


## TENTATIVE REFLECTIONS ON A FRAMEWORK FOR STI POLICY ROADMAPS FOR THE SDGs

STI Roadmaps for the SDGs, EGM International Workshop  
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### THIS PRESENTATION

- **Inno4sd network**
  - Overview
  - Highlights of our work
    - STIR: Testing new approaches to STI policy reviews
    - Ongoing work on STI policy roadmaps for the SDGs
- **Tentative reflection on the session questions**
  - What approaches are effective in aligning and coordinating national and subnational efforts on STI for the SDGs?
  - What approaches are effective in aligning and coordinating national and subnational level efforts on STI for the SDGs?



*The inno4sd network brings together networks dedicated to innovation for sustainable development with the aim of reducing fragmentation and supporting collaboration, whilst engaging policy-makers, research & development, and businesses to achieve the sustainable development goals.*



## PROJECT TEAM

**TNO** innovation  
for life

**KING'S**  
College  
LONDON



ICLEI

**Greenovate!**  
EUROPE



**UCL**

**ZEW**  
Zentrum für Europäische  
Wirtschaftsforschung GmbH  
Centre for European  
Economic Research



**KnowlEdge**

**tecnalia**

UNITED NATIONS  
UNIVERSITY

**UNU-MERIT**

UNIVERSITÄT  
STELLENBOSCH  
UNIVERSITY

13 partners – leading organisations in innovation for sustainable development

- Research and Technology Organisations (TNO, TECNALIA, SP/RISE)
- Universities (UCL, KCL, UNIFE, US)
- Research Centres (ZEW, UNU-MERIT)
- Specialised firms (GE!, KE)
- Network organisations (ICLEI)





## NETWORK OF NETWORKS\*



(\* Infographic refers to entities/networks having expressed their interest to collaborate as of May 2017. Nether TNO nor inno4sd.net are by any means implying having obtained a formal endorsement or having acquired a trademark agreement for the use of the logos.

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## SERVICES of inno4sd.net®

### Connectivity

- Symposia and network events
- Profile.net
- Global interactive maps (database)
- Communities

### Knowledge

- Cases, tools, news
- Inno4sd academy
- Webinars, MOOC
- Valorization

### Guidance

- Policy reviews and briefs
- Policy roadmap
- Manuals and guidelines
- Monitoring

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## SUSTAINABILITY TRANSITION AND INNOVATION REVIEWS FRAMEWORK (STIR)

### A CONCEPTUAL FRAMEWORK FOR A COLLECTIVE EVALUATIVE REFLECTION ON PUBLIC POLICY FRAMEWORKS FOR SUSTAINABILITY TRANSITIONS.

#### THREE MAIN PURPOSES


- **Policy evaluation and policy research** – STIR is a systemic policy evaluation tool based on a mix of self-assessment and expert appraisal focused on individual countries.
- **Public debate and policy learning** – STIR is to contribute to a policy learning process providing a comprehensive policy appraisal framework for national debates and policy reflection on concrete steps to improve current policies.
- **International collaboration** – STIR aims to stimulate international debate and collaboration on the current and future role of public policy in enabling systemic changes in economies and societies towards sustainability.

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## TESTING NEW POLICY APPRAISAL CRITERIA

- **Agenda centrality** - the relative position of issues related to innovation for sustainability in the policy debate and agenda.
- **Policy relevance** - the assessment of the extent to which policy vision and objectives are adequate for sustainability challenges.
- **Directionality** - the extent to which policy mix is oriented towards sustainability.
- **Environmental policy stringency** – the extent to which policy protects environment by installing and enforcing regulations that protect the environment from overexploitation.
- **Alignment** - the extent to which public policy facilities alignment of change agents for the vision of sustainability transition.
- **Legitimation** - the extent to which policy choices on direction of transition pathways have democratic and social mandate.
- **Experimentation and demonstration** – the extent to which policy creates strategic arenas for experimentation and demonstration of transformative innovation.
- **Specialisation** - the extent to which policy encourages entrepreneurial and industrial specialisation in the areas taking into account their sustainability impact.
- **Policy coherence** - the extent to which policy mix is consistent, coherent and comprehensive.
- **Distributional impacts** - the extent to which policy redistributes costs and benefits of transition.
- **Effectiveness** - the extent to which policy is effective in achieving intended transformative impact.
- **Policy evaluation and learning** - the extent to which policy is based on evidence and supported by learning environment.

