SESSION 5: INCREASING THE GLOBAL IMPACT OF SCIENCE FOR SOCIETAL TRANSFORMATION TOWARDS SUSTAINABILITY

A model for implementing Missions Science for Sustainability

Alan Bernstein

Member of the Technical Advisory Group

TAG MEMBERS

- **Pamela A. Matson** Director Stanford University Change Leadership for Sustainability Program (Co-Chair)
- **Albert van Jaarsveld** Director-General of the International Institute for Applied Systems Analysis (Co-Chair)
- **Alan Bernstein** President and CEO CIFAR
- **Barend Mons** President CODATA, Professor of Human Genetics Department – LUMC
- **Connie Nshemereirwe** Director Africa Science Leadership Programme
- **Ian Goldin** Professor of Globalisation and Development at the University of Oxford
- **Ingrid Petersson** Director General Formas – the Swedish Research Council for Sustainable Development
- **Lorrae Van Kerkhoff** Professor and Director Institute for Water Futures
- **Maria Ivanova** Professor and Director of the School of Public Policy and Urban Affairs, Northeastern University, Boston
- **William Clark** Harvey Brooks Research Professor of International Science, Public Policy and Human Development Harvard University
- **Zakri Abdul** Hamid Chairman Atri Advisory, Ambassador and Science Advisor, Campaign for Nature (CFN)
- **ISC support** – Salvatore Arico, Megha Sud, Katsia Paulavets, Luis Gomez-Echeverri, Guillermo A. Lemarchand

THE COMMISSION'S AND TAG'S TASKS:

- To find new ways to support and implement science missions that will:
    - Accelerate progress towards the SDGs by 2030 and further sustainability goals thereafter
    - Put the humanity on the path toward inclusive, intergenerational well-being of both people and our planetary life support systems
- To propose approaches for aligning funding with the accomplishment of those missions

NEED FOR A DIFFERENT KIND OF SCIENTIFIC EFFORT IN SUPPORT OF SUSTAINABILITY

Need for new ways of undertaking, delivering and translating actionable knowledge:

- trust-building, collaborative efforts between scientists and stakeholders
- focused on challenges identified by stakeholders and decision makers
- focused on complex ‘nature-society’ issues
- focused on interactions across sectors
- complementary and integrative, not competitive, with the work of other stakeholders

THE TAG'S RESPONSE:

- **Focus on *how* not *what***
- **Fundamental mind shift in funding: the process matters/not just outputs**
- **We need science that engages with society to generate actionable knowledge in the pursuit of sustainability**

PROPOSED MODEL

GOALS OF THE PROPOSED MODEL

- Harnessing context-specific actionable knowledge to address the most pressing demand-driven sustainability challenges that occur at the intersection of multiple SDGs — “nexus challenges” - at the local, regional and sub-regional levels

- Building trust and legitimacy through broad stakeholder co-design, co-production and co-implementation processes

- Focusing efforts that complement and integrate rather than compete with existing efforts to promote sustainability

A PROPOSED STRUCTURE: REGIONAL SUSTAINABILITY HUBS

Sustainability Hubs will serve as boundary spanning platforms for mobilization, coordination, and alignment of diverse relevant actors, scientific communities, and existing initiatives to address sustainability challenges that are regionally identified, complex, and at the nexus of multiple sectors.

