

Transformations to Achieve the Sustainable Development Goals

Key Messages of the
1st Report by The World in 2050 Initiative



International Institute for
Applied Systems Analysis

IIASA www.iiasa.ac.at



Transformations to Achieve the Sustainable Development Goals

- **Transformation towards a sustainable future is possible but ambitious action is needed now!** The world and almost all regions are currently off course from achieving the Sustainable Development Goals (SDGs). Yet with bold and appropriate changes in values and deployment of policy instruments, the world can be steered towards achieving the SDGs by 2030 and providing a just and equitable future for all on a stable and resilient planet. These changes need to be based on the fact that sustainable development is a societal as well as an environmental challenge. The key is to invest in future priorities such as high-quality schools, improved health systems, efficiency and zero-carbon energy, environmental conservation and restoration, better food systems, more sustainable lifestyles, good governance institutions, and global cooperation initiatives to leverage dynamics towards the implementation of the SDGs. The World in 2050 (TWI2050) shows how to bring about six key transformations that will raise living standards, promote jobs, ensure social inclusion, and protect the natural environment, in short, to achieve “the future we want.”
- **Six transformations are necessary to achieve the SDGs!** TWI2050 focuses on six transformations that capture much of the global, regional, and local dynamics and encompass major drivers of future changes: i) Human capacity and demography; ii) Consumption and production; iii) Decarbonization and energy; iv) Food, biosphere and water; v) Smart cities; and vi) Digital revolution. Together they give a people-and-planet-centered perspective for building local, national and global societies and economies which secure wealth creation, poverty reduction, fair distribution and inclusiveness necessary for human prosperity while safeguarding the Earth system.
- **Attaining the SDGs in a resilient and lasting way, requires vigorous action now, and a people and planet focus beyond 2030!** While the 2030 Agenda provides a visionary new social contract for the world, the ambitious and aspirational SDGs are necessary but not sufficient to lead humanity towards long-term sustainable development. In the globalized era we now live in, with rising social and political turbulence and pressures on the planet, sustainable development must fully integrate people and planet across scales and can today be defined as attaining human prosperity and social inclusion within a stable and resilient Earth system. Processes that regulate the stability of the Earth system, from climate to water and ecosystems, are subject to longer-term and potentially abrupt changes. Diffusion of new infrastructure and major changes in human populations often occur on time scales of many decades. This warrants a timeframe until mid-century and beyond. Although achieving the SDGs by 2030 will be a difficult transformative process, many SDG targets will have to be revisited to adjust their ambition level with regard to longer-term socio-economic and environmental sustainability.
- **As everything is integrated in the connected world, the grand transformation requires a holistic perspective!** The 2030 Agenda is holistic with deep and complex interactions across the SDG domains. The 17 SDGs are integrated and complementary and need to be addressed in unison. Focusing on individual or selected SDGs – be this during policy analysis or implementation – comes with the danger of adverse side effects related to other SDG domains or missing out on potential synergies and resulting multiple co-benefits. A holistic perspective helps to prevent lock-ins and mobilizes opportunities to accelerate and leverage the transformation towards sustainable development. It also enables the exploration of multiple possible implementation pathways. There are a myriad of pathways to achieve sustainable development that may differ along multiple branching points describing different development characteristics such as technological and behavior change, economic and cultural transformations, transnational and unilateral governance, local implementation and global initiatives.
- **Transformational change is needed but to succeed we must take along winners and losers!** Only with transformational changes will humanity be able to close the sustainable development

gaps. But such deep change can be a double-edged sword – changes will imply winners and losers as history tells. The invention of the steam ‘age’ brought enormous positive economic benefit but also unheralded negative societal and environmental impacts. Understanding and analyzing the potential impacts, synergies and tradeoffs of the required transformations for achieving the 2030 Agenda will be essential. Likewise, it will be important to focus on and align the possible interest of different societal groups with respect to these changes and ensure that many of these groups promote the transformation. Transformational change must include ways to protect and provide opportunities for those who might otherwise be left behind and involve those who might encounter losses as a result of the changes. Transformation and justice are mutually interdependent.

- **The world is at crossroads as we are currently experiencing signs of a counter-transformation!** A new wave of nationalism, populism, ethnic awareness, and loss of values is emerging in many countries around the world. People feel threatened by accelerating change, driven by globalization, digitalization, and also the sustainable development transformation. We need to build positive narratives oriented towards the future, human centered visions on local, national, and global levels. We need significant investments in social cohesion and robust transformative alliances to enable transformational changes towards sustainable development and to avoid societal backlashes driven by insecurity, injustice and disenfranchisement. It is even more important now to integrate social and economic goals with climate, water, oceans, biodiversity and other Earth-systems so that sustainable development is not threatened in the long term.
- **A central element of the sustainability transformation is effective and inclusive governance!** Current governance models and arrangements, whether global, regional, national or institutional, are ill-suited to develop, oversee or implement truly integrated, multi-dimensional sustainable development agendas such as proposed by the SDGs. The transformation to sustainable development will require profound normative, societal, political and institutional changes. Such deep structural change is fundamental to achieving all the SDGs. Key elements include investments in capable public institutions, active civil societies, sustainability oriented alliances, science, engineering, the private sector and governments, and the formulation of plans and roadmaps to achieve the SDGs and long-term sustainability goals.
- **Think globally, act locally! Think long-term, act now! It is all a matter of scale!** The 2030 Agenda is a global compact that will be implemented across multiple scales from transnational agreements, regional and national agreements and policies, down through individual municipalities, to the operations of public and private institutions, and individuals. The applicability and priority of individual SDGs will differ across geographies. It requires a culture of global cooperation and strong and growing alliances to protect and further develop a rule based global order. To leave no one behind globally, to protect the planet, and to develop multiple sustainable development pathways across scales are key ingredients to shape a peaceful future between our highly interdependent societies.

