Shared challenges, transformative actions

OECD Science and Technology Policy Ministerial

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Issues Notes

BETTER POLICIES FOR BETTER LIVES

Contents

Breakout C – How to ensure policy alignment across government to facilitate transitions through science, technology, and innovation?

24 April 2024, 11:45-13:00 Paris time, OECD Conference Centre, Group 1 Room CC7 and Group 2 CC4

Group 1 chaired by: Mr. Oddmund Løkensgard Hoel, Minister of Research and Higher Education, Norway

Group 2 chaired by: Chair: Mr Juan Cruz Cigudosa, State Secretary for Science, Innovation and Universities, Spain

Key issues

- Achieving sustainability transitions requires sharing information, aligning plans toward common goals and implementing joint actions extending well beyond the science, technology, and innovation (STI) area and between different levels of government. For instance, developing and deploying clean hydrogen on a large scale – vital for meeting net-zero goals in transportation and industry – demands coherent interventions and possibly cooperation of national and subnational authorities in charge of research and innovation (advanced technologies), infrastructure (distribution and storage of hydrogen), education (skills of electrolysers' engineers), transport and industry (regulations and incentives).
- However, many silos exist in most countries between organisations pertaining to different policy sectors and disciplines. While specialisation and the resulting fragmentation have enabled the efficient management of individual components of complex systems, it limits the ability of governments to agree on common agendas, pool resources, and undertake the needed collective actions to realise them. To overcome this challenge, enhanced coordination is crucial not only between research and innovation policies in various sectors but also between these policies and other policy areas, such as skills, tax and welfare policies. Furthermore, as new generations of greener technologies become available, the scope of coordination needs to also encompass instruments and incentives for scale-up and deployment (including regulations and price-based mechanisms to encourage investing in low-carbon technologies).
- While decentralisation of STI and industrial policies is not new, the growing importance of experimentation, demonstration, scale up and deployment of new technologies gives a more prominent role to regional, local and city authorities in sustainability transitions. In connection to national authorities, they are particularly well equipped to mobilise the relevant ecosystems of public and private actors and support their activities in agile ways. This is especially true in federal countries but is increasingly critical in all countries, regardless of their governance structure. Despite efforts to ensure synergies across levels of government, several administrative and political barriers exist between them. In Europe, the process of decentralisation and devolution to lower political and administrative levels has been concurrent with a shift of research and innovation policies from the national to the EU level, making multi-level coordination even more challenging. As regions are also moving from policies focused on knowledge transfer, clusters and commercialisation towards more systemic policies to address specific challenges, this runs the risk of multiplication of ecosystem or mission-based policies at different levels, addressing related challenges.

- Various governance arrangements have emerged over the years to improve the overall coherence of policies, programs and instruments across government departments and agencies beyond the STI area and across different levels of government to support sustainability transitions. These include, for instance, shared national visions, roadmaps, transition funds, joint programming initiatives, strategic oversight, and coordination by high-level cross-departmental committees and the centre of government. Various types of Mission Oriented Innovation Policies (MOIPs) involving national and local authorities are also experimented in different countries and areas to address complex societal challenges that are beyond the reach of any individual policies.
- However, cross-government and multi-level coordination initiatives encounter numerous challenges. Notably, they can blur lines of leadership and accountability among various organisations within institutional contexts and funding frameworks that often do not readily embrace shared power. Additionally, negotiations and interactions between these partners across borders and at different levels of governance tend to amplify the complexity and transaction costs associated with policy-making. Finally, securing high-level political leadership - essential for ensuring the necessary legitimacy and support for a proactive whole-of-government approach that spans policy sectors and government levels - often proves challenging in the medium to long term due to election cycles.

Agenda

Intervention	Duration
Opening remarks by Chair	5’
No set order – Heads of Delegation participating in this session raise their flag as they wish to intervene, and the Chair will give HoDs the floor in the order in which they register interventions.	3’ per Delegation
Concluding remarks from other Breakout rooms	2’ per Delegation
Closing remarks from Chair	3’

Key directions for policy

The OECD has drawn attention to the importance of several policy measures in this domain. These include actions that aim to:

- Actively co-ordinate and align priorities and interventions across government.
- Promote consistency of policy actions across levels of government.
- Harmonise government infrastructure and procedures to improve knowledge sharing and co-operation.
- Streamline complex governance arrangements.

Key questions for discussion (Group 1 - Focus on Horizontal coordination)

- What can policymakers learn from the various cross-government coordination initiatives implemented in STI and beyond to support sustainability transitions?

- How can the OECD best assist member countries in designing and implementing cross-government coherence to help advance sustainability transitions?
- How can mission-oriented innovation policies move beyond primarily supporting research and innovation to include policy interventions led by other policy domains to enable sustainability transitions ?

Key questions for discussion (Group 2 - Focus on Vertical coordination)

- What can policymakers learn from the various multi-level coordination initiatives implemented in STI and beyond to support sustainability transitions?
- How can the OECD best assist member countries in designing and implementing multi-level coherence to help advance sustainability transitions?
- What strategies and mechanisms are governments employing to promote coordination across multiple levels of government (e.g. local, regional, national and international) to support sustainability transitions?

