TIP RESOURCE LAB

TOOLS · ACTIONS · LEARNINGS

Component 5: Knowledge infrastructure and communities of practice

Visit website: www.tipresourcelab.net

User guide

Knowledge infrastructure: why?

The question of 'what is the best approach to design policies and make them work' has been asked and answered by many in the history of policy making. One argument that dominates the debates on this question is that policy formulation and design are driven by not only policy experts and policy practitioners, but also by scientists, planners and of course, politicians. Especially, evidence-based policymaking embraces the idea that scientific knowledge is a key source of 'evidence' for the process, output and outcome of a policy. The process of how evidence is gathered and used is technocratic with strong presumptions about who is qualified to provide evidence. Ironically, there is now evidence that policies to address complex socio-economic and environmental challenges require interdisciplinary knowledge from a broader set of actors. Especially, making innovation policies for societal change is an endeavour, that challenges technocracy as it requires diverse kinds and sources of knowledges from both scientific and societal actors. Transformative innovation policy (TIP), as an emerging third frame of innovation against the backdrop of the first two frames, is still in its formative years, requiring the growth and support, to become capable of influencing wider innovation policy practices. In formative years of life, a suitable infrastructure makes all the difference in growth, well-being, personality development and future prosperity. For TIP, a knowledge infrastructure (KI) could serve a similar purpose: it will accelerate the speed and direction of the third frame's emergence as an alternative approach to innovation policy making to meet sustainability and social welfare challenges. The KI will also help people interested in using TIP in their work and establish what it means to "do TIP" as TIP itself evolves over time and across spaces of application.

TIP Knowledge infrastructure – what is it conceptually?

Several questions may be asked in consideration in building a TIP KI is: what is a KI made of? Who is involved in creating it and who will be able to maintain it? What values are guiding knowledge production, validation, translation, circulation?

What principles and tools can be designed and implemented for participation, engagement, collaboration in making the TIP knowledge usable and durable? These questions, asked at several occasions over the years in TIP Consortium, enabled a primary characterisation of the TIP KI. Understanding that the TIP KI is the people, projects as well as knowledges and tools, several design criteria have been debated in discussions about "what a TIP KI should and could look like".

A first design criterion for building the TIP KI is to enable effective connections between theories emerging from scientific disciplines, policy decision-making and grassroots practice aimed at transformative changes. The infrastructure allows space and tolerance for different views of the world, allowing for plurality and even contradictory perspectives. While this is a fundamental principle in interdisciplinary research fields, 'scientific' preferences favouring simplification and quantification to derive quick solutions (often heavily technological and digital) are common. An infrastructure seems necessary to open up the possibilities of what TIP knowledge is, how varied the knowledge can be, while enhancing depth, directionality and how to work with multiple pathways and solutions in order achieve transformations.

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Knowledge alone doesn't provide the infrastructure, it is the people who work with the resources draw insights from them and share the lessons for collective action who anchor the infrastructure. A key challenge is establishing collaborative knowledge practises among these change agents: a culture where people with common vision and ambition for transformative change open up to wider socio-political and professional interactions. In reality, perspectives and opinions differ, personalities clash, language acts as a barrier, hierarchies and implicit power dynamics remain at play. Thus, a second design criteria of TIP KI, next to advancing transdisciplinary knowledge, is orchestrating and creating space for genuine collaboration and knowledge exchange between academics and practitioners of different backgrounds, cultures and levels of experiences. The two criteria are not mutually exclusive, building of a community of practice is integral to advancement of TIP knowledge. Establishing a connection between the two comprises the third design criteria for TIP.

In mobilising knowledge and practice communities for knowledge co-creation, a question is: what tools are available for this? In the Resource Lab, we have sections dedicated to the pragmatic approach taken in TIPC for developing and using transdisciplinary tools (of diverse kinds, eg, game, Miro based radar, pentagon, self-assessment, questionnaire, template, glossaries, FACETS tool etc). In TIPC, different stakeholders such as research funding organizations, hub partners and policy practitioners suggested different ways in which they have facilitated and could facilitate transformative change. This rich variety in the ways in which people learn loses its richness if one aspires to develop one generalisable and replicable tool that tries to put forward one way of structuring thoughts and guide actions. Therefore, an essential design criterion for TIP KI is to ensure diversification of knowledge practises by opening up possibilities of deep learning, sharing and reflecting, by resisting the temptation of toolifying everything. The TIP KI, in many ways, is designed to be more nuanced than offering set of tools for a prescriptive, task-list based approach to transformations. Conceptualising the KI of TIP, now has a legacy and history in being shaped through multiple internetwork and intra-network dialogues as well as in TIPC's own Mobile Transformative Innovation Lab (MoTIL).

