Towards new types of linkages between science policy researchers, stakeholders and policymakers

Eu-SPRI Stakeholder Advisory Board reflection paper January 2024

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1. Introduction

Eu-SPRI places a strong emphasis on policy, which lies at the heart of its mission statement: to strengthen the vibrant but dispersed community of researchers focusing on interdisciplinary dimensions related to policy and governance in the field of knowledge creation and innovation.

To actively involve policymakers, Eu-SPRI has undertaken various initiatives. For instance, it organises policymakers' panels to provide valuable feedback to early career scientists (ECRs) on their research projects. Presently, Eu-SPRI endeavours to strengthen and systematise the policy relevance of its research agenda. It aims to assist policymakers in navigating the ever-evolving challenges and opportunities posed by digitalisation, societal issues, geopolitics, and more, enabling them to make informed decisions.

Against this backdrop, the Stakeholder Advisory Board (SAB) was created in 2021 by the Eu-SPRI Executive Committee to improve the policy relevance of the Eu-SPRI community, building upon its unique interdisciplinary nature. The SAB was assigned the following missions:

- 1. Provide advice on ways to strengthen and improve the linkages between 'science policy' researchers and practitioners;
- 2. Act as ambassadors of Eu-SPRI, promoting its work and events, notably towards the policy makers' community.

The members of the SAB have readily embraced this expansive mandate, expressing their commitment to proposing tangible guidelines and initiatives rather than producing conceptual and inspirational notes. The SAB aims to facilitate new avenues for dialogue between science policy researchers and practitioners, systematically and practically. This dialogue can address a wide range of topics that have been central to the Eu-SPRI agenda since its inception, with particular relevance to supporting sustainability transitions.

In light of these considerations, this note presents the results of the work of the Board on how to foster novel connections between the science policy "knowledge" and "practice" communities to tackle the most pressing challenges of our time.

The reflections of the SAB are based on extensive discussions among its members, enriched by insights from interviews with policymakers, a survey of Eu-SPRI researchers, dedicated plenary sessions at the 2022 and 2023 Annual Eu-SPRI conference respectively in Utrecht and Brighton, and several meetings with the Eu-SPRI Executive Committee.

2. What do science policy researchers aim to deliver, and what do policymakers need?

The results of the SAB survey demonstrate that policy impacts drive researchers' daily activities (Figure 1). Eu-SPRI researchers aim to support science, technology and innovation (STI) policies and, in doing so, contribute to solving societal challenges and supporting sustainability transitions. However, the results must also respond to academic criteria and be published in high-level peer-reviewed journals. Although the legitimacy of systemic approaches and transition studies has increased, these objectives can still be challenging to combine in certain academic circles.

¹ The survey, conducted by the SAB in May 2022, was sent to the Eu-SPRI contact lists. 47 exploitable responses were received and analysed, covering the main science and innovation research institutions (universities and research institutes).

According to survey results, the first motivation of Eu-SPRI researchers is to support science, technology and innovation policies for sustainability transitions. This prevalence of Eu-SPRI researchers' 'societal mission' is a significant result that demonstrates one of the key strengths of this community and bodes well for the future of its dialogue with the policy community, should it be able to transform this objective into concrete action.

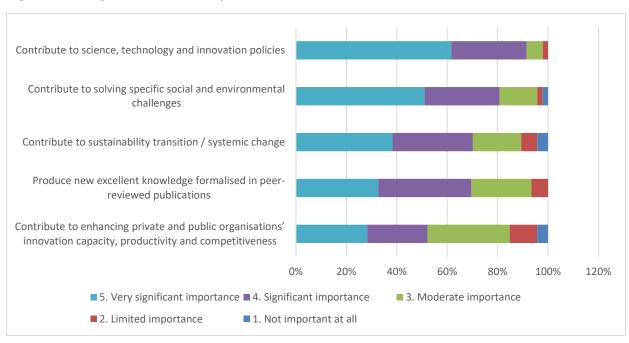


Figure 1. Survey results – What objectives motivate and drive EuSPRI researchers?

Source: SAB Survey 2022

As they strive to tackle societal challenges through their interventions, policymakers emphasise the need for research to support the development of new policy options and demonstrate their suitability in specific contexts. They expect that researchers and analysts broaden the range of policy options and provide evidence-based and independent views on their respective merits and limitations in various institutional contexts and for different challenges. A range of work, notably on the evaluation of transformative policies, emphasises that policymakers not only need evidence on the impact of their interventions but also on the processes that have produced these impacts. This focus on the formative dimension that is called for in monitoring and evaluation for enhanced learning can be extended to all policy-relevant research to support the wealth of currently ongoing transition policy experimentations. An important implication is that researchers' inputs are not produced and delivered in isolation but are part of a package of information and knowledge originating from a broad set of societal actors interacting with policymakers through various consultative and participatory channels.

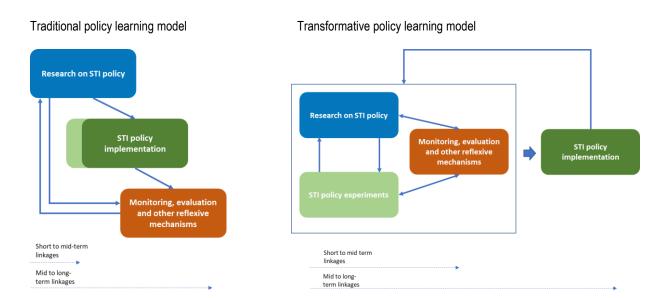
Policymakers striving to design and implement new transformative policy frameworks show high interest in information and knowledge from policy research, analysis, and evaluations. These include the results and impacts of their interventions and, especially during the early stages, the processes at play and various policy experiments to support sustainability

transitions. These formative elements are contributed by researchers, analysts, and consultants, as well as by a range of stakeholders through a variety of channels.

