International Trends in Technology Assessment

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Conceptual clarifications

- **Technology Assessment (TA)** *is a* scientific, interactive and communicative process which aims to contribute to the formation of public and political opinion on societal aspects of science and technology." It is a form of policy research that examines short- and long-term consequences (for example, societal, economic, ethical, legal) of the application of technology". **Impacts of TA are expected to be threefold: raising knowledge and forming opinion among policy makers and initializing actions by them.**

- **Technology forecasting** can be seen as attempting to predict the future characteristics of useful technological machines, procedures or techniques. **Its aim is mainly to inform decision makers at the level of companies and other organizations,** thus, not concentrating on the broader societal effects of technological advancements and innovation.

- **Technology Foresight** combines creative thinking, expert views and alternative scenarios to make a contribution to strategic planning. It looks into the longer-term future of science technology and innovation (STI) in order to make better-informed policy decisions. **Thus, Foresight is a long-term strategic, not an assessment tool.**

- **Technology Needs Assessment (TNA)** originates in the process UNFCCC in 2001. TNAs are a set of country-driven activities that **identify the climate change mitigation and adaptation technology priorities of partner countries, and work towards producing a pipeline of investment projects**.

- **Responsible research and innovation (RRI)** is an approach that anticipates and assesses potential implications and societal expectations with regard to research and innovation, **with the aim to foster the design of inclusive and sustainable research and innovation.**
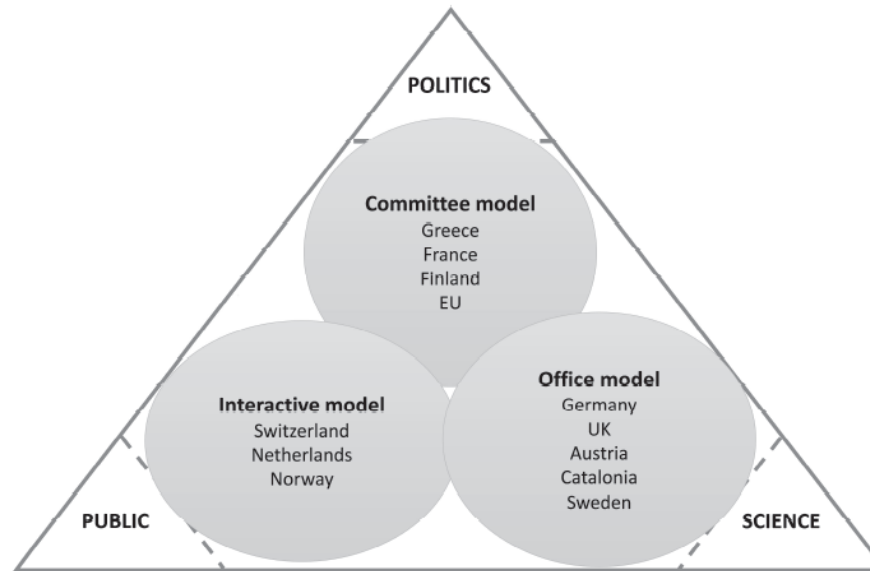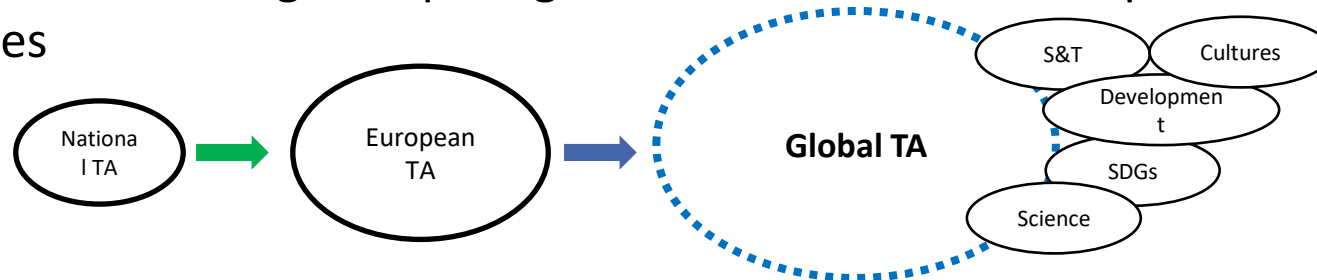
Varieties of European TA