A TIP KI is therefore many things. It is the full spectrum from being a hard infrastructure of a central observatory, information repository on one end of the spectrum and a set of soft services & processes to open up fluid, decentralised spaces for exchange and community building on the other end of the spectrum. The characterisations led to the Knowledge infrastructure being initially abbreviated as TASK-I – Transdisciplinary, Accessible, Sustainable Knowledge Infrastructure. While transdisciplinarity is widely acknowledged as a desirable characteristic, accessibility of the KI to a broader range of potential users and beneficiaries is a less predominant topic of discussion. The digital conferencing spaces, social media platforms and virtual event spaces are dedicated to this cause. Sustainability as a characteristic of TIP KI corresponds to maintaining the infrastructure and ensuring that it sustains through the challenge of time and research funding. A more important question is therefore, what do we want the TIP KI to be, as we find ourselves in increasingly difficult socio-economic and environmental circumstances?
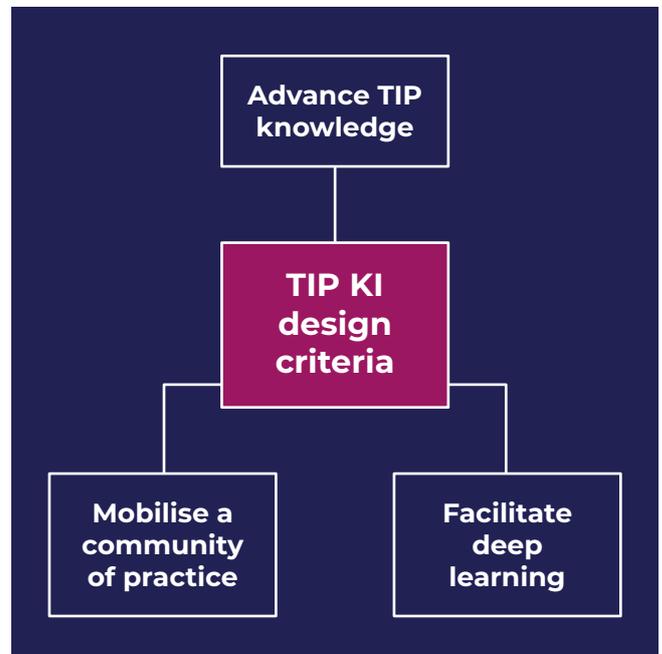
TIP Knowledge infrastructure and community of practice, as represented in the Resource Lab

Over the past years in TIPC, many documents are produced, many reports are written, many videos are recorded and many slidedecks are presented on and about the TIP KI and community of practice. These documents, reports, videos, slidedecks – as resources are featured in the Resource lab webpages, across the following four sections:

Section 1. TIP Knowledge guide and operationalisation

TIP knowledge is not limited to conventional scientific practice. In implementing TIP, academic knowledge is translated, adapted and contextualised to support and learn from policy practices that contribute to 'localised' social and environmental sustainability. In the policy and investment fields, (academic) concepts such as the socio-technical niche are understood and operationalised for different purpose and in different directions. Concepts, in these transdisciplinary action arenas, act as boundary objects (the same object is interpreted and understood in different ways by different people). The top level guides of TIP and Deep Transitions serve this purpose – they offer the boundary objects to enable that and facilitate the exchange between theory and practice. The operationalisation of these concepts can be seen in description of the TIP oriented projects and programmes or in 'pitches' for transformative potential of the initiatives to attract investment. The TIP KI are these conceptual guides, applied in projects where knowledge integration, translation and mobilisation happens, through facilitated transdisciplinary interaction.

Like any other infrastructure, The TIP knowledge infrastructure also needs operationalisation and management. MoTIL (Mobile Transformative innovation Lab) was conceptualised in 2020 to operationalise the KI. MoTIL was conceptualised as a space for data management from TIP experiments, training and capacity building, development and dissemination of tools and strategic future of TIP implementation in a handbook-like knowledge sharing space. As can be seen in resources that shares early conceptualisation of MoTIL, the scope was abstract intentionally to allow modifications, creative enhancements and

adjustments to the demands of the time. The initiative to develop the current infrastructure that is the TIP Resource Lab had its inception in MoTIL where ideation and planning on the resource lab happened.

The Resource Lab that now sits on a website (tipresourcelab.net) went through several rounds of conceptual iteration – from a handbook to a resource pack to a resource lab - carrying along, among other things, the idea of a database/repository of material resources (representing codified knowledge) produced in and around TIPC projects. Its creation is an example of dynamic transdisciplinary knowledge creation, accumulation and consolidation based on the experimental policy engagements. The infrastructure of the Resource Lab website is an essential shared space that 'hosts' most or all of TIP experiences that might otherwise remain scattered, context-specific and duplicated across the contexts and years. It is a digital space intended for academics and practitioners to visit and benefit from the diverse tools, stories of action and learnings from the past years of TIPC engagements.

