

ISI-Utrecht University Workshop

Governing mission-oriented innovation policies

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Workshop Summary

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To meet grand societal challenges, such as climate change or digitalization, many nations have introduced mission-oriented innovation policies (MOIPs). Typically, MOIPs aim to cut across traditional sectoral and bureaucratic boundaries to address complex challenges and enable socio-technical transformation. Yet, these MOIPs create new challenges, from policy design to implementation and impact assessment. On 20 February, governmental and academic experts from the Netherlands and Germany conveyed at Utrecht University (UU) for a one-day workshop to exchange conceptual perspectives on as well as practical experiences with MOIPs. The aim of the event, co-organized by UU and Fraunhofer ISI, was to improve mutual learning and develop novel approaches for the governance of innovation policies.

Session 1: Putting missions in perspective: from governance to instruments

After a welcoming of the participants by **Marko Hekkert (UU)**, the first session of the workshop focused on conceptual attempts to better understand mission-oriented policies (MOIPs). **Matthijs Janssen (UU)** provided an overview of the foundations of missions, based on works of the Mission-oriented Innovation Policy Observatory. He highlighted that despite the increasing importance of MOIPs, many relevant aspects remain unclear and that there is a need for a common understanding of missions, their specific potentials, problems and success conditions. In this context, he pointed out that missions aim to mobilize innovation in order to solve a problem (urgency) in the socio-economic domain, with missions being located at the interface of problem-based governance and innovation governance. Being potentially affected by both top-down and bottom-up dynamics, Matthijs Janssen emphasized that missions may change over time and may address different aspects depending on the interplay of the aforementioned dynamics. Moreover, as the problem-driven approach of MOIPs leaves open which solution is appropriate, a key role of the

mission-oriented innovation system is to manage the interplay of different solutions from the technological innovation system (combining, catalyzing, (de)selecting, initiating).

Further, he raised the question how to relate missions to the policy mix, indicating three possible ways:

- The broadening of challenge-led R&D policy („broadening green policy“)
- A more systemic approach to modern industrial policy
- A more challenge-driven approach, resting on the identification/selection/legitimation of innovation pathways

In the second presentation, **Jakob Edler (ISI)** discussed central challenges of MOIPs, which could, as he argued, be seen as „the trap of STI policies“. The emerging focus on so-called „new missions“, aiming to address societal challenges and transformation in multiple spheres, poses several obstacles compared to traditional policies:

- Politicization and legitimacy: In- and output legitimacy of decisions taken and the normative choice of priorities
- Actor complexity: Need for a broader perspective, including e.g. other ministries and agencies
- Changing role of STI: new knowledge/technological solutions are only part of the solution (enablers), other aspects, such as behavioral change gain importance
- Changing functions of the state: depending on the specific context, the state may play different roles and thus require different means, highlighting the limits to act through STI funding. Moreover, missions bring together different ideational backgrounds.

As Jakob Edler pointed out, there is „no obvious process or even agreement on how to design and implement new, broad missions“. Policies are simultaneously shaped by the new idea of mission-orientation, the understanding of the current conditions of STI policies and the relationship with other actors. In consequence, he emphasized that „mission-oriented policies cannot remain STI policies“, but require a broader perspective, taking contestation, system change and the role (and limits) of the state into consideration.

The third presentation was given by **Miriam Hufnagl (ISI)**, who presented Fraunhofer ISI’s ongoing scientific support project to the German Hightech Strategy 2025. After outlining the goals of the project, she argued that in order to capture the

empirical diversity of missions, a differentiated approach for impact assessment is necessary. Therefore, she outlined a novel mission typology incorporating the complexity of governance as a main characteristic of missions. Applying this typology to the twelve missions of the German Hightech Strategy, she underlined that different missions face specific types of challenges and therefore require distinct modes of governance - an aspect that needs to be taken into consideration when trying to understand the effects of missions.

In a final step, she presented the next elements of the project, which include a repeated analysis of selected missions in the context of their specific socio-technical system, aiming to measure key dynamics within the missions over time. As the short discussion afterwards made clear, the typology reflects the empirically observable formulation of missions, thus can be understood as the result of translating societal challenges into policy goals. This linked to the point discussed by Jakob Edler beforehand about the selection process of missions and the question how or what kind of directionality is being imposed.

Session 2: Practical experiences and challenges

The second session was devoted to the experience of policy-makers from Dutch and German authorities that are involved in the implementation of mission-oriented policies. The first presentation was provided by **Koen de Pater** from the **Dutch Ministry of Economic Affairs and Climate Policy**, presenting an overview of the Dutch approach to mission-oriented innovation policy. In 2019 innovation support experienced a shift towards societal challenges. Overall, four challenges were defined by cabinet decision: (1) “Energy, transition & sustainability”, (2) Agriculture, water & food“, (3) “Health and care”, and (4) “Security”.