The Challenge

In 2015, the United Nations adopted the *2030 Agenda for Sustainable Development* (UN 2015) that provides an aspirational narrative and an actionable agenda to be achieved by 2030, including 17 Sustainable Development Goals (SDGs) and 169 targets for the desired future for human development. However, the world is not on track to achieve the majority of the aspirational and ambitious SDG targets within the next decade. The urgent question is how to act on this aspirational 2030 Agenda and to have a clear understanding of the full consequences, costs of inaction and the benefits of achieving the

SDGs globally. As the SDGs are universal, and need to be achieved in unison, attaining them by 2030 requires deep transformation at all scales, from local to global and across all areas of human activity, while simultaneously reducing pressures on the Earth systems. Success is a matter of choice rather than inevitability or infeasibility. Choice requires the deployment of economic, political, and social instruments, technological and cultural innovations, and changes in lifestyles to bring about the needed transformational changes at every scale.

Six Transformations to Sustainable Development

The transformations to sustainable development imply deep structural changes, profound reforms of institutions, shifting mental maps and norms, changing patterns of human behavior, widespread awareness raising and mobilization, the adoption of a complex adaptive systems approach to sustainability issues, and unprecedented problem solving. As transformative change is needed, countries around the world require transformative governance.

In view of the complexity and breadth of the changes occurring, and those to be expected, it is essential that we begin an effort to move beyond the sectoral and fragmented approach much sustainability research has followed thus far. To move in that direction (at least for the moment as we are not able to deal with the full complexity of the total systems involved), we have selected to focus on the following six exemplary transformations that capture much of the global, regional, and local dynamics and thus encompass major drivers of future changes: (i) Human capacity, demography & health; (ii) Consumption and production; (iii) Decarbonization and energy; (iv) Food, biosphere, and water; (v) Smart cities; the (vi) Digital Revolution.

- **Substantial advances in human capacity are needed through further improvements of education and health care.** Education and health are instrumental for enabling people to

live a self-determined life, find decent work and generate income to sustain themselves, but also to undertake climate change mitigation and deal with environmental problems. The ambitions go hand-in-hand with the goals to end poverty in all its forms and to reduce global inequality.

- **Responsible consumption and production cut across several of the other transformations, allowing us to do more with less.** Evidence shows that it is possible to reduce consumption of resources considerably by taking a more service and circular economy-oriented approach with respect to mobility, housing, food systems, and other sectors of our economies. Reductions in demand leverage large saving potentials at different stages of the supply chain.
- **It is possible to decarbonize the energy system while providing clean and affordable energy for all.** Pathway analysis shows that energy-efficiency, increasing the share of renewable energy, electrification and carbon-capture and storage all play a key role in decarbonizing the energy system around 2050, while providing access to modern energy for all. Achieving the Paris Agreement is still possible but only if combined with a focus on a broader set of SDGs.
- **Achieving access to nutritional food and clean water for all while protecting the biosphere and the oceans requires more efficient and sustainable food systems.** It is possible to meet the needs of a growing world population



and at the same time limit the food system's environmental impacts by combinations of increasing agricultural productivity, reduction of waste and losses, and changes towards a less meat-intensive diet. The highest priority is to provide healthy and affordable food for all and thereby to eradicate hunger. Healthy diets and lifestyles are also essential for reducing obesity in the world.

- **Transforming our cities will benefit the majority of the world population.** Pathways show that by 2050 around two thirds of human population will live in urban areas. Sustainable cities are characterized by high connectivity and 'smart' infrastructure, enabling high quality services, with low environmental footprint. Transforming slums into decent housing is feasible with low energy and material requirements. Good city design, sustainable lifestyles, empowered local actors and participatory approaches that

avoid one-size-fits all solutions are needed to achieve this transformation to sustainable cities.

- **Science, technology and innovations (STI) are a powerful driver but the direction of change needs to support sustainable development.** The digital revolution symbolizes the convergence of many innovative technologies, many of which are currently ambivalent in their contribution to sustainable development, simultaneously supporting and threatening the ability to achieve the SDGs. There is an urgent need to bring the sustainability and the digital and technology communities together to align the direction of change with the 2030 Agenda and a sustainable future beyond. There is also a need to implement forward-looking roadmaps and governance structures that allow the mitigation of potential trade-offs of a STI revolution, particularly relating to its impact on the workplace, on social cohesion, and human dignity.

TWI2050 - The World in 2050 (2018). *Transformations to Achieve the Sustainable Development Goals*. Report prepared by The World in 2050 initiative. International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria. Available at: <http://pure.iiasa.ac.at/15347>

For more information visit: www.twi2050.org

The World in 2050 (TWI2050) @ IIASA

twi2050@iiasa.ac.at | www.twi2050.org