It is difficult to assess the extent to which this appetite for research is representative of the broader community of STI policymakers, especially when they are subject to time pressure in a context of increasing demand and, most often, capacity shortage. However, two factors suggest that it extends beyond the policymakers interviewed as part of these studies and more generally those with whom the SAB members interact in the course of their daily activities. First, by educational background, prior experiences and embeddedness in the research and innovation space, many STI policymakers have a 'natural' interest in knowledge and change. Second, as they are confronted with the growing imperative for sustainability transitions, there are few experiments to rely upon to learn and improve their practices. Most of them are pioneers of uncharted territories... As it has been pointed out by several authors, so-called transformative or third-generation policy frameworks are, to a large extent, still mainly theory-driven.

This configuration results in a need for shorter, more numerous, experimental and iterative linkages and learning feedback loops between research and policy than has traditionally been the case in STI policy (see Figure 2).

Figure 2. Patterns of science-policy-society linkages in traditional and transformative policy models



To a significant extent, these two models correspond to the linear process and iterative process models of science-policy interface developed by the UN (Box 1).

Box 1. The two models of science-policy interfaces

The UN distinguishes between two models of science-policy interfaces.

In the linear process model, policymakers take inputs from researchers and other experts. This model is most effective when i/ scientific and technical knowledge are applied to a well-defined question, such as issues of safety or efficacy; ii/ policymakers do not seek these inputs explicitly, but their awareness is raised to the point, gradually increasing the demand for evidence or expert advice; iii/ the research community is incentivised to engage through directed funding or commissioned research and knowledge translation activities.

In the iterative process model, a more comprehensive range of actors, including researchers, experts, non-experts (e.g., citizens) and policymakers jointly identify the relevant knowledge and evidence needs. These different sources and their respective inputs and perspectives are marshalled and synthesised to "develop a comprehensive and jointly held perspective of the policy problem or system of problems". This model seems most effective when dealing with issues i/ at the boundary between different domains of knowledge ii/ that involve multiple, often conflicting, consequences of policy action and therefore require trade-offs ii/ that require the adoption of a systemic perspective. All these conditions are met by topics related to SDGs.

The report stresses an "increasing consensus of theory and practice that the SPI iterative process model offers the most promising approach to achieve socially acceptable and evidence-informed policy decisions". However, it is also acknowledged that this is not the most straightforward option since researchers' scientific methods and policymakers' social values might not always be compatible and make integration difficult. One solution involves certain actors and organisations (supported by dedicated mechanisms) performing "boundary work". Boundary actors and organisations are tasked with coordinating the multidirectional exchanges between the various actors in the iterative model, while still demarcating their perspectives to protect the different types of legitimacy of the research and policy communities.

Source: UN (2021), CEPA strategy guidance note on the Science-policy interface, United Nations Committee of Experts on Public Administration (CEPA),

https://unpan.un.org/sites/unpan.un.org/files/Strategy%20note%20science%20policy%20interface%20March%202021.pdf

The experimentation, implementation and learning on transformative policies call for shorter, more numerous and iterative linkages and feedback loops between research, policy and the broader society than has usually been the case in traditional STI policy

A stakeholder analysis performed in the context of a feasibility study to set up a new interactive platform for System Innovation Research in Sweden offers valuable insights into the motivations and challenges of researchers and practitioners to interact and work jointly in such platform. The results are presented in Annex C.

3. Are science policy researchers responding to policymakers' needs?

The two STI knowledge and practice communities agree they are still too 'distant', but that their linkages have improved. However, in (liberal) democracies, both communities work and interact with society in complex ecosystems that imply different or even conflicting roles for each of the two communities. Therefore, distance is sometimes a virtue rather than a deficit. Policymakers are more aware of researchers' work and, despite staff shortage and increasing time pressure, the general trend toward evidence-based policymaking and the sustainability transition challenge drive them to have more frequent and in-depth (direct or indirect) interactions with relevant research activities.

Researchers themselves consider they are better connected to policy needs and that their policy impact has slightly (49% of respondents) or significantly (24%) increased in the last 10 years. Only 4% of respondents consider that their impact has slightly decreased.

A significant majority of researchers who responded to the survey consider that they are better connected to policy needs and that their policy impact has at least slightly increased in the last 10 years

Several channels exist between the two communities. Informal communication and contacts between policymakers and researchers and the commission of specific research projects and studies are usual ways to acquire relevant, tailor-made inputs into policymaking. Some administrations have established mobility schemes for researchers to spend time in some administrations and, less frequently, for policymakers to be hosted in a research institution. However, these schemes are often not well institutionalised, remain non-systematic, not well-known, and insufficiently encouraged. Earlier in research careers, public PhD schemes – such as the one operated at the Research Council of Norway – can be a way to connect a researcher to a particular policy context directly but are less frequent than industrial PhD schemes. More generally, there seems to be a tendency for administrations to more frequently hire researchers for important positions from outside the administration. This is the case in Austria in 2023 where directors-general for innovation and transformative policies have an academic background at research institutes. This can be related to improving administrations' openness and to a more adequate policy-oriented profile of researchers.