Within the 25 missions emerging from these four topics, the relevant nine so-called “top sectors” are involved in organizing the process. All covenants are brought together by thematic teams (20-25 participants), resulting in an overall „knowledge and innovation covenant“ (KIC), where partners dedicated budget as well as committed themselves to implement the agendas. Key enabling technologies (KETs) are also part of the KIC, assuming that they are a driving factor in the process. It is important to note that each participant retains control over its own budget (e.g. regions with EU funding), so that the main idea is to ensure complementarity of investments. However, for each societal challenge and for the KETs, stakeholders convene periodically to discuss their activities and budgets and cooperate where possible. At the end of his presentation, Koen de Pater highlighted several potential challenges, such as the lack of interest of certain stakeholders in certain themes (e.g.

healthcare providers in prevention), the lacking representation of certain actors - like start-ups - in the “top sectors”, or the alignment of different missions at different institutional meetings.

The subsequent presentation by **Ed Buddenbaum** from the **Dutch Ministry of Economic Affairs and Climate Policy** focused on the Dutch Climate Agreement and its implication for innovation policy. As the main characteristics of the Dutch approach, he pointed out the extensive consultation process with stakeholders, resulting in an overall agreement with specific goals for five areas (agriculture and land use; electricity; mobility; industry; built environment). Under this umbrella, there is a total of 13 missions (2-3 per sector; one cross-cutting for system integration) that require a cooperation between different “top sectors”.

In the subsequent discussion, Ed Buddenbaum clarified that selection of stakeholders was driven by the relevance of these actors (e.g. “heavy polluters”). Asking about the factors driving the commitment of industry actors, he emphasized two factors: On the one hand, the long-standing top sector structure turned out to be helpful, as it allowed to rely on previous connections. On the other hand, outlining the overall goal sent a credible signal that there will be change in the future. This way, it created strong incentives for cooperation among stakeholders in order to shape the relevant innovation programs.

The final presentation was given by **Teresa Schlüter** from the **German Ministry of Research and Education (BMBF)**, yielding insights into the implementation of the German Hightech Strategy 2025. Mobilizing more than 15bln EUR under the umbrella of the Hightech Strategy, the strategy defines 12 mission. She highlighted the historical development of the Hightech Strategy starting in 2006, with the strategic orientation changing from “key technology” to “grand challenges” and now to a “mission-based” approach. Since the implementation of the missions is strongly based on a close consultation among different ministries and other actors, Teresa Schlüter described the process as “a co-learning experience”. In her view, a national-level approach might be an advantage, as it is more clearly defined who are relevant actors, compared to missions e.g. at the supranational level. An emerging question during the implementation related to the potential role of new technologies to address coordination and governance requirements. Another relevant question was to what extent missions should be equipped with a designated budget.

After the presentation, there was a vivid discussion on the use of experiences from the “Energiewende” (transition of the energy sector). Teresa Schlüter pointed out that the topic energy transition is very high on the political agenda, but also that the

experiences made cannot be easily be transferred to the missions of the Hightech-Strategy, not at least since there is a long and at times emotional history connected to the Energiewende, with strong bottom-up demands and civil society engagement.

Session 3: Discussion

One theme that was discussed intensively among the workshop participants were the limits of STI policy and the interdependency of a wide range of policies in mission-oriented policies. A first aspect was raised by **Miriam Hufnagl**, pointing to the fact that multiple missions might be linked to certain policies, such as the suggestions of the coal commission in Germany that have implications for reducing CO2 emissions and regional disparities. According to **Marko Hekkert**, most relevant in this context is a clear alignment of goals, acknowledging that STI only constitutes a part of the policy mix. **Jan Pieter Mook** from the **Dutch Ministry of Justice and Security** highlighted that from a policy-perspective there is a need to understand the limits of what a certain policy can achieve, as not every effort may be worthwhile (“swimming upstream”), illustrating his case by drawing on fighting drug abuse in the Netherlands. In the same context, **Ed Buddenbaum** confirmed that one of the main challenges in case of off-shore wind mills are not technological solutions, but rather the question on how to combine or align different demands and goals.

Another strand in the discussion addressed the legitimacy of mission-oriented policies the formulation of mission goals. **Marko Hekkert** raised the question on how to formulate missions in order to ensure sufficient commitment, supported by **Matthijs Janssen**, who argued that the mission formulation is a key process. **Teresa Schlüter** highlighted that the process of setting up missions is probably the most important element in the larger MOIP process, with the state acting as a facilitator or moderator, able to mobilize other societal actors. In response, **Iris Wanzenböck (UU)** complemented that the mission formulation is not a purely technocratic process, but also driven by political considerations. Adding to this, **Jonas Colen Ladeia Torrens (UU)** suggested to put a stronger emphasis on the new dynamics created by missions and their catalyzing and integrating power - arguing that a too narrow definition of missions is at risk to be disconnected from real-world problems.

