Towards a Global Technology Assessment

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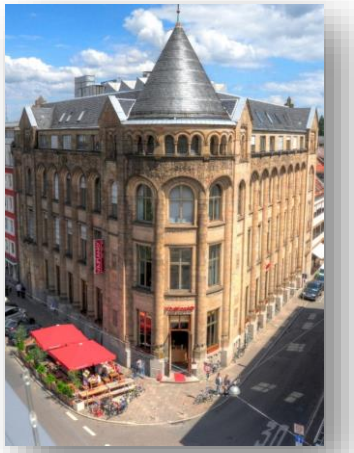
ITAS



- **Founded** in **1995,** a research facility of the Karlsruhe Institute of Technology (KIT)

- The **largest, oldest scientific institution in Germany dealing with TA & systems analysis** in theory and practice.
  - Ca. 120 scientific staff members
  - Mix of natural scientists/engineers, social sciences/arts
  - Ca. 50 currently run projects

- Part of the **research programme of the Helmholtz Association (HGF) "Technology, Innovation and Society"**

- Research in **3rd party funded** projects and contract work.
  Important external clients and funding partners are:
  - German/ European **parliaments** & **European Commission**
  - Federal and state **ministries** & authorities
  - Companies & **industry** associations

- Also involved in **university teaching** and scientific (further) education

ITAS

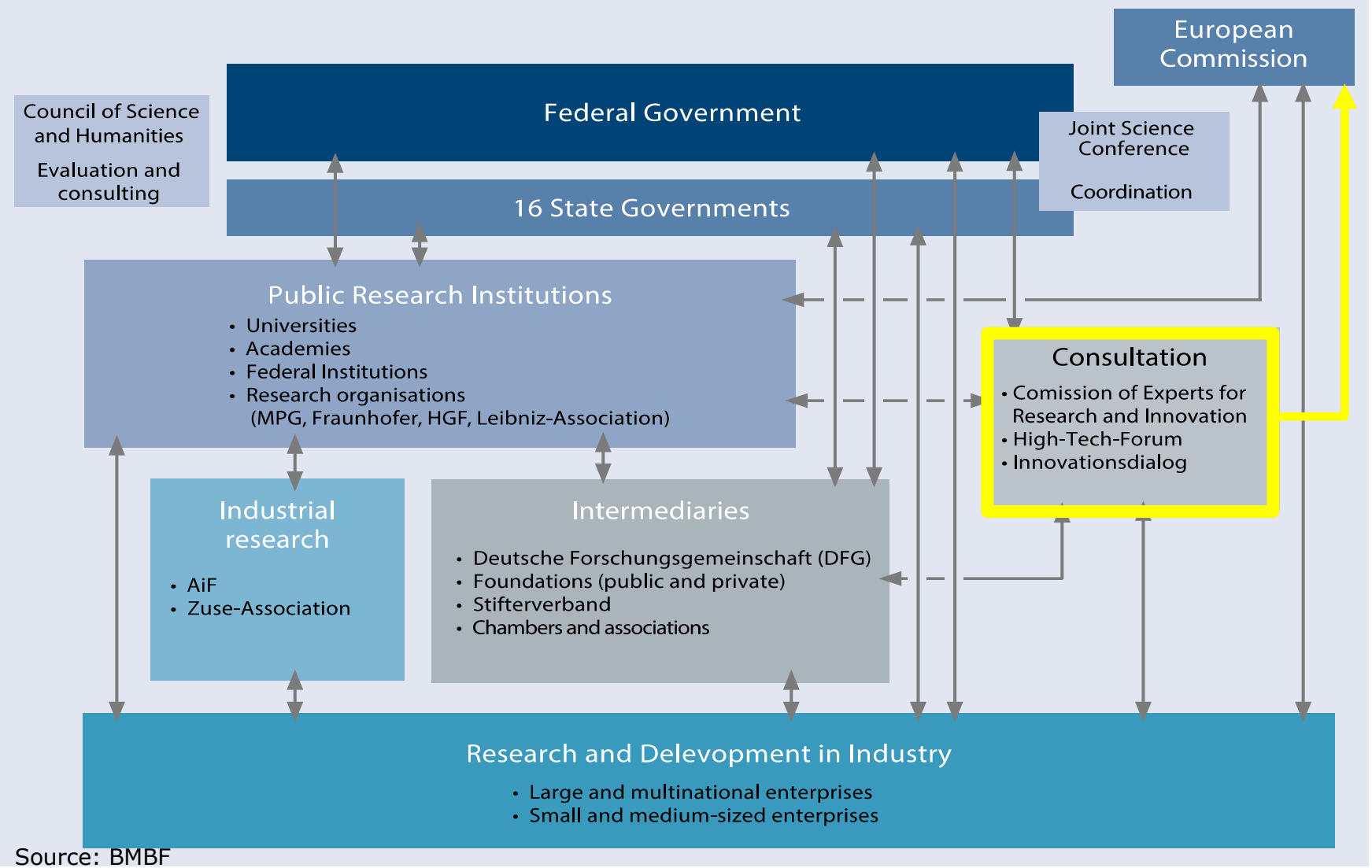
- **ITAS is divided into 4 research areas**
  - Sustainability & Environment
  - Innovation Processes and Impacts of Technology
  - Knowledge Society and Knowledge Policy
  - Energy – Resources, Technologies, Systems