Researchers can support 'policy in the making' by participating in various policy advisory groups and committees with different advising and/or coordination roles. The impact of these bodies, which can directly include researchers as members or at least be users of research inputs, depends on an array of factors that go well beyond their composition. A critical condition for them to provide meaningful recommendations – as opposed to being mere 'talk-shops' – is the presence of a strong secretariat that can prepare the meetings and commission, perform or synthesise policy research and analyses to feed into these meetings. Often, in connection with such a body, developing a strategy (national, regional, thematic, etc.) is another occasion to feed research into policy making. The Norwegian Long-term Plan for Higher Education and Research, revised every four years, is an essential platform for interactions between policymakers and researchers in various scientific fields, including science policy.

A few institutions have also established ways to match the policy needs and capabilities of the research community. This is for instance the case of the UK's Areas of Research Interest (ARIs) platform.

Box 2. The United Kingdom's Areas of Research Interest (ARIs)

The United Kingdom created a dedicated demand-driven platform where UK government bodies can post their policy problems for researchers. The latter can then see how their research could help solve these problems and submit their work to inform government policies. By identifying ARIs, the platform aims to ensure that "research efforts are targeted where evidence is most needed to inform policy decisions and improve government performance". Once a researcher has identified a relevant question, the platform provides guidance on how to reach out to the correct policy team.

The platform touches on every domain, including questions relevant to innovation policy, such as "How does the UK play a leading role in this modern-day industrial revolution and consolidate our position as an internationally recognised leader in green technology, science and research?".

About 20 organisations all in all contributed their knowledge needs onto the platform, including the cabinet office.

Source: https://ari.org.uk/

During interviews, bridging institutions and platforms such as OECD, the European Commission and TAFTIE were highlighted as a critical channel to 'convert' research results into inputs for STI policy-making and increasingly to host dialogues between the two communities.

Interviewed policymakers also stressed that research outputs should be understood as part of a wide range of inputs (knowledge, evidence, expertise, views) supporting policymaking. To be more meaningful, research most often needs to be embedded in broader 'policy co-creation' initiatives² that involve a range of stakeholders combining different perspectives, from researchers to practitioners, consultants, experts and citizens. Consequently, researchers inform policymaking but should better connect their scientific and technological evidence with transdisciplinary knowledge and better understand and acknowledge diverse sources of influence on policy creation. This is particularly the case for innovation policy that seeks to drive or promote system transformation rather than incremental change or commercialisation.

The linkages between policymakers and researchers build on mobility schemes between the policy and academic arenas, advisory and consultative bodies and specific policy-relevant research and studies. In particular, for transformative policies, interactions with researchers should be embedded in a dialogue involving a diverse spectrum of societal actors.

Recent research on transformative, notably mission-oriented, policies highlights the importance of high political level. This points to the importance of also establishing linkages between researchers and politicians. In Finland, for instance, there was, until very recently, a parliamentary working group on STI. The group formally and informally interacted with researchers, whose inputs impacted its outcome.

² See Cristian Matti and Gabriel Rissola (2022), Co-creation for policy - Participatory methodologies to structure multi-stakeholder policymaking processes, EIT Climate-KIC and Joint Research Centre (JRC), https://publications.jrc.ec.europa.eu/repository/bitstream/JRC128771/kjna31056enn_3.pdf

4. What factors condition the linkages between researchers and policymakers?

According to researchers, the main barrier affecting the impact of research on policy is the lack of dedicated spaces for an effective dialogue between the two communities (Figure 3). The second most prominent barrier, as perceived by researchers, is the limited absorptive capacity of policymakers. The extent to which this is caused by a lack of the necessary skills and knowledge on the policy side or the difficulty of researchers to format (translate') their findings to make them accessible and useful in a policy environment is difficult to assess. There also might be a need to manage expectations from both sides better, as scientific evidence can be helpful but not decisive in policy.

More generally, a significant proportion of researchers point to a mismatch between the 'supply' and 'demand' for knowledge on STI policies. This also can be explained by the weak embeddedness of researchers in the policy sphere. As stressed by some policymakers, some researchers have a limited understanding of the workings of public administrations, and therefore of the context in which their inputs could be used. They also mentioned the tendency of some researchers to treat public administrations as a black box, lacking granularity and nuance. The concrete experience of researchers accumulated over time in different policy contexts – not as part of a one-off project – is considered essential to interact meaningfully and trustfully with policymakers, with the necessary depth and granularity.

Researchers emphasise in the survey that some policymakers still rely greatly on traditional policy approaches that are hardly relevant to the work on sustainability transition. Policymakers themselves agree that some of their colleagues are not convinced about the need for transformative policies and still rely on individual and neutral policy instruments, owing to the market failure paradigm.

The lack of incentives to contribute to policy at the individual researcher level (career development, evaluation of individual performance, rewards, etc.) and the organisational level (KPIs, institutional funding, evaluation of the organisation performance, etc.) also hinder the capacity of academic research to have a policy impact. Interestingly, researchers do not consider that their linkages with policymakers are affected by issues related to their mindset, culture or possible lack of interest in policy-relevant work.

SAB survey and interview results point to several barriers to science-policy linkages originating from the research and policy sides. The main one is the lack of dedicated spaces for an effective dialogue between the two communities.