Figure 1: The intermediate role of parliamentary TA in Europe (adopted from Hennen & Ladikas 2009)

European TA is a microcosm of global TA → an amalgamation of countries, cultures, norms, values, political systems achieving certain TA communality by large efforts under the EU

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TA: from Europe to the World

- Global and simultaneous effects of S&T and interconnectedness across countries and cultures

- "Real world" challenges requiring common orientation and problem-solving capacities
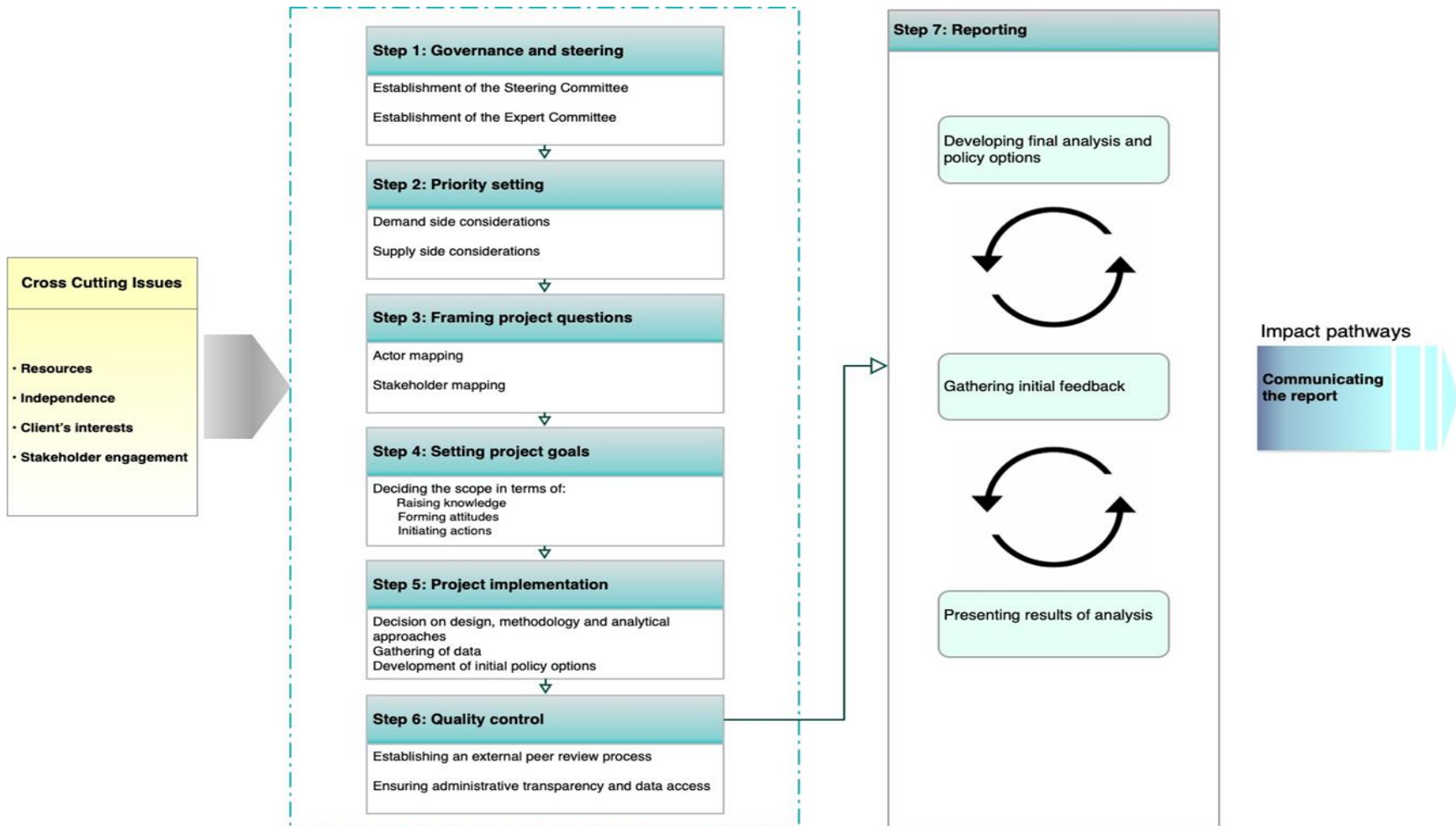