Section 2. TIP Research agenda

Integrating diverse knowledges from different social science communities is itself a highly negotiated and contested process. Academics with specific backgrounds such as one in science and engineering will have a completely different view of the world and how to solve the world's challenges than a scholar from geopolitics and policy background. Bringing these two academics in the same room or in the same conference panel discussion requires an infrastructure that facilitate interactions, agreements, disagreements, alignment and contrasts in perspectives in a way that enhances the knowledge, compared to its original form. For instance, while a development scholar might have entirely different perspectives on drivers and challenges of innovation in Global South contexts compared to the STI scholar In European context, over the course of interaction, debates and discourses, knowledge around STI in global context is enriched and stretched with more nuanced understandings of the context specific sensitivities. The TIP knowledge infrastructure, in practice is therefore also an interdisciplinary research agenda as much as it is focussed on action and implementation.

This section brings together the theories, concepts, disciplines, empirical challenges and scientific methods that underlie the TIP Theory. While a research agenda (with ten-fold research questions) for TIP exists as a report, produced by mobilising different academic networks and through series of internetwork academic dialogues, the overarching TIP research agenda goes much beyond any single document outlining a set of research questions. Over the past several years scholars have revised the theory to position TIP in relation to existing STI policies, and to address alternative framings and lens such as mission-oriented innovation policy. TIP is debated in conjunction with futures thinking and anticipation theories, responsible research and innovation, sustainable investment and finance, institutional work and entrepreneurship. Debates, disagreements and plurality of perspectives between competing theories, and experimental approaches to

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navigate those differences show the rich diversity of resources that define the fertile ground of the TIP resource agenda. Empirically grounded work on TIP researchers in Latin America and Africa has also highlighted the alternative ways of thinking required in applying TIP theory in the Global South. All of these resources together constitute the emerging interdisciplinary and transdisciplinary research agenda for TIP, to better answer the question 'what should an innovation policy look like to effectively address the SDGs', amongst many other questions.

Section 3. TIP community of practice (CoP)

Academic publications, reports, and presentations are tangible outputs of scientific research. No matter how interdisciplinary and transdisciplinary these outputs are, they must be mobilised, socialised, critiqued and applied, in order to address transformational challenges. These outputs also tend to become expert led, technocratic and static, which goes against the ethos of transformative knowledge practice. Beyond a repository of scientific or policy outputs, the TIP KI can also be conceptualised as a collection of people, who share a deep commitment and ambition to enable transformative change, either through research, or through policy, investment and social practises. Having multiple stakeholders engaged in TIP practice and building a community around it ensures reduction of blind spots and uncertainties related to lack of communication, understanding, skills and willingness of certain stakeholders to enact transformative change. Nurturing productive relationships between them, enhancing their interpersonal connections to build a TIP community of practice (CoP) is an inseparable part of the TIP KI. This CoP is composed of academics, innovation funders, intermediary organisations, investors, and policy makers, who are applying, synthesizing, translating and reflecting on the knowledges used and needed in the practical implementation of TIP. They are the broad and inclusive constituency of actors who take the TIP KI one step further: from knowing what (the resources) to knowing how (through events) and knowing who (by identifying likeminded people and mobilising their interests). On one hand, the CoP is part of the KI, on the other hand, the CoP strengthens the KI by mobilising of knowledge and advancing the related theory and practice.

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In TIPC, several CoP emerged over the years. The coordination and collaborations between the different academic networks that debated and exchanged ideas and experience resulted in internetwork dialogues that contributed to the formation of a community of practice. The process over the span of more than three years involved bringing together researchers and policy practitioners together and bridging the intellectual divide between multiple areas of knowledge such as STS (Science Technology studies), Transitions studies, and Innovation systems and development scholars. This process helped identify and began the filling of gap between these research areas and policy challenges.

The Knowledge networks and regional hubs are other exemplars of CoP that emerged within TIP KI. They are designed to better orchestrate genuine collaboration for shared transformational agendas, through building trust-based relationships, mutual understanding, recognition of complementary skills and capacities and greater realisation of the urgent need for wilful and productive collaboration irrespective of differences. Ideally, a community of practice is a safe and open space that gives room for learning-by-using and for stretching the comfort zone of the knowledge and action of both academics and practitioners. In dialogue with the networks and in the conversations in the Hubs, it is becoming

clear what capacities are required for TIP experimentation and evaluation; how to build capacities across geographies for equitable knowledge creation and how to apply the TIP framework in existing projects and experiments.

