

Innovations for Sustainability

Pathways to an efficient and sufficient post-pandemic future

Key Messages of the
3rd Report by The World in 2050 Initiative



International Institute for
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COVID-19
RESPONSE



Innovations for Sustainability – Pathways to an efficient and sufficient post-pandemic future

- **The world is at a crossroads.** Only 10 years to go to achieving the 2030 Agenda and progress to date has been slow. The world is not on track to achieve the majority of the aspirational and ambitious SDG targets. Achievement of the 2030 Agenda is possible, but choices need to be made and require political will toward “accelerated action and transformative pathways: realizing the decade of action and delivery for sustainable development.”
- **Ensuring a just and resilient sustainable future for all** will require socioeconomic development for improved human wellbeing while preserving Earth-system resilience. There is increasing inequality within and between societies with billions left behind and overwhelming evidence of rising global risks due to ever-increasing human pressures on the planet.
- **The COVID-19 pandemic is a great and immediate threat to humanity**, especially for those with previous health risks and those deprived through poverty, lack of health care, and living in fragile states. It is challenging the status quo, providing an opportunity for disruptive and accelerated change. Properly directed, the stimulus packages underway to restart economies can ignite and leverage effects toward sustainability. Creating employment opportunities out of the crisis is a high priority, but the risk is that they may promote resurrection of the ‘old normal.’
- **Six TWI2050 Transformations provide the necessary framework** for how to achieve a sustainable, just, and resilient future. Jointly these transformations can accelerate actions within the next decade. As they take place in systems whose evolution depends on governance, values, policy tools, etc., they can be managed and socially steered as their outcomes depend on choices and human intentionality. Moreover, because the Six TWI2050 Transformations interact with all the SDGs, they provide an entry point for achieving them.
- **Transformative governance is emerging, but unfavorable political contexts threaten innovation.** There is a growing understanding of how governance needs to be designed for integrated SDG implementation. However, if global political trends – autocratization, fracturing of societies, lack of global cooperation, and distrust of science – continue to unfold, the sustainability transformation will be difficult to achieve.
- **Science, technology, and innovation are at the core of human progress** and have contributed to explosive development, such as the doubling of life expectancy, providing secondary education for half of humanity, and the wellbeing of billions, but paradoxically they have also brought about negative environmental and societal impacts. At the same time, Science, Technology, and Innovation (STI) are a collective learning process that can provide many possible solutions for achieving a sustainable future for the people and the planet.
- **Granular innovations can be expected to have faster adoption and diffusion**, lower investment risk, faster learning, more opportunities to escape lock-in, more equitable access, higher job creation, and larger social returns on innovation investment. In combination, these advantages enable rapid change. For such rapid transformation to occur investments should be directed toward innovations with high learning and diffusion potentials. This is also critically important for the achievement of the Six TWI2050 Transformations – from digitalization to decarbonization and health.
- **Prioritize the renewal of the science-policy-society interface for evidence-based transformations.** While states with higher investments in research and development and enlightened leadership perform better in managing the COVID-19 pandemic, we need a renewed global science-policy-society interface built on a culture of trust, communication of accurate information, and a reinvigoration of global science organizations.
- **Transforming service-provisioning systems is about safeguarding human needs and sharing available resources** fairly within planetary boundaries. The central question is which types of technological and social innovations can contribute to decreasing inequalities, increasing resilience and our collective ability to deal with crises, while also decreasing the pressures on natural resources. To achieve accelerated change, the world needs to move away from a supply-driven model of development to one that is low-demand and services-driven and that is based on efficiency and sufficiency, while focused on providing wellbeing and decent living standards for all.
- **Transnational crises require global context-sensitive responses.** Investing financial resources and nonmonetary support to assist local and municipal actors and international organizations is key. The COVID-19 pandemic demonstrated system-wide weaknesses in implementing an early and effective global response. However, if the right lessons are learned, it provides significant opportunities to accelerate the societal consensus and political reforms needed to achieve the sustainability transformation.