- Operates the
  Office of TA at the German Bundestag (founded in 1990)

- Provides **research-based advice for ministries, authorities and parliaments** with an emphasis on parliamentary policy advice

- In cooperation with the **European Technology Assessment Group (ETAG)** **ITAS** also **coordinates a European network to advise STOA** (Scientific Technological Options Assessment), the technology assessment institution of the European Parliament since 2005.

German Research & Innovation System



Source: BMBF

Technology Assessment (TA) Definition

"TA is class of policy studies which systematically examine the effects on society that may occur when a technology is introduced, extended or modified…"

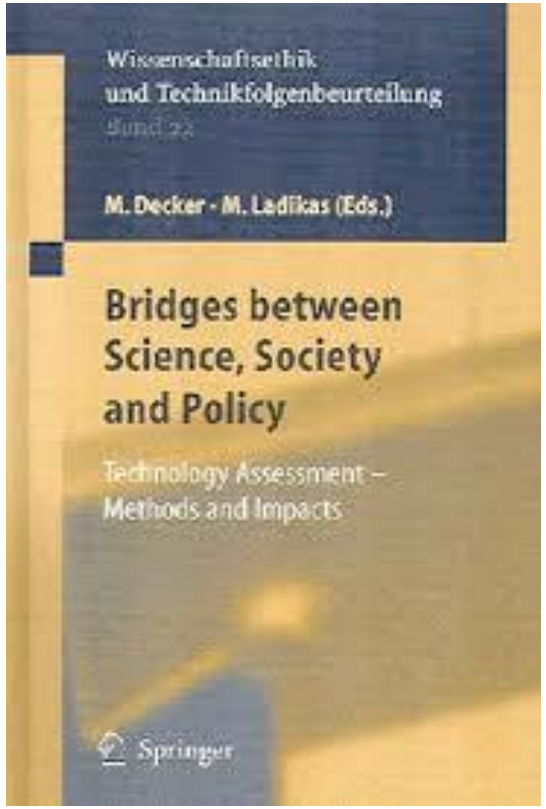
J.F. Coates, 1980

"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."

TAMI, 2003

Reference Book

- Summary of project output
- Including main TA institutes in Europe
- Standardisation of
  TA methodologies & impact assessment



TA Functions:

- Policy Advice
- Public Debate
- Engineering Process

Methodological Models

Classical TA

- Expert orientated / focus on risks
- Attempt to 'rationalise' debate (threat diffusion)
- One-way relationship between TA and public
- Examples: TAB, ITAS

Participatory TA

- Non-expert / public inclusion
- Focus also on 'value'
- Attempt to create 'coherent' debate
- Variety of experimental models
- Examples: DBT, RATHENAU

Methodological "Tool Box"

Scientific methods:

- Expert discussion
- Delphi method
- Modelling / simulation

Interactive methods:

- Consensus conference
- Citizens' jury
- Scenario workshop

Communication:

