical context of bio-regional economies, that was shaped not only in the context of industrialization but also, more importantly, were influenced by the development culture.

1. Bio-regional collaboration.

- a) Creation of new forms of regional partnerships based on the five climate zones of the planet, or supplementation of the existing

¹⁰ Srinivas, S., 2021. Institutional Variety and Sustainable Industrial Policy. Background paper prepared for the Industrial Development Report 2022. Vienna: United Nations Industrial Development Organization. <https://www.unido.org/api/opentext/documents/download/25405859/undo-file-25405859>

¹¹ Piesik, S 'HABITAT: Vernacular Architecture for a Changing Climate' (2023),

¹² The new Agenda, item 36, p.10, Transforming our world: the 2030 Agenda for Sustainable Development, 2015, UN A/RES/70/1

¹³ Piesik, S 'HABITAT: Vernacular Architecture for a Changing Climate' (2023) Thames & Hudson, Abrams Books, Flammarion, Editions Detail, Blume and Shufusha <https://thamesandhudson.com/news/habitat-vernacular-architecture-for-a-changing-climate>

partnerships such as the Middle East and North Africa, MENA Region.

- b) An analysis of the existing regional frameworks for example MENA, EU, or ASEAN Countries from the perspective of bio-regional collaboration.
- c) The introduction of enabling policies that would allow bio-regional technology development and transfer.

2. Nature-based sustainable industrialization.

- a) Enabling policies that would bridge long-term growth, resource utilization, and bio-regional industrialization.
- b) Further strengthening of linkages between the natural resources and related economic activities.
- c) Enables for change: knowledge-based economy and innovation.
- d) Upscaling and evolution of new hybrid technologies to foster nature-based sustainable industrialization through North-South, South-South, and triangular regional and international cooperation¹⁴.

3. New collaborative and people-nature-centered partnerships.

- a) Introduction of experimental policies, that would foster a great role of culture in shaping societal behavior change for sustainable transformation.
- b) Enabling environments for new forms of bio-regional collaborative and people-nature centers partnerships with the inclusion, and not limited to indigenous peoples and frontier technology experts across all sectors.
- c) Supporting policies that would quantify economic value of culture in meeting objectives of the Agenda 2030.

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References

- Piesik, S 'HABITAT: Vernacular Architecture for a Changing Planet' (2017) Thames & Hudson, Abrams Books, Flammarion, Editions Detail and Blume
- Piesik, S 'HABITAT: Vernacular Architecture for a Changing Climate' (2023) Thames & Hudson, Abrams Books, Flammarion, Editions Detail, Blume and Shufusha
- United Nations: "The future we want" (resolution 66/288, annex) 70/1. Transforming our world: the 2030 Agenda for Sustainable Development, Resolution adopted by the General Assembly on 25 September 2015
- Eisenberg, Amy, Amato, John and Denftao 'Ethnobotany Research & Applications 7:067-113 (2009), Etnobotany Journal vol 7, 'Kam Guilzhoh nyim Guangxxih di Benxtux Wenchual nyim Zihyuanc dih Gonxliix'
- ILO, UNEP, IUCN 2023, 'Decent Work in Nature - Based Solutions' Srinivas, S., 2021. Institutional Variety and Sustainable Industrial Policy. Background paper prepared for the Industrial Development Report 2022. Vienna: United Nations Industrial Development Organization.
- UNEP, Global Environment Outlook 6 (2019) Andersen, A.D., Johnson, B.H., Marín, A., Kaplan, D., Stubrin, L., Lundvall, B.-A., Kaplinsky, R., 2015. Natural Resources, Innovation and Development. Globelics Thematic Review. Aalborg: Aalborg University Press.
- Crespi, G., Katz, J. and Olivari, J., 2018. Innovation, Natural Resource-Based Activities And Growth In Emerging Economies: The Formation And Role Of Knowledge-Intensive Service Firms. Innovation and Development [Online], 8(1), pp.79-101.
- Katz, J. and Pietrobelli, C., 2018. Natural Resource Based Growth, Global Value Chains and Domestic Capabilities in The Mining Industry. Resources Policy [Online], 58, pp.11-20.
- UNCTAD, 2019. Commodity Dependence: A Twenty-Year Perspective. Geneva: United Nations.
- UNIDO, 2012. Promoting Industrial Diversification in Resource Intensive Economies: The Experience Of Sub-Saharan Africa And Central Asia Regions. Vienna.

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¹⁴ SDG17, Technology, item 17.6, p.26 Transforming our world: the 2030 Agenda for Sustainable Development, 2015, UN A/RES/70/1