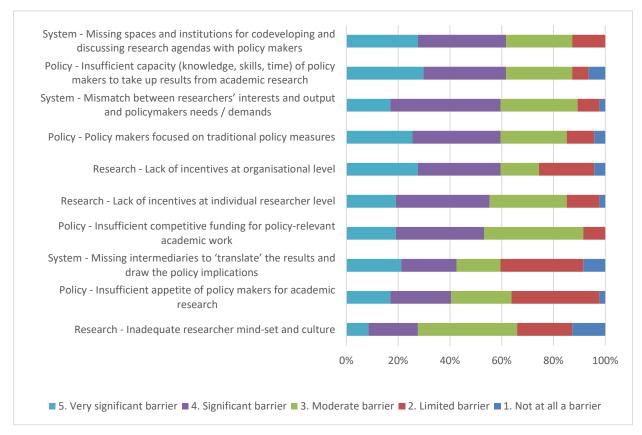


Figure 3. Survey results – What are the main barriers that hinder the capacity of academic research to support more effective STI policies for sustainability?

Source: SAB Survey 2022

Both policymakers and researchers concur that the nature and intensity of the linkages between the science and policy research communities are country-specific. They largely depend on the underpinning national institutional setting, policy, and research culture. This raises the issue of whether the EU level could be adequate to strengthen these linkages or if this should be addressed at the national level, considering each country's specificities.

Among the leading national factors, a vibrant domestic research community in R&I policy was mentioned as a critical enabling factor. Such a community often does not emerge by itself when it exists. It resulted from some key research programmes that nurtured generations of R&I policy researchers in the country. This was the case with the ProACT research programme, which operated in Finland in the early 2000s for a few years. It was a significant and unique STI policy research effort which brought new researchers to the field and educated them in interaction with policymakers in the area (about 40 to 50 PhDs in innovation policy in total). Unfortunately, as is too often the case, this programme was a one-off initiative and was not followed up with new programmes. In this respect, Finland also demonstrates that the linkages between policy experts and practitioners can also be limited in time. Political change can radically alter the situation. The new Finnish government that came into office in 2015 demonstrated a significant distrust for research, which resulted in the phasing out of several initiatives and channels between the two communities. One important question, therefore, concerns the ways to shield established linkages to ensure their long-term sustainability.

A comprehensive list of factors and enablers of connections between the research and policy communities can also be derived from the list of indicators of science-for-policy advisory ecosystem readiness provided

by the European Commission's JRC. This list ranges from the dominant policy approach (responsive or policy challenge-led), the investment in funding for research into evidence production and use, to, for instance, the presence of transparent mechanisms to solicit and engage with evidence and experts (see annex D).

In some instances, EU programmes were also essential, such as the PRIME network of excellence, which paved the way towards creating the Eu-SPRI community. The nature of research career incentives and rules in different countries is also a key determinant to promoting the engagement and 'embeddedness' of research in policy studies. The Science of Science and Innovation Policy (SciSIP) program established by the US National Science Foundation in the 2000s is also an exciting example of such programmes that supported the emergence of a community of policy-relevant researchers.

More recently, the GReaTr project aims to develop a new approach to analysis, policy support and capacity-building that addresses complex issues for interrelated communities of policymakers, academics and other stakeholders (Box 3).

Box 3. The GReaTr project: an interactive forum for exchange and co-development with policymakers on governing resilience and transformation

The GReaTr project (Governing Resilience and Transformation) was initiated in 2021 by the Lund University with support from Vinnova. The project aims to function as a forum for interactive knowledge generation and use with researchers, policy experts and policymakers. Its two main goals are: i) To provide a 'thinking space for policy', a hybrid between research and advice; ii) To generate knowledge and support its application in policy practice. In its first 2-year period, it mainly focused on two main issues:

- The medium-term effects of recovery and stimulus measures on innovation, transformation and resilience;
- The evaluation and design of transformative innovation policy. Project activities include cross-case and cross-country analyses, interactive forums for policy learning and capacity building (bringing together academics, policymakers and other stakeholders), and dissemination through policy briefs, research reports and conferences.

For instance, the May 3-4 2023 workshop in Malmö, Sweden, gathered around 30 experts from academia, government, think tanks, consulting firms and international organisations from Austria, Finland, Netherlands, Norway, Sweden, the OECD and the EU Commission. The workshop's objective was to reflect upon jointly and exchange experiences about supporting innovation policy's ability to contribute to transformation and resilience through analysis, exchange, interaction and learning in a time of perhaps unprecedented urgency and crisis. Some of the outputs of the discussions are very relevant to the linkages between researchers and policymakers in the face of mounting societal challenges.

Policymakers expressed what they would like to see more of concerning analysis and research, and their role in these:

- Analysing and describing empirics in the making (real-time empirics);
- Sensemaking and active/interactive observation particularly regarding "transformative innovation policy in the making" and the rapidly changing context (geopolitics, 'new' industrial policy, disruptive technologies, crises, changing political priorities, etc.)
- Reflexivity regarding how programs and instruments unfold. Policy makers need learning and capacity-building, advices, monitoring and finetuning and adapting along the way
- Looking at the "missions" already there including those driven by the industry, municipalities, etc.
- Increasing the relevance of research for decision-making processes, by e.g., greater appreciation of the premises and limitations of policy-making (e.g. regulatory constraints in the design of "missions")
- The "how-to" about connections to other policy areas (finance, regulatory instruments, etc.)
- Knowledge syntheses or overviews on relevant themes or topics, and translation in practical terms
- How do we drive transformation in and through policy, and transform policy as needed?

Workshop attendees jointly emphasised that to address these issues, there is a need to achieve better interactions between policymakers and knowledge providers (academia, experts, etc.). These interactions should be an integral part of the processes of policymaking and knowledge generation / analysis, to enhance mutual learning. This necessitates a dedicated infrastructure and base funding to support these interactions. Specific incentives are necessary to support researchers' synthesis, meta-analysis, diffusion and "translation" activities. Many factors drive these communities apart from each other, from the 'too many other things going on and more urgent things that need to get done' in policymaking to the prioritisation of 'getting out academic papers' in academia.