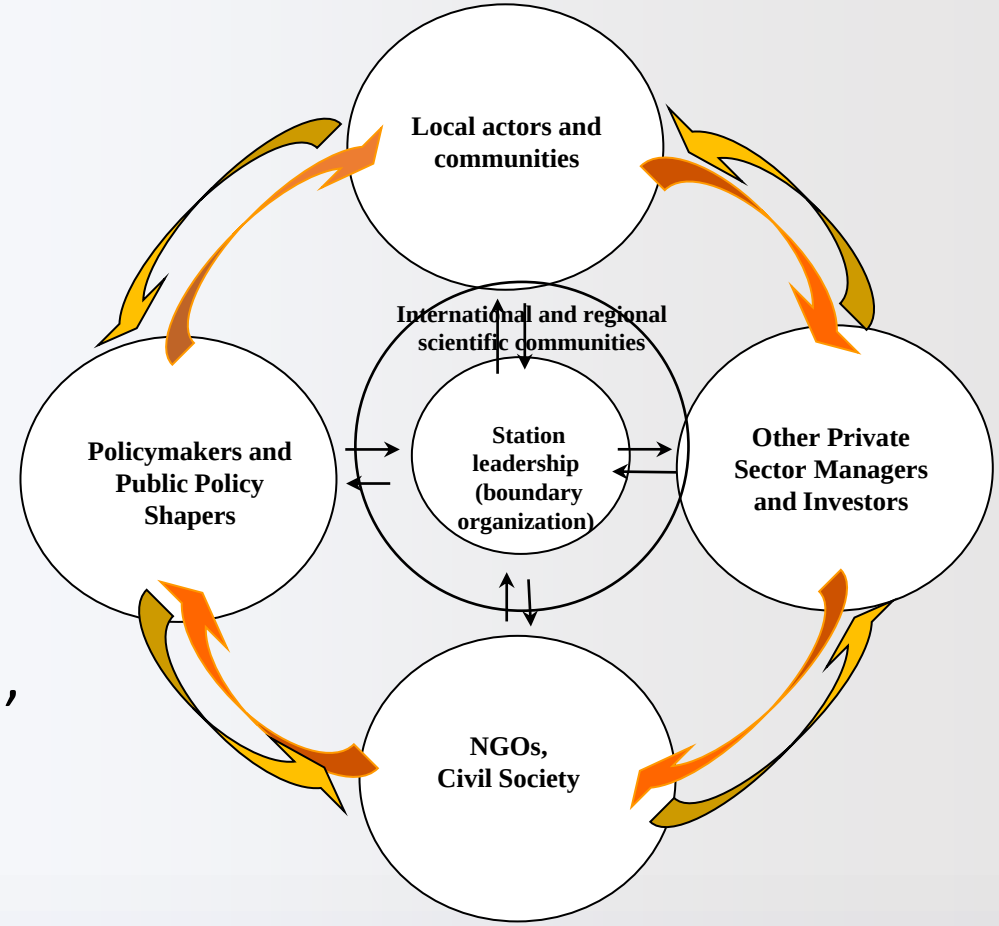
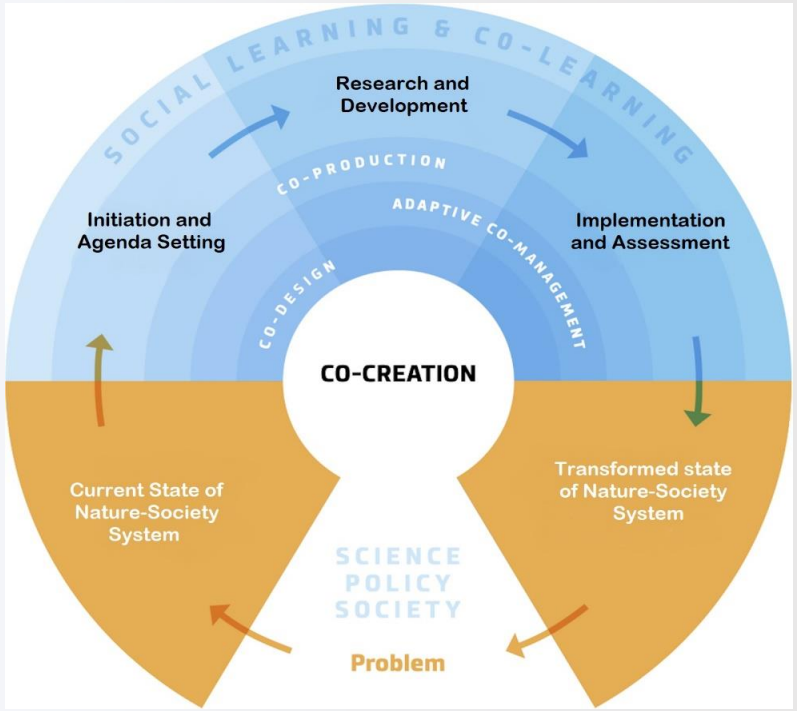


Figure: Adapted from S. Liu. 2004

A PROPOSED STRUCTURE: REGIONAL SUSTAINABILITY HUBS

*"The **key characteristic** is the systematic approach to engagement of decision-makers and stakeholders in collaborative agenda setting, and engagement of appropriate and relevant scientific expertise along with non-science participants in problem definition, research and knowledge development and integration, implementation and testing."*



The transdisciplinary activities of Sustainability Solutions Teams, *Adapted from Hakkarainen et al. (2022), Sustainable Development, 30: 309–325*

FUNDAMENTAL ELEMENTS OF SUSTAINABILITY HUBS

- **Employed leadership and core personnel** to serve as key boundary spanners

- **Sustainability Solutions Teams** engaged in knowledge production for a specific challenge-related effort for a limited time determined by the Hubs' needs:

  - To engage external scientific community (from the region and/or internationally) and non-academic stakeholders, (supported via voluntary contributions, short or long-term sabbaticals, term-based grants, etc.)

- **Structures not pre-determined, but not vast research facilities** (a virtual hub, a physical entity integrated in existing facilities, a new stand-alone facility, or hybrid combination)

REQUIRED CAPACITIES AND EXPERTISE FOR HUBS' CORE STAFF AND INFRASTRUCTURE

- Inspiring leadership with strong boundary spanning skills and transdisciplinary experience
- Transdisciplinary expertise
- Expertise in facilitating participatory approaches
- Nexus analytical, modelling and pathway exploration capabilities
- Synthesis and systems capabilities
- Data and information stewards
- Computational and facilitation infrastructure
- Commitment to local and regional well-being as well as global coordination/ interaction and scale

A GLOBAL NETWORK OF DISTRIBUTED SUSTAINABILITY HUBS

- Implementation in phases: starting from a focused investment of a few hubs
- Evolving and growing over time (~20), taking into account acquired experience
- Linked through a global knowledge sharing platform

FUNDING APPROACH AND REQUIREMENTS

- **Different approaches and relationships** with funding partners:
  - Engagement of funders in co-design process
  - Fundamental mind shift in funding: processes, not only knowledge outputs
- A **central fund** created by all funders and partners or **dedicated Hub funders**
- A rough funding estimate per Hub:
  - Core Hub support of 5-10M USD/year
  - Additional 10-40M USD/year of research support and implementation

Not even 1% of the global annual R&D investment with a significant potential return on investment for global society

OUTCOMES

- A **novel mechanism to fast-track achievement** of SDGs in regions where progress is lagging most
- The building of a **global community** of scientific, policy development and stakeholder **expertise capable of resolving complex and nexus SDG matters**
- **Trust building** between the scientific community and the societies it serves
- Promoting **global cooperation** in service of a more sustainable planet and a dignified future for humanity

We must go fast, but we must go together