- Going beyond the national level while reflecting on possibilities and limitations
- Need for transnational, networked, flexible approaches
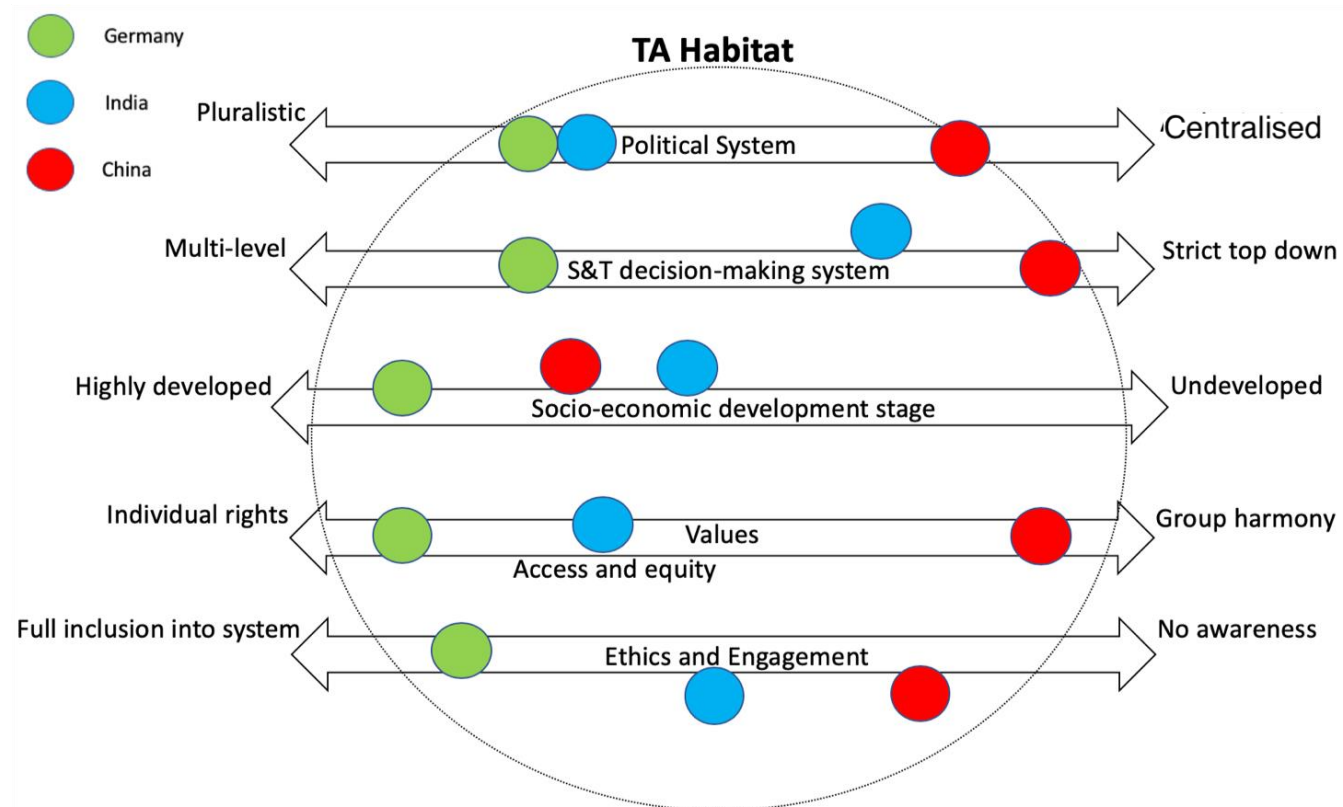- Need for global concepts, methodologies, structures

