

# Cross-Cutting Issues and Future Challenges: From First ICSS in Tokyo

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# Challenges in Sustainability Science

- Academic Foundation
- Institutionalization
- Networking and Collaboration with Stakeholders in Society

# Academic Development

- Diversity in concepts, methodologies, tools
  - STS - framing, normativity,
  - Engineering - technology, pragmatism
  - Systems science - complexity, resilience
- Need to produce rigorous research results
  - Although the criteria on what is considered as rigorous could be different from traditional disciplines
- Education and research combined effectively to produce graduates with necessary skills as well as to produce outputs useful for addressing societal needs
- Evaluation criteria for research conducted through collaboration with stakeholders

# Institutionalization

- Programs
  - Increasing number of master's/doctoral programs in different universities
  - e.g. Graduate Program in Sustainability Science (GPSS) of the University of Tokyo
- Societies/associations/conferences
  - First ICSS held in Tokyo in February 2009
  - ICSS Asia held in Bangkok in November 2009
  - AAAS Annual Meeting
- Journals
  - Launch of new journals (e.g. Sustainability Science)
  - Association with established journals (e.g. Section on Sustainability Science in PNAS)
- Promotion and Career Path Development
  - Incentives of researchers need to be adjusted to promote cooperation and collaboration between those in different disciplines and faculties
  - Adjustments in the criteria for evaluation of performance
  - Promotion and tenure structure need to be adjusted in not only in one university, but also in other universities and research institutes for
  - Facilitation of mobility between different places and long-term career paths

# Networking and Collaboration with Stakeholders in Society

- Involving various stakeholders in society who are not necessarily academics might pose difficulties in producing academic results in the traditional sense.
- The process of collaborating with stakeholders for sustainability needs to be evaluated appropriately as to be credited in education and research.
- Critical for students who enter this field to see successful models of establish career paths in academia, industry, and government.
- Graduates from sustainability science programs needs to be prepared to make visible and effective contributions to the international community in decision making.
- Networking favoring strong actors to become stronger, excluding the disadvantaged (under the working of increasing returns)
- positions in industry, government, and civil society, research academically excellent, and services meeting societal needs (Third generation of universities)
- How to implement trans-disciplinary research, Problem-oriented research

## Some Suggestions for the Future

- Exchange of students, fellows, and faculty members between universities, with scholarships and fellows (already started partially)
- Interaction between students and faculty members in university and employees and researchers in industry
- Coordination of academic programs (bilateral/multilateral schemes)
- Joint workshop/summer school for doctoral and young researchers to show research results (e.g. emergence of the science of design)
- Exploration of career paths for graduates and research needs and identification of necessary skills and competences through continued dialogues with industry, public sectors, etc.
- Coordinated efforts for effective outreach to decision makers and stakeholders in society – branding of ICSS
- Demonstrate a proof of concept that sustainability science is feasible, viable, and useful to stakeholders
- Visualization of the process of demonstration projects