The Challenge

The Sustainable Development Goals (SDGs), unanimously adopted by the United Nations in September 2015, provide an aspirational narrative for the desired future for human development with an actionable agenda. The aspiration is for a world free from hunger, injustice and absolute poverty, of universal education, health and employment with inclusive economic growth, based on transparency, dignity and equity, all achieved within the boundaries of the planet. The urgent question now is how to act on this aspirational agenda and to have a clear understanding of the full consequences and cost of inaction and the benefits of achieving SDGs in every major region of the world.

The World in 2050 (TWI2050) is an initiative designed to help answer these questions. **TWI2050** aims not only to contribute to this understanding but also develop science-based transformational and equitable pathways to sustainable development that can provide much needed information and guidance for policymakers responsible for the implementation of the SDGs.

WORLD DEVELOPMENT WITHIN PLANETARY BOUNDARIES

The Objective

The goal of **TWI2050** global research intiative is to provide the fact-based knowledge to support the policy process and implementation of the 2030 Agenda. **TWI2050** aims to address the full spectrum of transformational challenges related to achieving the 17 SDGs in an integrated manner so as to minimize potential conflicts among them and reap the benefits of potential synergies of achieving them in unison.

The SDGs set out very clear and ambitious global goals across social, economic and environmental areas with important interactions between and among these goals (e.g., between energy and climate, between food security and ecosystems, etc.). What is lacking, but urgently required, is an assessment of the viability of achieving these multiple social–economic–environmental–planetary goals simultaneously using integrative and systemic methodological approaches. This is necessary to answer questions such as:

+ How do we meet the hunger, poverty, energy, growth goals while meeting the environmental goals?

+ What are the synergies and trade-offs?

+ What are the costs of pursuing social goals without meeting sustainability goals and the other way around?

The World in 2050 (TWI2050) is a global research initiative launched by the International Institute for Applied Systems Analysis (IIASA), the Sustainable Development Solutions Network (SDSN), and the Stockholm Resilience Center (SRC).

Sustainable Futures

One of the most pressing challenges currently facing the global community is how to realize the benefits of future global social and economic deveolpment within a safe and just operating space of a stable planet. There is still significant inequality between and within societies and overwhelming evidence of rising global risks due to ever increasing human pressures on the planet. Ensuring future sustainable development will require socioeconomic development within sustainability limits and budgets for improving human well-being and preserving natural resources and environmental processes that regulate ecosystem and planetary resilience (often referred to as planetary boundaries).

A sustainable development pathway must also take account of the critical drivers of human capacity, demographic changes, opportunities for technological innovation and diffusion, sound institutions and transformative governance capabilities, sustainable diets, and other critical socioeconomic developments.

TWI2050 Framework
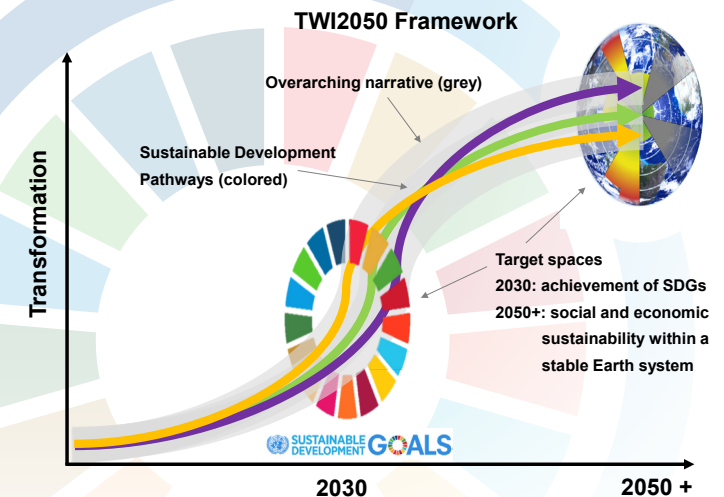
Addressing Critical Knowledge Gaps

There is an urgent need for a truly **integrated, comprehensive quantitative understanding of sustainable development pathways**, accounting for the interlinkages between the economy, technology, environment, climate, human development and planetary boundaries. The currently used long-term projections for the world economy do not tend to account for the impact of climate change or different demographic developments. Similarly, models for climate change mitigation are poorly integrated with models for biodiversity as well as the use of land and water resources. Moreover, we lack a proper understanding of the interrelations between policies aimed at productivity growth, material welfare, energy access, and environmental sustainability.

The need for regional perspectives A large number of sectoral and integrated global models exist, but they often lack appropriate downscaling to the major regions. **TWI2050** will downscale and interpret its integrated analysis to provide a better understanding of how every major world region can achieve sustainable development. Exemplary country studies will complement the regional perspective.

A detailed understanding of the opportunities and needs for technological change Achieving sustainable development requires decoupling of environmental resource use and pollution from economic activity and social progress on a historically unprecedented scale and depth. Such decoupling can only be achieved through massive advances in technologies and their widespread adoption. Similarly, modern ICT, local and traditional knowledge, biotechnology, and other technologies can help transform the way countries tackle major human development challenge and enhance local and Earth resilience. **TWI2050** will seek to develop a robust understanding of how modern technologies and associated policy frameworks can support and underpin sustainable development pathways.

Members/Network

TWI2050 brings together a network of leading policymakers, businesses, analysts, modeling and analytical teams from around the world to collaborate in developing pathways toward sustainable futures and policy frameworks needed for implementing the SDGs, and more importantly, for achieving the needed transformational change. For an up-to-date list of members and partners, how to join and general information please visit **www.twi2050.org**.

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A global research initiative in support of a successful implementation of the United Nations 2030 Agenda