The two communities should, however, be aware of potential pitfalls and challenges related to this new interaction model. Researchers should maintain the 'right distance' to retain objectivity, avoiding capture or instrumentalisation.

Source: Lund University

In the absence of stable funding and space for such type of research, the academic career becomes the main opportunity for young researchers, who may be interested in focusing on research excellence *stricto sensu*, at the expense of policy relevance. As a result, some policymakers can only rely on knowledge produced in foreign contexts, which might only imperfectly fit the domestic policy context – or even be misleading.

When discussing specific examples, the important role of intermediaries and facilitators in administrations stands out. Because of their background (often former researchers) or particular interests, these key

persons are essential to translating and disseminating research results, mobilising the research community, and making the case for evidence-based policy decisions among their colleagues.

The nature and intensity of the linkages between the science and policy research communities are specific to each country and, even sometimes, organisations. This raises the issue of what can be achieved at EU level to strengthen these linkages.

Finally, the organisational culture plays an important role. While some policy bodies are somewhat 'introverted' and focused on responding to short-term issues, others are closely connected to relevant research communities. This is the case of the Swedish agency Vinnova, which sponsors various research projects and studies and participates in various research networks (TIPC, GreaTR, MOIN) or policy arenas (OECD, EC).

In Norway, the Research Council of Norway (RCN) conducts "simplified knowledge reviews" to consolidate information on a particular policy matter and communicate it to the appropriate decision-making groups. Though not exclusively used for research and innovation policy, this method provides valuable insights into the necessary collaboration between researchers, stakeholders, and policymakers (see Box 4).

Box 4. The Norwegian 'simplified knowledge reviews'

RCN has established a joint initiative with six ministries (in charge of justice, labour and integration, culture, climate, environment, agriculture, children and family) to support their policy decisions and reforms with state-of-the-art knowledge stemming from research. The so-called 'simplified knowledge reviews' build on the experience of systematic reviews, i.e., organised and structured synthesis of the academic state of the art of evidence and knowledge on what works and what does not on a particular topic. These were particularly used in the health area, for instance, to take stock of the results of RCT exercises performed in the context of clinical tests.

The Norwegian reviews are performed on topics jointly chosen by the ministries and RCN based on topical priorities and an assessment of the knowledge needed to support policymaking in these areas. Reviews have been performed on consumer policy, harassment, gender equality or child welfare, for instance. The reviews aim to synthesise what science has to say on the chosen topic, who is doing the research internationally and what is the specific contribution of the Norwegian research and expert communities. Each review is performed by a research organisation or specialised consultancy and lasts 6 months to one year. During this period, RCN closely interacts with the performing organisation.

The ministries have shown a growing interest in these reviews over time. To leverage their potential and improve their effectiveness, the partners have established a dedicated network that meets monthly, physically or virtually. The monthly seminars gather the policymakers and the research organisations to make sense of the reviews' results, discuss how they could be improved and, more generally, how to improve the cooperation between the research and policy communities. The network also holds an annual conference to enhance the interactions between policymakers and researchers on a specific topic (e.g., on Al in 2023).

Source: Information provided by RCN

Another example of 'embedded' policy body is the Generalitat de Catalunya. It is involved in TIPC, Eu-SPRI and has established a dedicated initiative to interact with researchers innovatively (Box 5). However, this cultural dimension is also tightly intertwined with the availability of research results and the presence of key gatekeepers in these organisations.

Box 5. Building bridges between Researchers and Policymakers for transformative research and innovation: the case of Catalonia's smart specialisation strategy

Catalonia is implementing one of the most innovative second-generation smart specialisation strategies. It adopts a systemic and transformative innovation policy approach. Its main focus is to articulate innovation shared agendas that guide the transformation of current socio-technical systems towards sustainability. Such an approach calls for a new type of collaboration between researchers and policymakers. This collaboration is built into the programme in different ways.

- 1. The secretariat that leads the initiative's implementation is regularly supported by experts in transformative innovation policy (INGENIO, TIPC), systems thinking, and data science to develop methodologies and tools and provide training.
- 2. A programme is set up to establish social and transformative innovation labs in universities and research centres, with dedicated funding from 2024-2029. As part of this programme coordinated by the Research and Universities Catalan Ministry, universities and research centres provide support to Shared Agendas promoted by local and regional actors. It encourages researchers to support the transformation of socio-technical systems to address local and regional challenges. The deployed strategies will be based on actions such as building new collaboration networks for innovation, supporting new business models, implementing technological and social experimentation to develop alternatives, engaging society in innovation processes, and supporting policy design.
- 3. Finally, the RIS3CAT 2030 learning and co-creation space aims to engage people from the research and policy communities in training in transformative innovation policy and systems thinking and working together on meaningful challenges for the people in the region. In the first phase, the training is focused on transformative innovation, systems practice and shared agendas; and on elaborating theories of change for the smart specialisation strategy. The main participants are representatives from the 12 Catalan universities and representatives from the Catalan Government, with support from INGENIO (TIPC) and experts in systems thinking and practice. The space will open to civil society and other key actors in a second phase to better understand the challenges and generate new collaboration networks for challenge-driven transformative collective action.

Source: Information provided by the Secretariat for Economic Affairs and European Funds of Catalonia

6. What are the options to strengthen the linkages between researchers and policymakers?

The last survey question solicited respondents to provide possible actions to strengthen their linkages to and impact on STI policymaking. The responses are clustered in broad groups and presented in Annex B. Many suggestions revolve around the need for new spaces and arenas for dialogue and mutual learning.