Turning to the conditions facilitating the process in the Netherlands, **Marko Hekkert** argued that a completely open process with regard to mission goals would have been a lengthy process. Moreover, it was highlighted that besides the focus on a single instead of multiple goals, in case of the climate agreement, the process could rely on previous decisions and initiatives and already established goals. Whereas **Florian Roth (ISI)** emphasized an understanding of missions as a “signaling game” that

requires sufficient resources, **Marko Hekkert** drew attention that credibility arises from the fulfillment of goals with instruments being changed if a target is not met on time - so that a signal alone might not be sufficient. **Matthijs Janssen** added to this argument by pointing out the difficulty of getting relevant actors involved beyond the “top sectors” and in instances with limited buying power.

Moreover, **Jan Pieter Mook** stressed the importance of communication and alignment of actors, indicating these are the main strength of MOIPs, while simultaneously pointing to the difficulties to make things quantifiable at the beginning of the process. **Koen de Pater** argued that from a policy-maker’s point of view, questions of legitimacy are not of foremost interest, of greater relevance would be approaches to deal with the fragmented structure of actors and monitoring the progress of missions. Finally, **Edgar Salas Girones (ISI)** argued that the specific institutional context plays a role, suggesting that different countries require different approaches.

Key insights:

- The multi-faceted character of MOIPs also has implications for the underlying structure. While STI policies usually play a role in the policy mix, they are only one building stone - creating tension and leading to questions about what and how to prioritize issues in the implementation process.
- The process of mission formulation is a key step for MOIPs, which in an ideal world would also involve the formulation of specific targets. However, it also entails a large number of challenges, e.g. how to create credible signals, ensuring appropriate actor selection and the involvement and mobilization of actors. From this perspective, it appears relevant to study the preconditions for missions, such as the need for broad societal support, ownership, leadership, path dependency, actor mobilization etc.
- The Dutch example illustrates the usefulness of established structures like the “top sectors” that served as a vehicle to get actors involved in newly formulated missions. At the same time, there is still a considerable need to better understand how to govern the process of mission implementation - particularly against the background of a lacking approach to measure the progress of missions so far.

Collection of open questions (Matthijs Janssen - UU):

- What are good units of analyses when disentangling missions? Strategies? Events? Activities? Policies? ‘Neat projects’? Should we first categorize missions and then look what they are composed of, or rather the other way around?
- What strong choices do policy makers (dare to) make when focusing on particular goals? Does this include destabilizing incumbents? Or (also) spurring incumbents to reinvent themselves?
- Do missions bring an extra layer of policies and coordination mechanisms, or do they also lead governments to take something out?
- When prioritizing/pursuing goals and solutions, do some principles (leadership, democracy, freedom of choice) weigh more heavy than others? Aren’t missions exactly about overcoming inconsistencies between those principles?
- What is the mission-induced ‘delta’ in domains like the Dutch Energy transition (building on extensive consultation rounds / societal dialogue, and an existing policy mix)? Does the introduction of a mission help to select or accelerate particular solution directions? Isn’t the mission already partially completed if clarity about chosen directions emerges?
- Within STI policies, missions might help to shift to large programs instead of smaller fragmented projects (however, this does bring a risk of capture / lack of diversity).
- How can missions obtain a ‘buy-in’ from relevant stakeholders? Does this need to be normative, or is it fine if there is a business interest? If missions are visible enough they might attract players simply because they realize something is going to happen; they might be a first mover into a new direction or a laggard pursuing an increasingly outdated path.
- In some cases of mission-oriented policy, details about governance arrangements are unclear simply because they are still being developed and adapted. So far, it seems a largely experimental policy approach.
- Missions might gear up activity when they bring funding. Does a mission really start when there is funding, or is such financial commitment in itself already an indicator of successful mobilization and activation?
- How does STI policy relate to a policy approach where non-STI authorities have the ownership over the problem that is being tackled?
- Can missions benefit from public consultations and/or digital platforms for prioritizing problems and opening up search activities?

- Is it sufficient if missions only provide signals (e.g. on societally desirable innovation directions), or does this still reflect a confidence that markets will then automatically re-align and provide solutions? Aren't missions about addressing the inaction of market mechanisms?
- What new roles is the state assuming when deploying missions? And what is the 'proof of the pudding'; do indicators on goal achievement tell us a lot, or is it sufficient when new coordination mechanisms lead to policy realignment, budget commitments, etc.?
- Once missions are there: what does management at the overall strategy level consist of?
- Do missions require certain preconditions in terms of consultation platforms and coordination mechanisms?
- When do missions start; when the goal is there, or when the goal is being formulated?

Participants

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