

TRANSFORMATIVE (INNOVATION) POLICY

Towards a ,constructive ,research agenda that responds to policy needs

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A CHANGING CONTEXT FOR INNOVATION POLICY

- New forms and types of research, innovation and innovation dynamics
 - Science 2.0, citizen science, open science, etc.
 - Open innovation, co-design, co-creation, etc.
 - New emerging S&T developments
 - Platform-based acceleration mechanisms and system dynamics
- New requirements and higher expectations
 - GSCs and their concretisation as missions, wicked problems, etc.
 - Handling uncertainties – potentials and risks – associated with new technology
- Two different types of transformative change as the new policy challenge
 - Societal challenge-driven transitions induced from the demand side
 - „Disruptive“ transformations induced from the supply side

TRANSFORMATIVE CHANGE AS THE NEW CHALLENGE FOR INNOVATION POLICY

- „Structural“ innovation policy continues to matter, but ...
 - Addressing market and system failure ...
 - ... in order to enhance the fundamental innovation system functions/key activities
- Political attention regarding state intervention in innovation is shifting
 - Emphasis on directionality of innovation
 - Widening the scope of innovations considered
 - Strengthening the ability to navigate the new problem-solution space and find new collective pathways
 - Moving beyond the traditional realm of innovation policy
- The change in governance is already happening at programmatic level („normative/strategic turn“), but how to put it into practice?
 - Need for change along the entire policy cycle (how?) and throughout governance networks (who is involved?)
 - „Constructive“ research agenda to support governance along the policy cycle

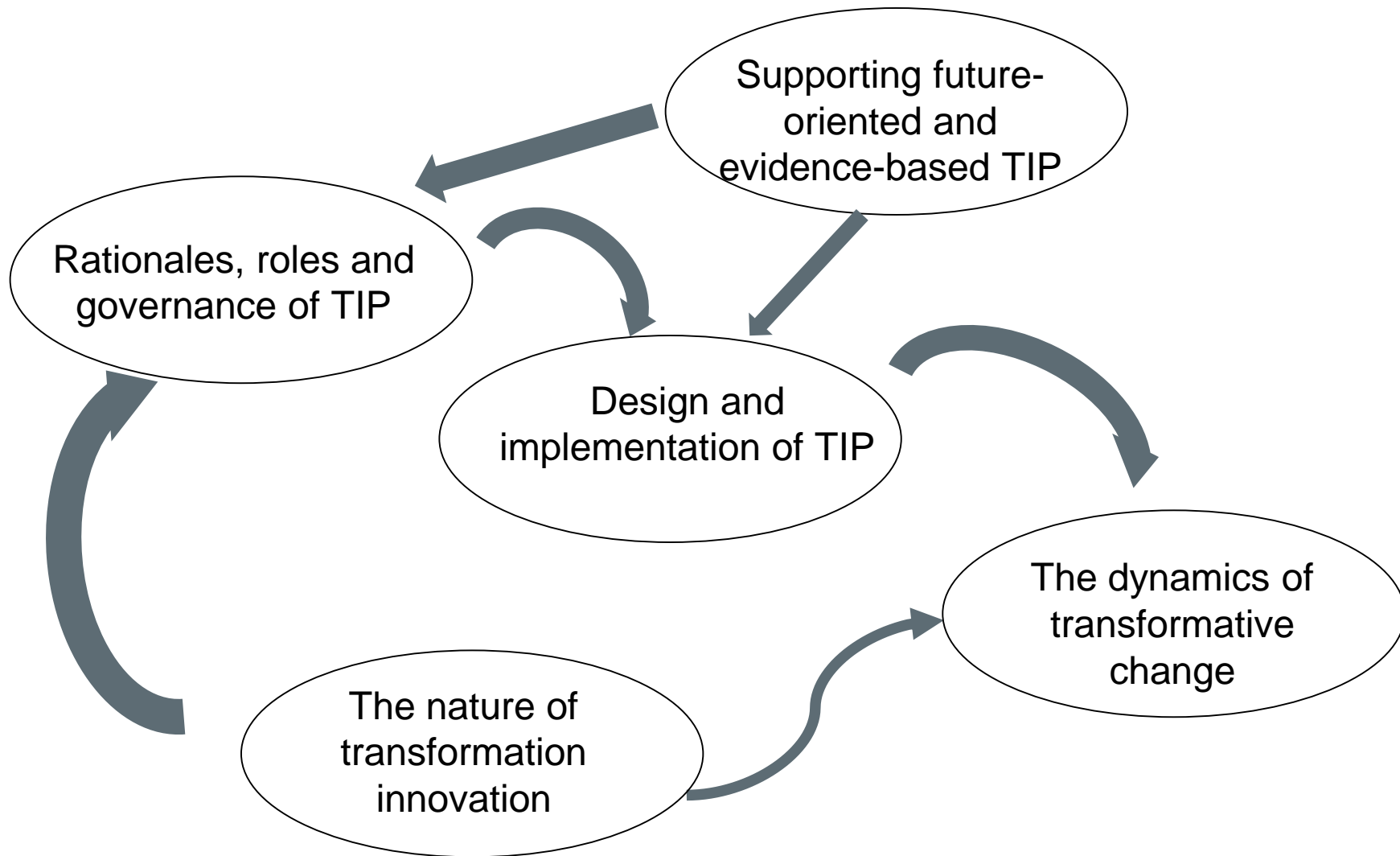
TRANSFORMATIVE INNOVATION POLICY

- A tentative definition of Transformative Innovation Policy:

*„Innovation policies that direct **existing or emerging** systems towards desirable transformation to overcome and mitigate societal challenges **and** turn opportunities into societal benefits.“*

(adapted from Matt 2018)

WHAT WE NEED TO UNDERSTAND BETTER...



