

## EDITORIAL



## How Sustainable Development Will Secure the Future of Humanity and the Planet

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The most significant UN event on sustainable development was the 1992 Earth Summit held in Rio de Janeiro. The summit was based on the Gro Harlem Brundtland Commission Report *Our Common Future*, in which the official definition of sustainable development was presented: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

At the core of sustainable development is the need to consider three pillars together: society, the economy, and the environment.

In September 2015, the UN General Assembly adopted the new 2030 Agenda "The Future We Want" and its 17 Sustainable Development Goals (SDGs). The call to implement the SDGs represents a potentially historic decision: a powerful step toward a new global agenda that engages not only governments but also businesses, scientists, civil society leaders, NGOs, and, of course, parents and students everywhere. The UN General Assembly emphasized, however, that each nation should establish its own national targets based on its specific circumstances and priorities.

One year later, at the High-Level Political Forum (HLPF) in July 2016, UN Member States expressed deep concern and serious doubts about the achievement of the SDGs due to a shortage of knowledge, methods, information, and a lack of theoretical frameworks and explanations. In response, the UN Independent Group of Scientists (IGS) was established by a decision of the UN Member States at the 2016 HLPF: "The independent

*group of scientists is to comprise 15 experts representing a variety of backgrounds, scientific disciplines, and institutions, ensuring geographical and gender balance."* The group was selected through open, transparent, and inclusive consultations with Member States and appointed by the Secretary-General.

In 2019, the Group produced and presented at the UN General Assembly the Global Sustainable Development Report "The Future is Now – Science for Achieving Sustainable Development", which stated:

*Achieving a sustainable, equitable, and healthy world requires an integrated transformations approach that addresses the Sustainable Development Goals in a comprehensive, systemic way rather than as a collection of discrete goals and indicators. With just ten years remaining, countries and regions urgently need to design and implement integrated, context-sensitive, and achievable pathways toward transformation at all levels. Adding to the concern is that recent trends along several dimensions with cross-cutting impacts across the entire 2030 Agenda are moving in the wrong direction rising inequalities, climate change, biodiversity loss, and increasing waste and pollution caused by human activity (irresponsible consumption and unsustainable production) (IGS, 2019).*

The UN Independent Group of Scientists explicitly emphasized that actions by stakeholders to accelerate progress toward achieving the SDGs must be based on knowledge about interconnections among individual goals and targets. Only a systemic approach can reveal and manage trade-offs while maximizing co-benefits.

Assessments indicate that current negative trends risk pushing the world beyond tipping points that could bring irreversible changes to Earth's systems, changes that would undermine the social and biophysical foundations necessary for universal human well-being (IGS, 2019).

Almost all sustainable development innovations produced globally since 1992, mainly related to waste and pollution reduction, can be treated only as methods and systems for reducing *unsustainability*. We argue that reducing unsustainability through incremental changes does not lead to sustainability. The shift toward sustainable development requires transformations in all spheres of life. To achieve sustainability, two conditions must be met: a necessary condition and a sufficient condition. Methods and systems for reducing unsustainability constitute the necessary condition, while a model and system for the structural transformation of the socio-economic system serve as the sufficient condition.

Based on systems theory, three types of management/control systems supporting sustainable development have been developed (Staniškis et al., 2022):

- 1 Systems for reducing unsustainability at the organizational level
- 2 Systems for generating and managing transformations within socio-environmental-economic systems
- 3 Decision-support systems for governance

It is essential to recognize that the state remains the most powerful organizational instrument humanity

has created, and therefore essential economic, environmental, and social transformations are extremely difficult to achieve without state involvement. This implies that governance must be based on a strong "science-policy-society" interface.

We must continue to learn how the ecosphere functions as a physical system and become more responsible actors within it. Above all, schools, colleges, and universities have an obligation to help preserve the habitability of the planet that their graduates will inherit.

Transdisciplinarity should become mainstream in education, research, and professional practice and should be embedded in a broad philosophical and societal context that shapes the links between research, public policy, and professional activities. This requires rethinking the role of science in responding effectively to unexpected situations and persistent challenges in our complex world. The university of the future should be inclusive of a wide range of stakeholders, actively engaged with societal concerns, open to appropriate partnerships, and fundamentally transdisciplinary in its approach to teaching and research.

To secure the future of humanity and the planet, we cannot wait for crises with potentially irreversible and unmanageable consequences. Instead, we must act now, based on new theoretical principles of sustainable development, and grounded in our current knowledge, practice, and understanding.

## References

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