Interviews with policymakers and discussions held at the SAB sessions at the Eu-SPRI annual conferences suggest that these spaces should be:

- systematic and institutionalised, not one-off, to promote longer-term engagement that allows trustbuilding and mutual learning;
- iterative and interactive, policymakers must play a key role in defining the problem and agenda and
 the key milestones of the research, jointly with the researchers. The latter must be involved early
 in the policy process and follow its unfolding. Especially when it comes to transformative policy,
 they need to be engaged in policy in the making, through more frequent and shorter-term feedback
 loops as shown in Figure 2;
- structured, based on sound and co-developed analytical framework and shared semantic

- directed towards a concrete question. A policy dialogue is a means, not an end in itself, a common goal should drive the collective work.
- be based on successful past experiences

An insightful example is provided by the recent initiative launched by the Swedish agency Vinnova to create a new Interaction platform for research on system transformation. The call for tender includes a comprehensive list of expected features which together form the terms of reference of such interactive platform (Box 6).

Box 6. Sweden's new Interaction platform for research on system transformation

The Interaction platform for research on system transformation platform was initiated via a call for tender issued by Vinnova. The Agency's objective was to create an interaction space to 'bring together researchers, policy makers, and practitioners to facilitate the co-creation and building of knowledge, and the co-design of research action by arranging force-gathering activities in the form of knowledge dissemination (e.g., seminars, training, research synthesis) and facilitation of networks and collaborations'. One important product of the platform should be a research agenda on system transformation that the two communities would jointly implement. This research agenda was delineated in a pre-feasibility study, which was undertaken in 2023 by a group of Swedish researchers from Lund, Chalmers, KTH and Linköping universities and benefited from inputs and comments from other researchers and policy makers.

The platform, financed for three years (December 2023 - November 2026), is organised as an open network that links together actors from academia, practice, and policy spheres with an interest in system transformation and policy. This network (System Transformation Community), which forms the basis of the interaction platform, is coordinated through common interaction areas consisting of representatives from the various stakeholder groups.

Within the platform, several network-building interaction activities are arranged, such as joint workshops, policy dialogues, and the development of research agendas.

The platform has several expected features:

- Openness not a "closed" consortium of partners;
- Long-term horizons with dynamic evolution A long-term endeavour where the community and the common topic of interest coevolves;
- Coupling to "real-life empirics" systematic confrontation to and learning from the real cases of new interventions and governance mechanisms;
- Focus on mutual learning and knowledge enhancement of various stakeholders;
- Co-owned and collaboratively governed the Governance structures represent and involve the breadth of the community;
- Accountability and transparency of processes;

The platform has a dedicated twofold structure of governance structure composed of a Board and an operational Process Leadership Team, both composed of the representatives of the research, policy and societal communities.

Source: Vinnova (2023), Interaction platform for research on system transformation, Call for tender and Project database Fiche, https://www.vinnova.se/en/p/interaction-platform-for-research-on-system-transformation/; Lund university.

A platform created in 2016 and now well-established is the Transformative innovation policy consortium that uses specific experimentations to engage policy makers and policy researchers in a structured process to trigger system change and policy learning (Box 7).

Box 7. The Transformative Innovation Policy Consortium: building connections in policy experimentations

The Transformative Innovation Policy Consortium is a partnership of research institutions and Science, Research, and Innovation public bodies, created in 2016 to develop new knowledge and analytical frameworks on STI policies for achieving Sustainable Development Goals, run experiments to implement and evaluate these policies, and generate a global community of practice that applies and enhances transformative innovation policies.

The interaction between research and policy is at the core of the concept of transformative research developed and implemented by the Consortium: research informed by policy and policy informed by research. Such transformative research is 'co-created with practitioners, policymakers and other stakeholders so that interventions become informed by evidence, and developed through live implementation and experimentation'.

Linkages with the policy communities are established in the governance structure of the consortium. Currently, the governing members of TIPC are representatives from the Department of Science and Innovation, South Africa; the National Secretariat of Science, Technology and Innovation of the Republic of Panama; and Vinnova, the Swedish Agency of Innovation. A number of other national and regional public bodies are members of the consortium. Linked to TIPC are two Hubs involving academic and governmental bodies: one in Latin America and another one in Africa. A third one in Europe is under development.

Most importantly, the connections to policy practitioners are built 'in action' when the TIPC approach and tools are tested in real conditions. These experimentations consist of several stages of interactions, with different sets of actors and objectives. For instance, the cooperation with Vinnova on the evaluation of its food mission-oriented policy was undertaken in four stages during3 years: 1) Developing a preliminary theory of change (ToC) and selecting the transformative outcomes; 2) Developing the final ToC; 3) Building monitoring, evaluation and learning plan and 4) Closing down on main learnings and opening up on new endeavours. The main insights gleaned from the process are highlighted in terms of (1) understanding the expectations of actors; (2) what has been learned by doing, from a technical and organizational point of view; and (3) the constraints that emerged during the engagement.

Sources: Direct information from TIPC; TIPC website, https://tipconsortium.net/research/; and Boni, A., Velasco, D., Molas-Gallart, J., & Schot, J. (2023). Evaluating transformative innovation policy in a formative way: Insights from Vinnova's food mission experiment. Research Evaluation, 32(3), 577-590.