- Newsletter
- Articles in press
- Video presentation

Roles of 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

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Varieties of European TA

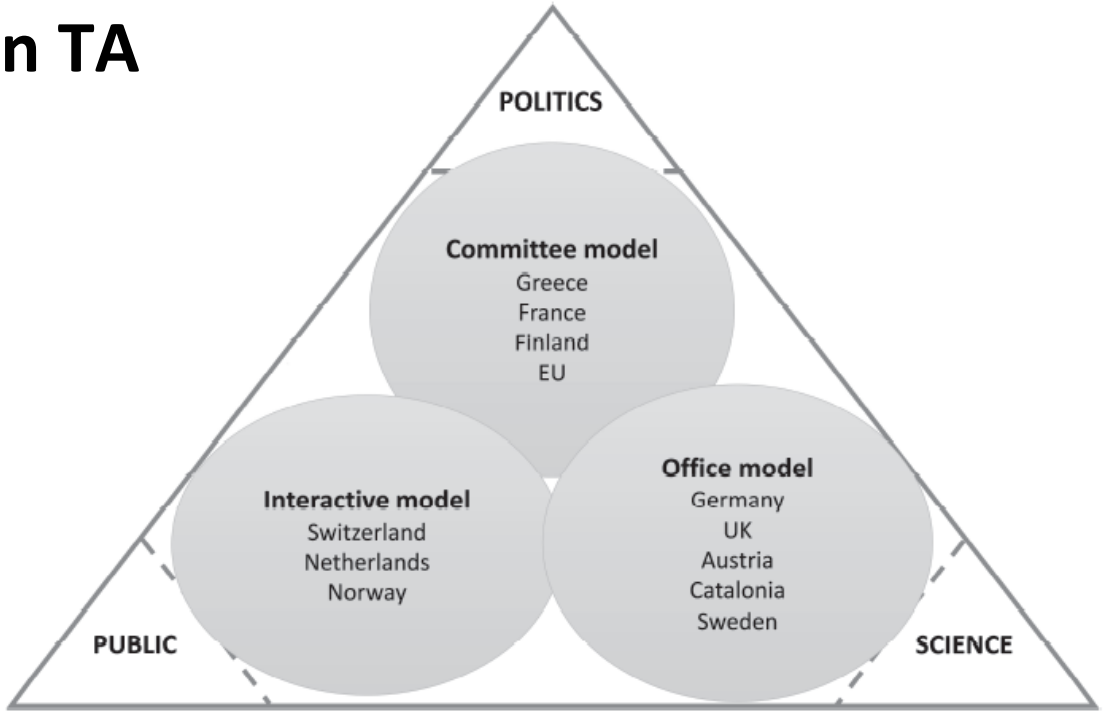


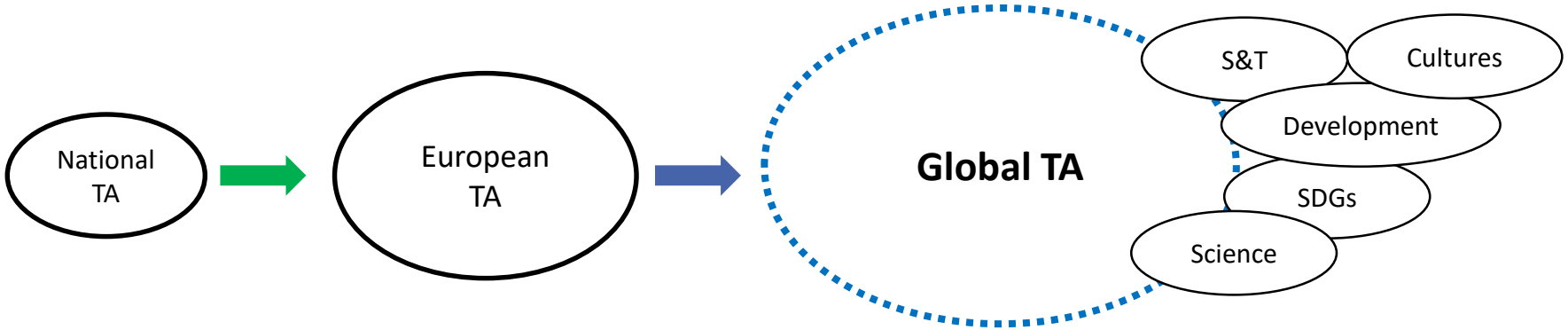
Figure 1: The intermediate role of parliamentary TA in Europe (adopted from Hennen & Ladikas 2009)