Building a TIP CoP is a not a time-bound project that can end anytime soon. It is a gradual and organic journey through roads less travelled, therefore full of uncertainty and exploration. To build a strong team for this joint exploration, a network of coaches for TIP was created in parallel to curating the resources for the Resource Lab. The coaches are scholars and practitioners who have engaged with the resources in the Lab, and with the theories and experiments have the willingness to lead this community forward. They are the explorers, who will guide and support those who join the road in the future. Such a network is itself a KI as they continue steer and shape TIP knowledge, beyond what is written about it, through events, dialogues and verbal exchanges.

Section 4. Engagements for TIP Knowledge co-creation

An integral part of academic life is attending conferences. Conferences provide important opportunities for scholars to meet other scholars, present their research ideas, get and give feedback. They contribute to the collective process of new knowledge creation. Conferences are also spaces where academics meet other academics, early career scholars meet established scholars, a well cited last name becomes a real person who has more ideas to share than what they have written and published. Conferences, in academic life, are knowledge infrastructures that help academics to feel part of a community. However, the purpose of conferences has evolved and extended with the evolution of science towards interdisciplinarity and transdisciplinarity. Research projects such as TIPC with their ambition to integrate diverse knowledges and form communities of practice, go much further in enabling engagement spaces for TIP knowledge co-creation. The aim of numerous TIP events, workshops, seminars, webinars, and even entire conferences was not only to facilitate the exchange of research ideas and academic networking, but to create opportunities for sustained collaboration and trust building among TIPC partners, individuals and organisations pursuing TIP experimentation. The TIP conferences, conceived as open and experimental, compared to traditional academic conferences, provided space for translation between the knowledges and enabling theories and methods to interact with the world of practice. We have explored how the digital space can play an important role in experimenting with the conference space, not only in response to the pressure of the pandemic, but also shaped by the values of inclusivity and minimising carbon footprint.

In presenting how, knowledge cocreation happened through numerous TIP events and engagements, one of the resource collections in the Resource Lab features all of the TIP conference programmes. These programmes illustrate the experimentation with the design of the sessions, formats, style and delivery of conferences. The conference programme is a knowledge resource in our case (in spite of its lost relevance after a conference is over, in most cases) as it shows the diversity of people, projects and anticipated learnings from a conference, as well as the underlying decisions of balancing diversity, depth and coherence in TIP knowledge creation. The various conference reports stay witness of what was discussed, how the knowledge was shared, debated, transferred and translated.

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The more interesting resources in this component are however are the ones which were reflective of the events. For example, in the closing plenary of the TIP conference that was a milestone in creating the TIP KI, the panel reflected on what was being discussed in the conference on various aspects of KI as well as next steps. These reflective discussions contribute to knowledge consolidation. Among many insights on TIP KI, what was prominent in these reflections was the importance of academic-practitioner collaboration, knowledge and innovation networks, role of open science, universities' knowledge systems and role of public and private funding to support TIP oriented knowledge practices to further strengthen the infrastructure and community.

There is also an entire resource collection that features projects presented in poster format in TIP conferences. The collection displays the rich diversity of projects – both research and policy projects – that are congruent with the philosophy and action of TIP. This collection shows the variety and multiplicity of research projects that are contributing to the broader research agenda of TIP. Ranging from science diplomacy to local capacity building, from platform economy to traditional medicine, from high-tech strategies to social movements and informal institutions – this series of posters stand as evidence of breadth of research and practice required for addressing transformational challenges.

Future of TIP knowledge infrastructure

The TIP knowledge and community, in spite of the rich variety of resources and initiatives, are just starting the emerge. In the short-term future, there will be further efforts to extend and strengthen the TIP KI and CoP through an initial mapping of people, projects, places – by whom and where TIP is performed. However, this information database is dynamic and rapidly evolving, therefore the durability of this KI is something that will require close monitoring and adaptation by the network of coaches as well as other members of the community.

Indeed, building knowledge infrastructure comes at its own costs. There are literal and explicit financial costs of producing knowledge in accessible and exchangeable format, as the making of the resource lab amply demonstrates. In this Resource Lab, the process and intensity of work was focussed on the curation of the website, design interventions and preview events engaging with the enthusiastic attendees and coaches. There are also implicit and non-financial costs such as time dedicated voluntarily by many, to contribute to this infrastructure. Where does these processes leave us in terms of advancing the theory, expanding the scientific knowledge base and policy influence in the short and medium term? How can a TIP knowledge infrastructure and community of practice contribute towards the advancement of the knowledge field and ensure operationalizability of the knowledges beyond a lifetime of a research project and beyond the current empirical contexts of interest? We will leave these questions for the TIP community to ponder on and find solutions to, to scale, strengthen and sustain the potential for a highly impactful research and action community.