In a sense, these spaces and arenas should undertake the type of 'boundary work' advocated in Box 1, i.e. coordinating and managing in a structured way and iterative fashion the flows of inputs (theoretical/conceptual knowledge, evidence, values, perspectives, needs, professional experience, etc.) from the multiple actors involved in the process, with a clear recognition of the respective roles and drivers of these actors in the collective endeavour.

Researchers and policymakers agree that there is a need for a new type of policy platform to support their interactions and can sketch their generic principles. However, such platform's design and operational details remain to be developed. What activities should they undertake? How should they support new types of science-policy-society interaction? While these questions should be openly discussed in the context of Eu-SPRI, finding answers to these in concrete experimental initiatives is particularly important.

Box 8. An illustrative example of a demonstrator of policy dialogue between researchers, stakeholders and-policymakers

The SAB proposed a tentative list of options for action which were discussed with EuSPRI exco and presented at the SAB session of the 2022 Eu-SPRI annual conference. Building on these discussions and interactions among SAB members, it developed an illustrative example that integrate some of these options into one consistent initiative. The main thrust of this illustrative example is to establish a pilot science-policy dialogue arena on mission-oriented policies for societal challenges. This theme was selected because it corresponds to the conditions in which such approach is most needed (transformative policies dealing with complex systemic challenges) and is of common interest of SAB members. This illustrative example mainly consists of a staged process that organises and 'meshes' the various contributions of researchers and policymakers. A light governance structure (e.g., a mixed steering group) could ensure the arena's steering and monitoring, continuity, and information flows between the stages.

- 1. First meeting between selected motivated researchers and policymakers. This step aims to jointly define the key policy and research questions on mission-oriented policies;
- 2. Small-scale systematic review of the literature on Missions. A group of young researchers/ECRs thoroughly reviews the academic and grey literature on missions and draw/synthetise the lessons learned, particularly regarding the identified policy questions (and more generally all policy implications). These implications could take the form of lessons and conclusions for policy actions but also of remaining policy questions, challenges, and knowledge gaps. These implications are synthesised in draft fiches with a common structure:
- 3. Discussion and strengthening of the 'policy implications fiches' among ECRs, with facilitation and support by senior researchers. This step could take place in one of the Eu-SPRI ECR events;
- 4. Discussion of the policy implications between ECRs, senior researchers and selected policymakers—the stock-taking fiches are circulated among groups of policymakers that have declared their interest in specific policy issues and are willing to participate in the initiative.
- 5. A dedicated event hosts discussions among the ECRs, senior researchers and policymakers. Preferably some of the authors of the papers that have been analysed attend the event. The policymakers can ask questions about the implications, require additional information and react to the policy implications based on their experience. They can also add to the questions and challenges in the themes. The events include and test different types of interactive sessions that promote constructive dialogues and facilitate the cocreation process;
- 6. An event report, including the revised 'policy implications fiches', is drafted.

Building upon SAB results and internal discussions, the Eu-SPRI executive committee created in early 2023 a dedicated group to develop in cooperation with the Eu-SPRI community a demonstrator of policy dialogue ('P2D').

Source: SAB

Annex A. List of interviewees

Goran Marklund, Vinnova

Randi Sognen and Kristen Ulstein, Research Council Norway

Kai Husso, Finnish Ministry of Employment and the Economy

Matilde Villarroya Martinez, Catalonia's Ministry of Economy and Finance

Mark Walport, former UK Government Chief Scientific Adviser and Chief Executive of UKRI

Annex B. Survey responses to the open-text question on possible actions

The responses to the survey question 'What initiatives/activities supported by the EuSPRI research community could help strengthen its linkages to and impact on STI policy making?' are clustered below.

Mechanisms for increased policy relevance of research

- Better incentives for researchers to engage with real-world
- Formal connections with multilateral organisations to develop joint applied research agendas.
- Develop research agendas that are tied to policy agendas, and addressed with policymakers
- Involve policymakers in decisions around topics for future workshops, general conferences and exploratory initiatives
- To implement more down-to-earth talks with policymakers and engage with real-world problems...
- There is a need for a cultural change in the mentality of EuSPRI members we are still too willing to believe in the linear model of innovation when it comes to impact from their own research
- EuSPRI must continue to contribute to developing concepts, narratives and research that make
 these new approaches visible and understandable. A better understanding of futures literacy and
 the use of the future in both research and policy making may enrich this work.
- Prizes or similar to give incentives to researchers/policymakers collaboration

New spaces and fora for research-policy dialogues

- Start a dialogue between researchers and policymakers, involving civil servants and politicians;
- Coorganised STI-policy-workshops (e.g. with the OECD)
- Initiate a cooperative workshop series carried out by civil servants and researchers to teach researchers the language of civil servants and policymakers
- Provide forums for serious research-policy dialogue
- More specific policy fora, activities tying policy-makers and researchers.
- The institution of a researchers and policymakers forum to discuss/debate important issues emerging from research and practice
- Spaces events, virtual forums for co-creation
- Creating spaces to bring together relevant academics with interested policymakers on a tailored set of issues to build mutual understanding and networks (but let's not call it a school or training for policymakers!).
- Bring together national and regional level policy making / public administration bodies for knowledge exchange and co-developing approaches
- Eu-SPRI should create not only events / physical spaces for discussion, but also building long lasting relationships with policymakers

- Joint problem-oriented workshops, joint foresight exercises
- Regular (policy) stakeholder dialogues to discuss needs and emerging topics for impact.
- Platforms for exchange and mutual learning

