TWI2050
The World in 2050
www.twi2050.org

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Executive Director - Stockholm Resilience Centre
TWI2050 What it may Become

A global analytical platform, where leading knowledge partners on integrated world development and Earth dynamics, join forces to provide state-of-the-art analyses, assessments and scenarios of pathways to attain the SDGs within Earth’s safe operating space.
Strategic/Analytical Objective

Analytically explore Sustainable Development Pathways to attain the SDGs within Planetary Boundaries
The World in 2050 (TWI2050)

✦ How to achieve World development within a safe and just operating space on Earth

✦ Explore multiple-benefits and tradeoffs of attaining the SDGs within a “safe space” and how to achieve sustainable futures

✦ Advance Sustainable Development narratives and explore Pathways to attain them through integrated modelling and analyses

✦ Sustainable Development Pathway based on existing literature e.g. SSP1, GEA, DDPP
Radical transformative pathways to meet the SDGs within planetary boundaries
Vision: Sustainable Future within Planetary Boundaries

Incremental Transformation Diffusion $\rightarrow$ 2030: Achievement of SDGs
Radical $\rightarrow$ 2050: Sustainability transformation $\rightarrow$ Back to the “Garden of Eden”

"Doing More with Less" within Planetary Boundaries

Source: After WBGU, 2011
TWI2050 Framework

Overarching narrative (grey)

Sustainable Development Pathways (colored)

Target spaces
2030: achievement of SDGs
2050+: social and economic sustainability within a stable Earth system

Transformation

2030

2050 +
Overarching Narrative of a world transformation to prosperity within a stable and resilient planet

Complemented by regional, national, sectoral, cultural narratives…

Developing Narrative(s) for a transformation to sustainable development in Africa that meets the SDGs within planetary boundaries
Tangible Outputs

- SSP+ Beyond Climate Only 2050 aligned with SDGs
- Agree on multi-modeling collaborative sharing and standards
- Identify and launch tangible analytical initiatives (sectoral; regional; nexus/SDG-combinations; …)
- Time line towards TWI2050 global report (2 years holistic global report)
- Time line towards first set of TWI2050 modeling outputs (6 months short-term step)
- Long-term establishing TWI2050 as integrated platform for integrated Sustainable Development Pathway Analyses
Co-Benefits

Sustainable Consumption & Production radiate co-benefits and create opportunities to achieve multiple goals.

Energy storage
Fertilizer & water efficiency
Climate-resilient agricultural infrastructure
Waste & overconsumption reduction
Sustainability

- Planetary boundaries define the solution space for environmental SDGs.

- Direct consequences for many goals.

- Fertile soil, stable growing conditions, clean water for drinking and agriculture are preconditions for other goals.

- Good place to start looking for co-benefits and tradeoffs.
Back-casting scenarios exploring pathways to attain the SDGs within Planetary Boundaries

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TWI2050 “Core Team”

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- EC-JRC: Apollonia Miola, Frank Neher
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- JGCRI: Jae Edmonds
- Kiel University: Jörn Schmidt
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- PIK: Elmar Kriegler
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- SDSN: Guido Schmidt-Traub
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TWI2050 “Principals”

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- Jeffrey Sachs
- Pavel Kabat
- Elmar Kriegler
- Keywan Riahi
- Detlef van Vuuren
- Dirk Messner
- Johan Rockström
The World in 2050 Network

- Centre for Integrated Studies on Climate Change and the Environment (CIRED)
- Climate Center Service Germany (GERICS)
- Earth Institute, Columbia University
- European Commission, Joint Research Centre (JRC)
- Energy Planning Program, COPPE, Federal University of Rio de Janeiro
- Environmental Change Institute (ECI) at the University of Oxford
- Fondazione Eni Enrico Mattei (FEEM)
- Future Ocean
- German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE)
- International Institute for Applied System Analysis (IIASA)
- Millennium Institute
- MIT Joint Program on the Science and Policy of Global Change
- National Institute for Environmental Studies (NIES)
- National Renewable Energy Laboratory (NREL)
- Organisation for Economic Co-operation and Development (OECD)
- Potsdam Institute for Climate Impact Change (PIK)
- Stockholm Resilience Centre
- Sustainable Development Solutions Network (SDSN)
The World in 2050 Network

- Alpen-Adria University (AAU)
- Analysis, Integration and Modelling of the Earth System (AIMES)
- Austrian Research Promotion Agency
- Australian National University (ANU)
- Arizona State University (ASU)
- University of Natural Resources and Life Sciences (BOKU)
- Brazilian Federal Agency for the Support and Evaluation of Graduate Education (CAPES)
- Centro Nacional de Monitoramento e Alertas de Desastres Naturals (CEMADEN)
- Centre for Global Sustainability Studies (CGSS)
- Commonwealth Scientific and Industrial Research Organization (CSIRO)
- Conservation International
- Earth League, whole Earth system modelling initiative
- Empresa Brasileira de Pesquisa Agropecuária (Embrapa)
- Forestry and Forest Products Research Institute (FFPRI)
- Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP)
- Fundação Oswaldo Cruz
- Future Earth
- Global Environment Facility (GEF)
- Imperial College
- Indian Institute of Technology (IIT)
- Institute for Advanced Sustainability Studies (IASS)
- Institute for Global Environmental Strategies (IGES)
- International Energy Agency (IEA)

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The World in 2050 Network

- International Food Policy Research Institute (IFPRI)
- International Monetary Fund (IMF)
- Intergovernmental Panel on Climate Change (IPCC)
- Korea University (KU)
- London School of Hygiene & Tropical Medicine
- Mercator Research Institute on Global Commons and Climate Change (MCC)
- National Center for Atmospheric Research (NCAR)
- National Science Foundation (NSF)
- Pacific Northwest National Laboratory (PNNL)
- PBL - Netherlands Environmental Assessment Agency
- Research Institute of Innovative Technology for the Earth (RITE)
- Rheinisch-Westfälische Technische Hochschule Aachen (RWTH)
- Stakeholder Forum
- Swedish Research Council for Sustainable Development (FORMAS)
- Tsinghua University
- United Nations Department of Economic and Social Affairs (UNDESA)
- United Nations Environment Programme (UNEP)
- Université Catholique de Louvain
- University of Sussex
- US National Academy of Sciences (NAS)
- World Bank
- World Wildlife Fund (WWF)