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## PILOT COUNTRY REPORTS


- **Turkey, UK, South Africa, Sweden, China**

### Broad Participation

The workshop is attended by Turkey's key experts from parliamentary committees, ministries, agencies, international organizations, chambers of industry, universities, civil society, media and independent experts.

**STIR workshop in Turkey  
(25 May 2017)**



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## STI POLICY ROADMAPS FOR SUSTAINABLE DEVELOPMENT

### **Policy outlook on STI policy roadmaps for sustainable development (May 2018)**

- A critical review of selected national and international policy and sectoral roadmaps with a focus on STI areas relevant for sustainability transitions.
- Analytical comparison of objectives, design features and the embeddedness of roadmapping in strategic and policy processes.

### **Policy guidelines for STI policy roadmaps for the SDGs (September 2018)**

- Guidelines and lessons learnt on design, process and governance of STI policy roadmaps focused on the SDGs and sustainable development challenges.

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## AREAS AND QUESTIONS FOR REVIEWING STI ROADMAPS

Criterion	Definition	Review questions
<b>Relevance</b>	The extent to which the vision and objectives of roadmaps are appropriate for sustainability challenges, and the SDGs.	What is the main purpose and scope of roadmaps, and how they relate to SDGs? What is the wider context in which roadmaps emerge?
<b>Roadmap design</b>	The level of sophistication of intervention logic and design of roadmaps in the context of sustainability challenges.	What is architecture of roadmaps, notably how they introduce visions, pathways (targets and milestones, layers etc,) and action plans?
<b>Innovation</b>	The level of ambition and aspiration of innovation activities promoted by roadmaps, including recognition of the role of experimentation and demonstration of system innovation.	What types of innovation activity are roadmaps promoting to enable sustainability transition? What is the level of ambition of innovation?
<b>Strategic specialisation</b>	The extent to which roadmaps encourage innovation specialisation in the most relevant areas for sustainability.	Are roadmaps based on a strategic prioritisation process including existing and emerging areas of specialisation? Are roadmaps aiming at changing specialisation patterns to more respond to sustainability challenges?

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## AREAS AND QUESTIONS FOR REVIEWING STI ROADMAPS (2)

Criterion	Definition	Review questions
<b>Alignment &amp; credibility</b>	The extent to which roadmaps mobilise actors to align their strategies with the shared vision, and to engage in transformative innovation.	How are stakeholders consulted and engaged at different phases of the process?
<b>Actionability</b>	The extent to which roadmaps are based on policy implementation capacity, and absorptive and coordination capacities of actors in the innovation system.	What are the mechanisms by which roadmaps are implemented?
<b>Coherence</b>	The extent to which roadmaps are coordinated and coherent with relevant policy mixes, and with SDGs.	How are roadmaps embedded into wider STI policy mixes?
<b>Learning and adaptability</b>	The extent to which roadmaps support on-going learning and include mechanisms allowing for adaptation of its elements based on new evidence.	How is the implementation of roadmaps monitored and evaluated?

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## RELEVANCE: 'OBJECTIVE MIX' OF POLICY ROADMAPS

- **Vision building**
  - Building a long-term vision of desired futures.
- **Exploration of innovation and technology pathways**
  - Exploration and assessments of alternative technology, innovation or policy pathways to achieve a vision, often expressed as scenarios.
- **Technology advocacy**
  - Technology advocacy supporting technology areas or specific technologies, often including research and innovation agendas.
- **Stakeholder alignment**
  - Building or strengthening stakeholder alignment to support the vision and technology, innovation or policy pathways.
- **Support for policy design and planning**
  - Support for design and planning of policy by elaborating technology and innovation pathways, often using milestones and quantitative targets.
- **Support for policy implementation**
  - Support for implementation of ongoing policy programmes.