FIVE MAIN BUILDING BLOCKS OF AN AGENDA

- The nature of transformative innovation: towards a broader and more differentiated perspective
- The dynamics of transformative change: from innovation to generalisation dynamics
- Deeper insights into the rationales, roles and (reflexive) governance of TIP
- The design and implementation of TIP
- Supporting future-oriented and evidence-based TIP

THE NATURE OF TRANSFORMATIVE INNOVATION: TOWARDS A BROADER AND MORE DIFFERENTIATED PERSPECTIVE

- Transformations of various kinds
 - Disruptive transformations
 - System transitions
- The object in focus
 - Innovation as driven from two sides
 - Research-inspired innovation
 - Practice-inspired (social) innovation
 - Innovation as driven from two levels
 - Local experimentation (social practices as well as research)
 - Institutional and political change
 - Socio-technical system reconfiguration / system building
- Beyond innovation
 - Behavioural, organisational and institutional change in production-consumption systems
- Contextualisation and embedding
 - In a global context: trade, shaping international agendas
 - In specific local contexts: socio-technical alignment in specific local contexts

THE DYNAMICS OF TRANSFORMATIVE CHANGE: FROM INNOVATION TO GENERALISATION DYNAMICS

- Pattern of change
 - Differentiation I: disruptions and transitions
 - Differentiation II: problem-solution configurations
 - Differentiation III: smooth vs. punctuated change processes
- The interaction between niches/experiments and social/institutional change
 - Multi-level vs. systems vs. theories of social change
 - Generalisation and institutionalisation: scaling, diffusion, replication
- What matters for generalisation?
 - Power and resources
 - Capabilities and learning
 - Joint orientations (values, visions, ...)
 - Overcoming routines for behavioural change
 - Infrastructures and other collective resources
 - Learning and adaptability
 - Intermediaries and other change agents
 - Reconfiguration of actor constellations / networks

THE DYNAMICS OF TRANSFORMATIVE CHANGE: FROM INNOVATION TO GENERALISATION DYNAMICS (2)

- Triggering transformative dynamics
 - Starting from local experimentation
 - Learning with innovation in niches/labs
 - Internalisation of new rules / RRI
 - Context specificity
 - Top-down institutional change in framework conditions
 - Emission trading, standard-setting
 - Incentives and nudging
 - Stabilisation
- Reinforcing complex dynamics and attacking prevailing institutions
 - Economies of scale and scope
 - Different pathways of transformation
 - Creating spaces for learning, exploring, experimenting and exploiting simultaneously (e.g. ambidexterity in cities)
 - Visions as joint orientation
 - New types of agencies/intermediaries/carrier organisations as agents of change
 - Weaken prevailing regimes: exnovation, mediating conflicts, compensating losers

DEEPER INSIGHTS INTO THE RATIONALES, ROLES AND (REFLEXIVE) GOVERNANCE OF TIP

- Rationales for policy intervention
 - Widening the range of „legitimate“ rationales beyond market and system failure
 - „Technical“ AND „procedural“ rationality
- Normativity and directionality
 - Who decides about priorities, and on what grounds?
 - Long-term strategies in democracies: about parliaments and constitutions
- A differentiated take on possibilities and limitations of TIP
 - Embedding in fundamental governance modes and policy roles
 - Differentiated intervention strategies (timing)
 - Anticipating policy impact pathways

DEEPER INSIGHTS INTO THE RATIONALES, ROLES AND (REFLEXIVE) GOVERNANCE OF TIP (2)

- A double experimentation challenge
 - Experimentation with innovations
 - Experimentation with policy approaches and instruments
- The coupling and coordination challenge
 - Local/regional spaces as „motors“ of change, but equally also at higher levels
 - Policy alignment/coordination: horizontal, multi-level, vertical, temporal
- The limits to governance
 - Multi-actor governance in complex systems

THE DESIGN AND IMPLEMENTATION OF TIP

- Alignment of different levels of governance
 - Strategy, coordination and implementation
- The need for policy mixes
 - Combination of framework conditions – demand side – supply side
 - Horizontal and vertical and multi-level and temporal alignment („synchronisation“)
- New programme designs and initiatives: Experimenting with innovation
 - Enabling a wider diversity of solutions rather than deductive research agendas
 - In-built scaling / selection mechanisms
 - Creating spaces for experimentation and learning with new innovation options
 - Widening the range of stakeholders
- Policy experimenting
 - Regulatory sandboxes, regulatory innovation zones, policy labs, etc.
- A new division of labour: creating transformation agents
 - Capability development for mission-oriented policies: change-agents in ministries vs. autonomous change agencies
 - Re-shaping political responsibilities to cater for transformative policies

SUPPORTING FUTURE-ORIENTED AND EVIDENCE-BASED TIP

- Strategic intelligence
 - New types and categories of data, indicators and models
 - Foresight, monitoring, evaluation, impact assessment, ..
 - „Real-time“ intelligence for supporting TIP
 - Continuous formative monitoring and evaluation functionalities
 - Design foresight
 - Digital STI policy support tools (e.g. simulation models, big data analytics, etc.)
 - Disentangling impact pathways
 - Bridging to other thematic disciplines
- Devising new forms of intervention
 - From funding to regulation, financial instruments and soft forms of interventions
- Process management
 - Dealing with experimentation and risk management in policy-making
 - Policy coordination processes
 - Actor and stakeholder mobilisation

NEXT STEPS

- Refining the five areas of research needs
- Identifying alternative research approaches / strategies
- Developing specific building blocks to help consolidate the knowledge base for TIP in interaction with policy makers