The challenge

The predicament of humankind is how to realize the benefits of global social and economic development within a safe and just operating space of a stable and resilient Earth system. 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. Humanity is at a crossroads: sustainable development is feasible at all scales – local to global – if we all along with the major stakeholders (national governments, cities, businesses, academia, and civil society) adopt actions in line with the SDGs under Agenda 2030 and the Paris Agreement. 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.

The impact of COVID-19

The COVID-19 pandemic is a major threat to humanity, especially for those with previous health risks and those living directly deprived through poverty and lack of health care, but at the same time presents an opportunity to redirect our focus on what is important to us as a society, to redirect trillions of dollars of intended public financing toward investments into innovative activities for achieving a sustainable future for all. Undoubtedly the pandemic has set back progress on achieving the SDGs, however, it has also provided an opportunity to build positive narratives oriented towards future, human centered visions on local, national, and global levels.



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, demography, and health; (ii) Consumption and production; (iii) Decarbonization and energy; (iv) Food, biosphere, and water; (v) Smart cities; and (vi) Digital Revolution. Together they give a peoples-centered perspective: building local, national, and global societies and economies which secure wealth creation, poverty reduction, fair distribution, and inclusiveness necessary for human prosperity. They are necessary and potentially sufficient to achieve prosperous, inclusive, and resilient sustainability transformation embedded in the SDGs if addressed holistically in unison. Source: updated from TWI2050 (2018).

Science, technology and innovation for sustainable development

Science, Technology and Innovation (STI) are at the core of human development. Since the onset of the Industrial Revolution, they have contributed to explosive development. However, they have also brought about negative environmental and societal impacts. The global STI community can guide the science and technology enterprise built over the past 200 years, including values, policies, and systems, to support sustainable development. For innovation to play a major role in achieving the six transformations, it is necessary to understand what innovation actually is and the processes by which new innovations, whether technological, societal, institutional or cultural, are adopted and implemented throughout society. The 'paradox of innovation' is that it is both at the core of human progress and a major cause of human interference with the environment and planetary processes. At the same time, innovations in the broader sense will provide many possible solutions for achieving a sustainable future for the people and the planet. The real question is how to harness, or steer, future innovation towards a sustainable future while avoiding further detrimental social and environmental impacts.

Efficiency and sufficiency for human wellbeing

Possible strategies for a way out of the ecological crisis include less resource use per unit of service (efficiency), the adoption of ecologically sound technologies (consistency), and the reduction of consumption (sufficiency). The main question being asked is whether well-established consumption habits can be perpetuated or not – and what this means for our economy. The central argument is that SDG12 (responsible production and consumption), and in particular its consumption component, serve

as an ideal entry point to address the 16 other SDGs. Consumption is not defined in economic terms (commercial goods and services) but from the perspective of human well-being and that of services and service provisioning systems (nutrition, communication, health care, shelter, mobility, etc.). Transforming service provisioning systems is about safeguarding human needs and sharing available resources fairly within planetary boundaries. By taking a demand-based services approach, rather than a supply-based product approach, decent living standards for all can be achieved sustainably at significantly lower cost and fewer environmental impacts than current business as usual scenarios. However, given the current development trajectory and vested interests the necessary innovations highlighted in this chapter will not eventuate without direct intervention – that is, they need to be managed and socially steered in the right direction.

Innovations in political systems, governance, and society

There is current tension between achievements in transformative governance and global political trends which makes it more difficult to achieve the transformation to sustainability. Innovations have occurred, with many states introducing institutional frameworks that emphasize horizontal coordination across policy sectors, vertical coordination across levels of state, multi-stakeholder engagement and high-level political leadership. Although the COVID-19 pandemic has accelerated negative political trends, it has also provided opportunities for effective sufficiency policies and for accelerating social tipping points for transformation to sustainability. There is a need to invest in a global science-policy-society interface, which informs evidence-based policy making through higher investments in research and development, the creation of trust in science, the restructuring of global science organizations, and a change to the incentive structures of scientists to improve the communication of research results to the public.

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