- "European TA": microcosms of global TA → amalgamation of countries, cultures, norms, values, political systems achieving certain TA communality by large efforts under the EU

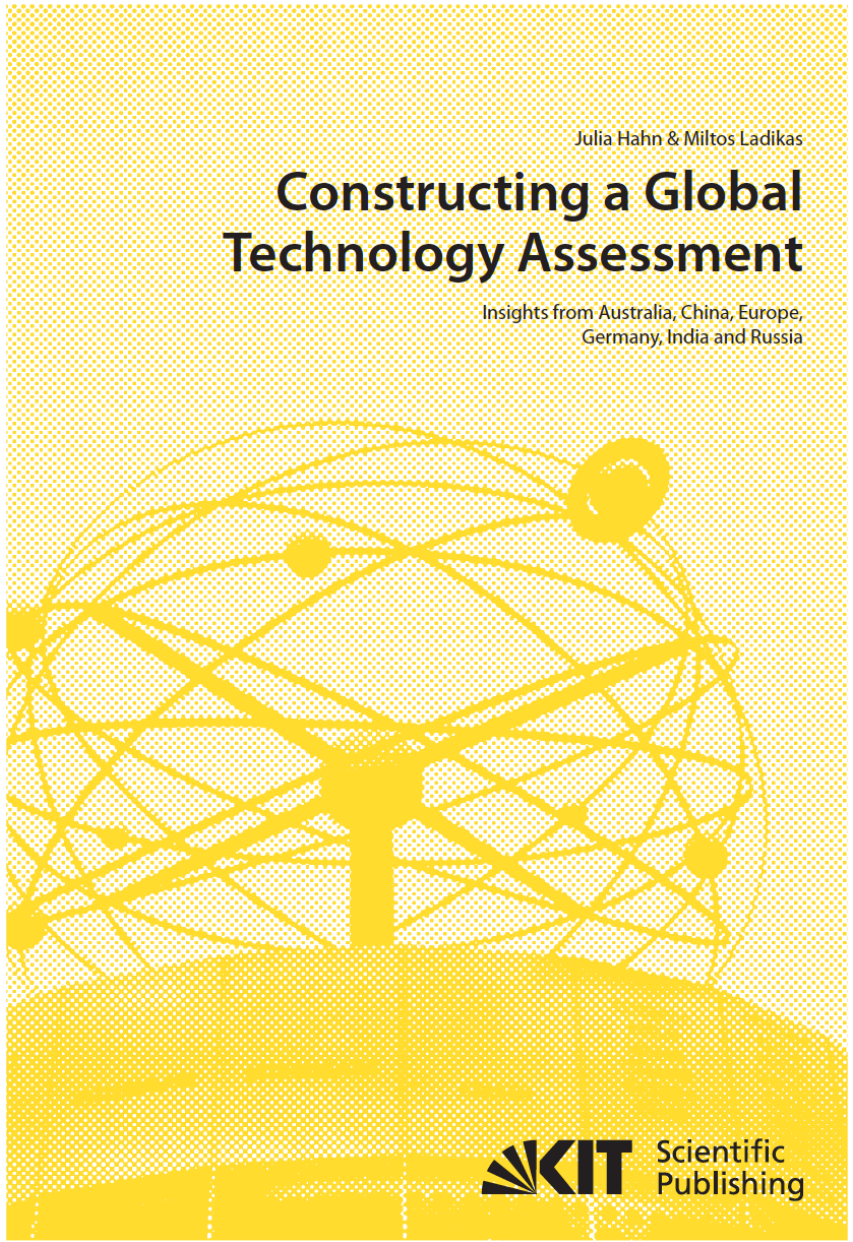
- European Parliamentary TA (EPTA): network of partners who advise parliaments on the possible social, economic and environmental impact of new sciences and technologies