## POLICY ROADMAP DESIGN: BLENDS OF VISIONS, PATHWAYS AND PLANS

- **Vision**
  - Narrative vision expressed as statements or images.
  - Formal targets, often quantitative.
- **Innovation pathways**
  - Targets and milestones to track progress towards the vision.
  - A structured time-bound timeline (short-, medium- and long-term).
  - Theory of change (scenarios describing plausible mechanisms of change).
  - Analytical layers (co-evolving dimensions of change).
- **Action plans**
  - A set of short- and medium-term actions that need to be taken in order to achieve the make progress on identified pathways towards the vision.
- **Baseline analysis**
  - Evidence-based analysis of the current state of development which underpins vision and innovation pathways.
  - Combinations of science-driven approaches (e.g. use of models) and participatory approaches (e.g. stakeholder consultations)





## WHAT APPROACHES ARE EFFECTIVE IN ALIGNING & COORDINATING NATIONAL AND SUBNATIONAL EFFORTS ON STI FOR THE SDGS?

- **Towards vertical policy coherence: Shared direction of transformation towards sustainable development and the SDGs embedded across policy mix on all relevant governance levels.**
  - What is the 'right' level for STI policy intervention?
  - Policy coherence as a co-evolving learning process with a shared direction
  - Coherence should allow for variety of innovation pathways implemented on many governance levels
  - Formal (and informal!) coordination mechanisms and learning environments across government levels (e.g. multi-stakeholder communities of practice)
  - Investments in institutional capacity on the subnational level
  - Strategic intelligence tools to include regional and local level
  - Shared (or local) implementation of STI instruments
  - Experimentation and piloting national schemes in selected localities (key for learning and preparing ground for mainstreaming of policies).



## WHAT ARE KNOWLEDGE GAPS AND CHALLENGES NEED TO BE ADDRESSED IN HARNESSING STI TO ADDRESS NEEDS OF MOST VULNERABLE AND LEAVE NO ONE BEHIND?


- **Knowledge gaps**
  - Distributional impacts of policy *along* innovation pathways considering distribution of socio-economic and environmental impacts among different social groups, regions and *over* time.
  - Context-sensitive technology risk assessments of implementation of emerging technologies recognising principle of Responsible Research and Innovation (RRI)
  - Assessing unintended impacts of STI policy mixes on the most vulnerable (e.g. counterfactual approaches to assessing indirect impacts of fossil fuel subsidies on vulnerable groups)
  - Using new types and sources of data (e.g. big data) and research methods to understand and address issues affecting most vulnerable groups, including children!





## WHAT ARE KNOWLEDGE GAPS AND CHALLENGES NEED TO BE ADDRESSED IN HARNESSING STI TO ADDRESS NEEDS OF MOST VULNERABLE AND LEAVE NO ONE BEHIND? (2)

- **Challenges**
  - How to adapt *processes and governance* of STI policy and use new methods of policy design and implementation to ensure inclusion of vulnerable groups (e.g. policy labs, pilots projects)?
  - How to dealing with uncertainty about impacts on vulnerable groups in policy design (precautionary principle)?
  - How to consider and balance needs of the most vulnerable today and the most vulnerable *in the future*, especially if the former are negatively affected by the policy choices?
  - How to account for impacts on groups not captured by most monitoring and evaluation systems (e.g. informal sector, homeless)?
  - How to better include non-technological forms of innovation into STI policy (e.g. grass-roots innovation, frugal innovation)?
  - How to best learn about approaches to phasing out declining and harmful sectors? (new approaches to old problems?)

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## TOWARDS REGIONAL INNOVATION POLICY FOR THE SDGS?

- **Regions are an appropriate level to address many science, technology and innovation and social challenges**
  - Geography matters: knowledge and innovation are “sticky” and often developed in a close geographical proximity. Social capital and trust are often built locally.
  - Regions (subnational level) are an appropriate level for designing innovation strategies and implementing innovation policy instruments, especially in support of SMEs, science-industry relations, and clusters.
  - Regions also appropriate level to engage with local social issues, notably dealing with informal sector and social inclusion considering the most vulnerable groups.

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## TOWARDS REGIONAL INNOVATION POLICY FOR THE SDGS? (2)

- **What could it mean for innovation policy for the SDGs?**
  - Place-based STI policy, including regional, local and atypical inter-regional or macro-regional strategies and initiatives.
  - Regional innovation strategies can identify established and emerging innovation specialisation areas where regions can have most impact for the SDGs
  - Regions can become ‘laboratories’ to experiment with system innovation and innovative forms of transition governance based on new forms of collaboration.
  - See lessons learnt from decades of experimentation (since 1994) in the European Union (RIS-RITTS, RIS-RITTS+, RPIA and Smart Specialisation strategies)

### CONTACT

For more information on the Inno4SD network please visit  
<http://www.inno4sd.net/>