Capacity and mutual understanding for dialogue

- Stimulate new forms of "intermediation", and a common language between policymakers and researchers
- Strengthen capacity on the policymakers side
- Train the next generation of STI policymakers
- Mixed classrooms with researchers and policymakers
- Promote/fund intermediaries who can act as 'translators'
- Promoting sectoral mobility between the science and policy sector
- Encourage research on the policy process so that researchers know how it happens and how they
 could be more effective in supporting policy decisions
- Open up engagement to people outside STI policy and for STI policy, offer short, online seminars on very specific topics with policy-academic twin presentation (EU SPRI practitioner seminars open to everyone)

Communication

- Build up a network with journalists, they are the ones in the best position to translate academic research into societal and political domains
- Establish a dedicated academic peer-reviewed journal and offer organizational and financial capacity to organize events
- Initiatives to make visible what is going on.
- Special issues in journals

Annex C. Swedish stakeholders' motivations for and challenges with an interaction platform

Table 1. Motivations and interests for an interaction platform

Researchers	Policy practitioners	
Enhancing research excellence Facilitated access to data and policy processes for empirical research Possibility to develop own knowledge and competences on policy practices Financing of research projects Visibility of the research topic, both nationally and internationally Linking research with societal impact Improved policy relevance of research through insights into current and relevant policy problems/needs Create a space for testing new models and tools in real policy practices Facilitate nationwide learning, exchange of experiences, and distribution of research results Facilitate new collaborations and networks between researchers and practitioners Contribute to policy processes in real time (instead of ex post recommendations)	Accessing and translating latest knowledge Mutual learning and building common understanding, terminology and practice across stakeholders in Sweden Focus on learning, moving from theory to practice (absorption and application in practice) More interactive forms of learning, experience exchange and knowledge development across organisations and actor groups Use of ongoing/real-life empirical cases (in Sweden and internationally) A learning community that can spread knowledge and capacity Linking "state of the art" knowledge with policy design/implementation more quickly Accelerate knowledge-building on how system innovation works/doesn't work Have a better overview and ability to "synch" policy interventions (different funders/agencies and levels) Strategic linkages and launch of new research	

Source: Grillitsch, M. and Wise, E. (2023). Final Report Swedish platform for System Innovation Research in Interaction Feasibility Study (Vinnova project 2023-02014), October 2023

Table 2. Perceived challenges with an interaction platform

Researchers	Policy practitioners	
Challenges in relation to the interaction between researchers and policymakers	Challenges in relation to the interaction between researchers and policy practitioners	
 Responsibility & ownership from both researchers and policy makers 	 Balancing perspectives and roles (both stakeholder groups) 	
Resources & time dedicated to interaction from both researchers and policymakers	Identifying relevant IRL "cases" that can be used for learning and experimentation	

- Potential mismatch between the needs of policy practitioners and researchers about timing, planning horizons etc.
- Building collaborations takes time needs longterm commitment/funding
- Coordination between different policymakers/funders of the platform

Challenges concerning the organization of such a platform

- Potential administrative burden
- Risk of "capture" by platform coordinator
- Vague understanding of the goals and aims of such platforms
- Unclarity about processes and routines (e.g., who can be a part of the platform, what does this entail (rights and responsibilities), how to join)
- Lack of knowledge about/coordination with other platforms/initiatives

- Involving various perspectives while avoiding "not made here"
- Managing learning processes that are interactive and iterative/experimental over (longer periods of) time

Challenges in relation to the content and organization of such a platform

- Ensuring a clear USP and "who does what"
- Ensuring openness and dynamism (not a limited group) and development of the community over the long-term
- Mobilising engagement (and resource commitments) from many
- · Ensuring legitimacy and relevance
- Identifying the appropriate empirical scope to start and build from (topics, modes of interaction, stakeholders engaged)

Source: Grillitsch, M. and Wise, E. (2023). Final Report Swedish platform for System Innovation Research in Interaction Feasibility Study (Vinnova project 2023-02014), October 2023

Annex D. Indicators of science-for-policy advisory ecosystem readiness

Type of actor	Possible indicators
Funders	— Engage regularly and effectively with the research communities and with relevant policy teams to support policy-relevant research through shared problem-framing
	— Offer appropriate training and capacity building to research organisations and teams, who include support staff
	Dedicated research funding for research into evidence production and use
	Balance between responsive and policy challenge-led research funding
Research organisations	— Support diverse and skilled research workforce by offering appropriate degree and other training and capacity-building support
	Reward and recognise policy-relevant research and engagement activities to policy
Researchers	Appropriately skilled and diverse workforce
	— Produce interesting and novel research, or relevant syntheses
	Routinely engage with evidence users as a legitimate part of their work
Intermediaries	— Have skilled workforce able to synthesise and mobilise evidence in range of ways, network,
	and support and advocate for evidence use
	- Recognised and resourced specialist units or organisations dedicated to knowledge
	exchange
Policymakers	— Support shared problem-framing and deliberation between policymakers and stakeholders — Clearly stated knowledge needs
. Gioyinakoio	— Capabilities within government to assess and absorb evidence of different kinds
	Transparent mechanisms to solicit and engage with evidence and experts
	Internal reflection and scrutiny of advisory systems
Parliament, media	Existence of, and mandate for independent, evidence-capable body(ies) to scrutinise
and other scrutiny	science-for-policy system and its elements, and hold to account
bodies	— Science and evidence capabilities for general scrutiny of evidence use in policy-making at
	national, regional and local levels

Source: Oliver, K. (2022), Assessing national institutional capacity for evidence-informed policymaking: the role of a science-for-policy system, Krieger, K. and Melchor, L. (editors), Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-53653-6, doi:10.2760/951556.