Technology Assessment - Going Global

- Global, world-wide, simultaneous effects of S&T and interconnectedness across countries/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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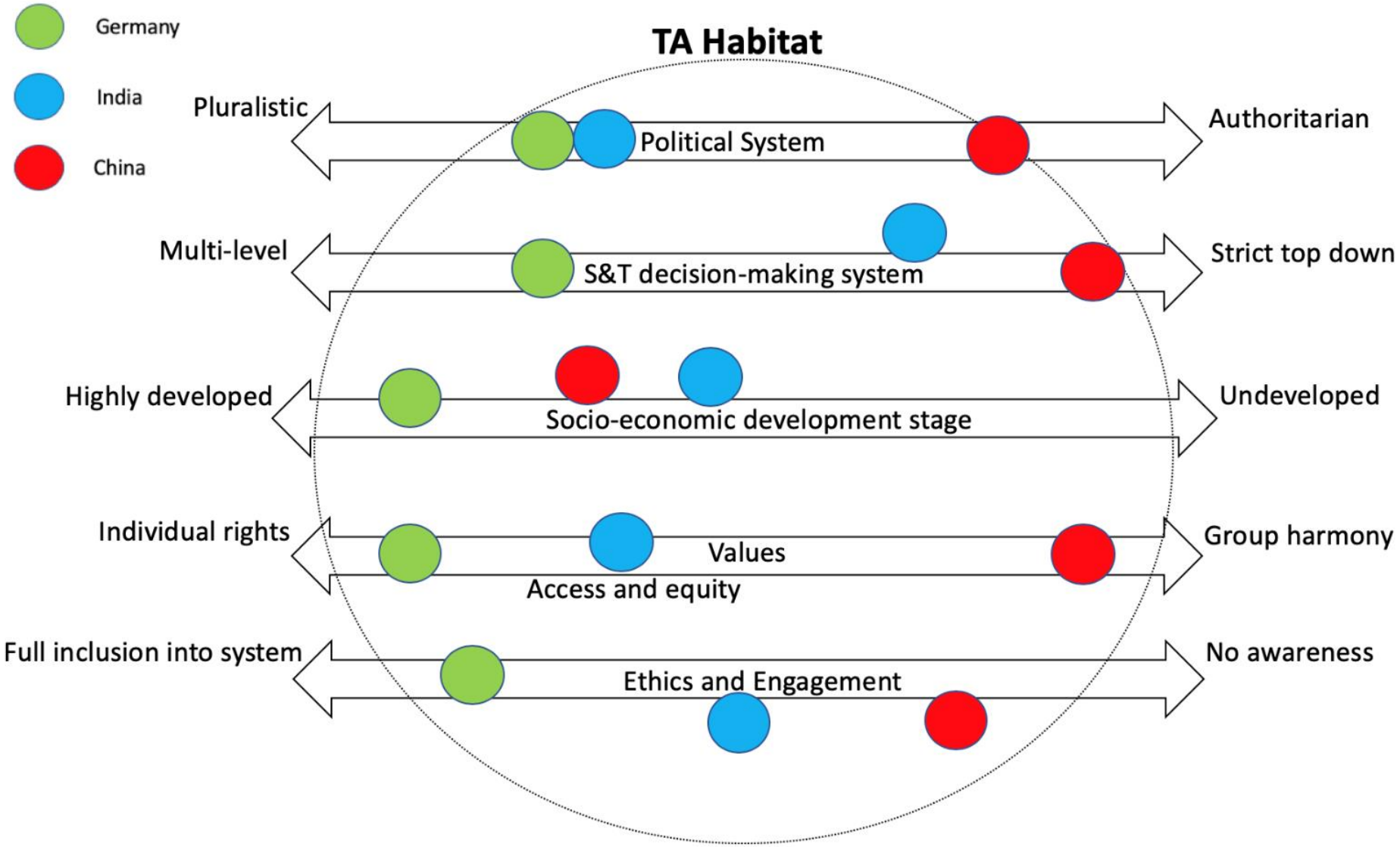
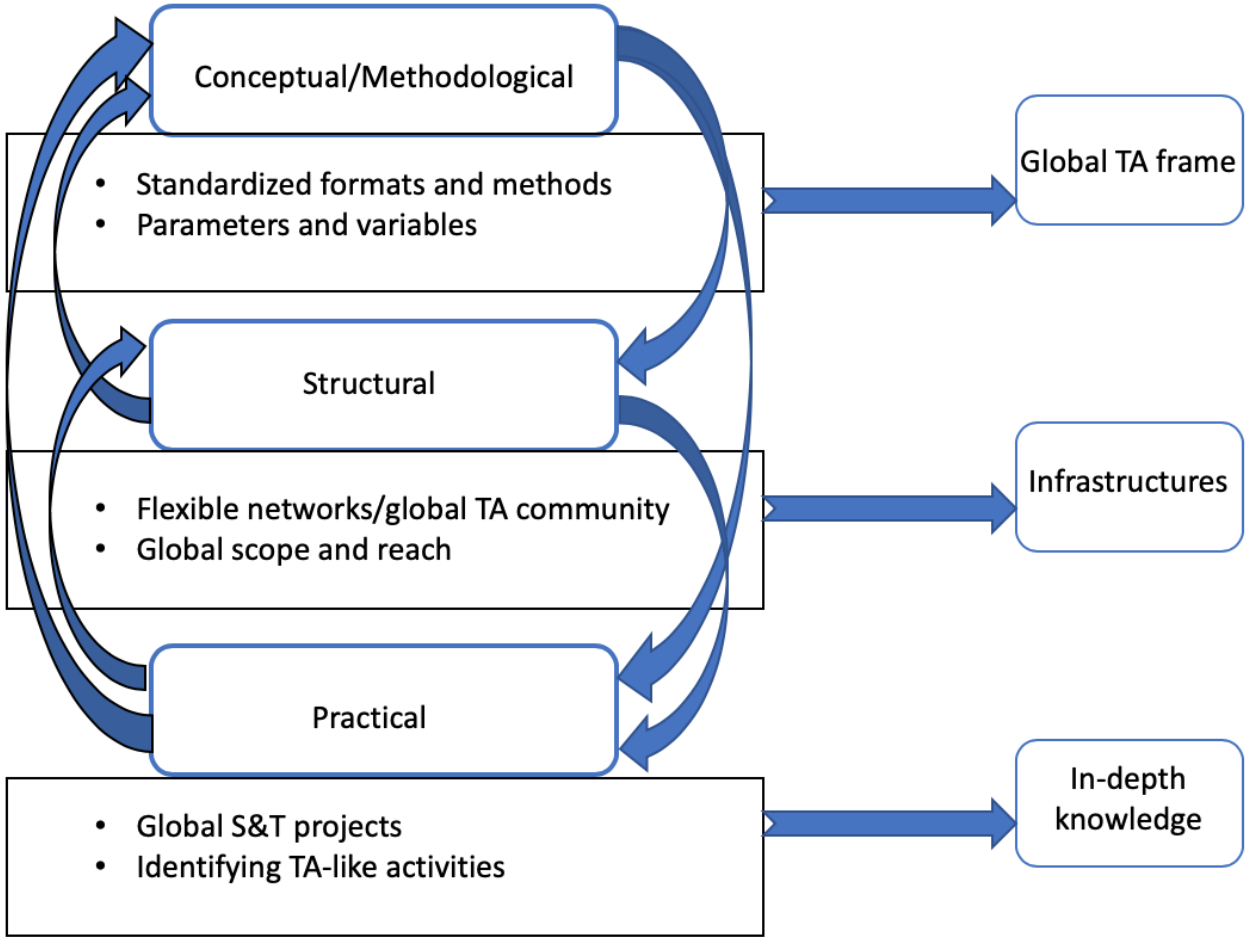
Parameters of Global TA



Ways Forward for Global TA



- Create projects for developing **standardized formats and methods** of TA (methodological)
- Develop **parameters** and their variables for a global TA framework (conceptual)

- Enable structures for networked, flexible TA activities on a global level (structural): **UNCSTD**

- Conduct global TA projects on **specific technologies** with worldwide effects (practical)
- Enhance in-depth knowledge on **specific TA(-like) activities** in other countries (practical)

GTA Network