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Roles of global TA:

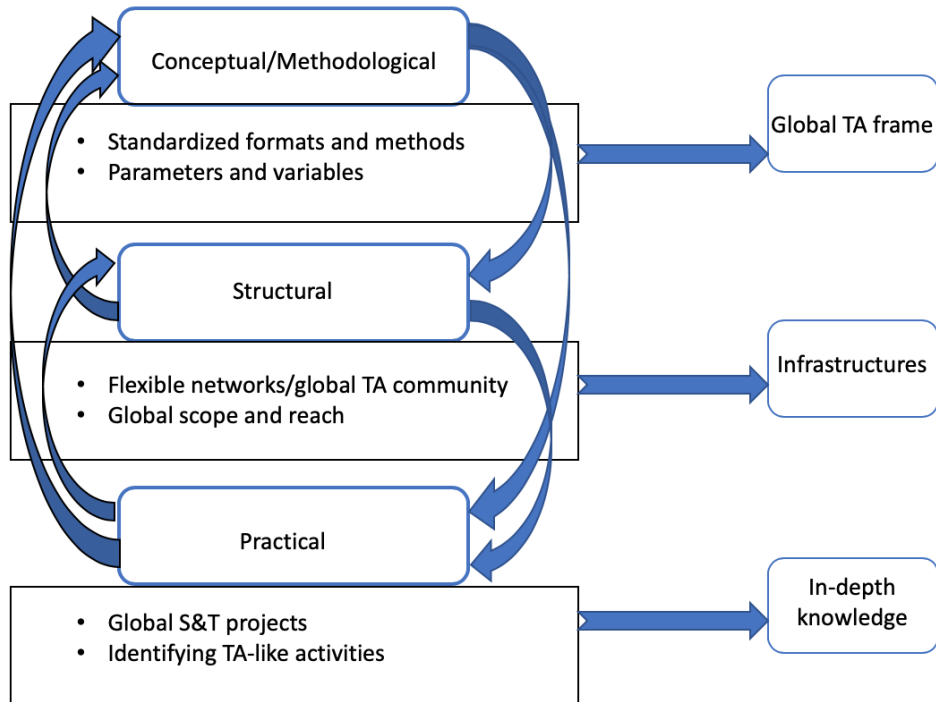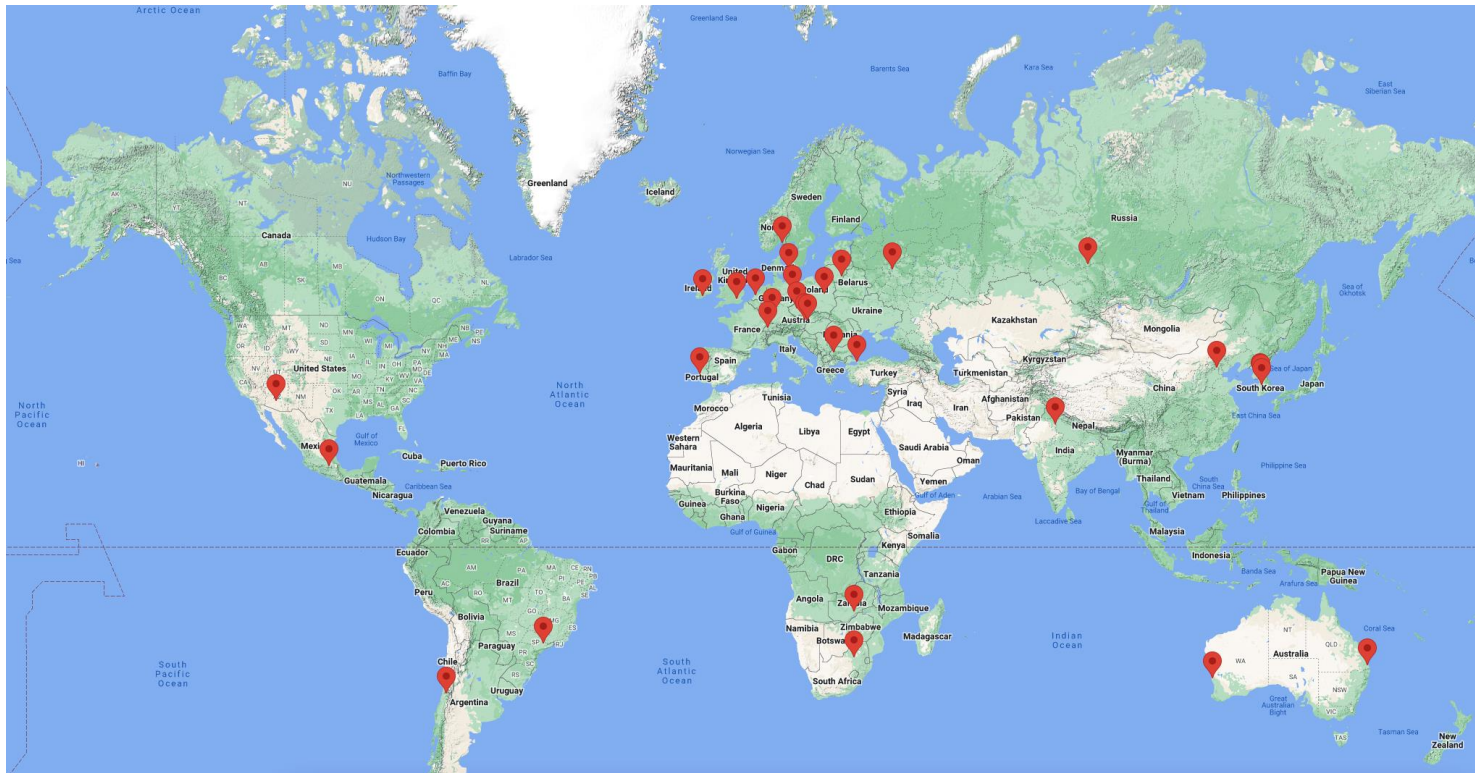| ISSUE DIMENSION	IMPACT DIMENSION		
	I. RAISING KNOWLEDGE	II. FORMING ATTITUDES /OPINIONS	III. INITIALISING ACTIONS
TECH-NOLOGICAL SCIENTIFIC ASPECTS	**SCIENTIFIC ASSESSMENT** ▪ Technical options assessed & made visible ▪ Comprehensive overview on consequences given	**AGENDA SETTING** ▪ Setting the agenda in the political debate ▪ Stimulating public debate ▪ Introducing visions or scenarios	**REFRAMING OF DEBATE** ▪ New action plan or initiative to further scrutinise the problem decided ▪ New orientation in policies established
SOCIETAL ASPECTS	**SOCIAL MAPPING** ▪ Structure of conflicts made transparent	**MEDIATION** ▪ Self-reflecting among actors ▪ Blockade running ▪ Bridge building	**NEW DECISION MAKING PROCESSES** ▪ New ways of governance introduced ▪ Initiative to intensify public debate taken
POLICY ASPECTS	**POLICY ANALYSIS** ▪ Policy objectives explored ▪ Existing policies assessed	**RE-STRUCTURING THE POLICY DEBATE** ▪ Comprehensiveness in policies increased ▪ Policies evaluated through debate ▪ Democratic legitimisation perceived	**DECISION TAKEN** ▪ Policy alternatives filtered ▪ Innovations implemented ▪ New legislation is passed

TA at Global Level – Step by Step

Parameters of Global TA

Next Steps for Global TA

- Create projects for developing **standardized formats and methods** of TA and develop **parameters** and their variables for a global TA framework (Global TA network)

- Enable structures for networked, flexible TA activities on a global level (UNCTAD)

- Conduct global TA projects on **specific technologies** with worldwide effects, to enhance in-depth knowledge on **specific TA(-like) activities** (EU/Bilateral Agencies)

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