Background

Cross-government coordination is a key issue in many policy areas

Achieving sustainability transitions will require whole-of-government coordination and overall policy coherence. Concepts relating to whole-of-government coherence have already made their way into established frameworks, such as the UN 2030 Agenda, which includes a Policy Coherence Target in its monitoring framework. The European Commission promotes a whole-of-government approach for implementing the UN 2030 Agenda and the Sustainable Development Goals. In the health area, the World Health Organization requires member states to have multi-sector and multi-partner coordination mechanisms in place as one of the key pillars of their national preparedness and response plans to future pandemics. Many governments established cross-government bodies, mechanisms, programmes and platforms to respond to the COVID-19 pandemic (OECD, 2020a[1]). These have further legitimised whole-of-government policy approaches and provided important lessons for the future.

Nevertheless, and although the history of cross-government coordination goes back a long way, examples of whole-of-government coordination are rare, and are normally limited to severe crisis, situations such as wars or pandemics (European Commission, 2023[3]; OECD, 2020a[2]).

Cross-government coordination is not new to STI

Cross-government coordination is a long-standing challenge in national innovation systems, as shown in early OECD Innovation Policy Reviews. Already in 1966, for instance, the French OECD Review (Review of National Science Policy at the time) emphasised that any reform would have only limited effect if science policy does not join with industrial and economic policies and is not “planned from an overall point of view” to “fit into its place in the country's general policy” (OECD, 1966[3]).

About 20 years ago, the OECD's influential work on National Innovation Systems put the emphasis on governance as a determining factor of their economic impact. Governance was deemed so important that the follow-up project – MONIT (2002-2005) – focused on generating knowledge on how to improve governance structures and processes that would adequately respond to the ‘increasing need for more coherent innovation policy agendas spanning ministerial boundaries’ (OECD, 2005[4]). At that stage, efforts put into improving holistic coordination were focused on supporting innovation-oriented and dynamic

economic systems since global and societal challenges were far less pressing at that time After decades of dominance of what were termed New Public Management approaches, that period was characterised by an escalation of specific policy instruments designed to address distinct market failures, such as underinvestment in R&D, or the lack of robust collaboration between research institutions and industry.

Since the mid-2010s, the urgency around climate issues has led to a policy shift, moving from a fragmented approach, marked by 'sectorisation,' to a more integrated and cohesive strategy of governance.

The traditional rationales for cross-government coordination

Central to the emergence and eventual success of policy coherence is achieving economies of scale and scope, crucial when deploying increasingly costly large-scale STI solutions. Effective coordination not only helps to prevent spreading resources too thinly, it also helps to minimise duplication, missed opportunities, and economic inefficiencies that hinder transformational efforts. Effective coordination facilitates risk sharing in high-cost ventures, such as major infrastructure projects, encouraging investment in innovative and potentially transformative initiatives.

Cross-government coordination can be important in different stages of policy cycle. It facilitates collective agenda setting, essential for later joint actions. This process involves developing and implementing cross-sectoral strategic agendas. During the programming phase, coordination helps to align plans across various committees and innovation systems, each with distinct scopes, mandates, and powers. Coordination also helps to reduce harmful competition and budget conflicts while enhancing transparency and access to funding opportunities. Finally, it enables the integration of various policy instruments in the process of policy implementation.

Coordination of implementation involves measures that can range from one-off joint calls for proposals to extensive cross-ministerial programmes or agency schemes. Such coordination is particularly important for managing interdependencies between policies, for instance to reduce contradictions and avoid mixed messages. Coordination processes can also simplify the policy landscape, for example, by creating unified platforms for different services.

The call for a new governance model to support sustainable transitions

Building on the work around transformative policies, the call for new governance models is made even stronger if the intention is to respond to societal challenges that are systemic in nature and, therefore, beyond the reach of any single policy body. Three generations of STI governance can be distinguished (Arnold and Barker, 2022[5]). The first generation relied on a science-push approach with a strong delegation of research governance to the scientific community via researcher-governed councils or national science foundations. Second-generation governance focused more on establishing linkages between the public authorities in charge of research and those in charge of innovation in order to generate economic impacts. While this is still an issue in many countries, third-generation governance adds to the challenge by requiring coordination with sectoral authorities. This is considered necessary to deal with multiple components of the deployment at scale of innovative solutions: infrastructures, regulations, economic incentives, skills, etc. A much more systemic approach is needed to entice these different areas to pursue common (or at least compatible) goals and ensure the consistency of their interventions.

The third-generation of STI policy governance comes with many implications (Arnold and Barker, 2022[5]). It requires that different priorities are balanced and directed towards addressing societal challenges, which demands a certain degree of consensus among different players in the system. These challenges cut across multiple and interrelated sectors, such as energy, transport, and agriculture, which bring additional complexities for governance. Therefore, STI policy needs to be co-ordinated with other policy domains, such as traditional economic and industrial policies, but also with climate and other sectoral policies, to

accelerate scaling-up and adoption to address societal challenges. At the same time, these sectors are also set up around established networks and practices that support the continuation of current innovation trajectories, for instance around fossil fuels. Consequently, policies targeting the phase-out of these established networks and practices will also need to be included in the policy mix.

While policy mixes will be designed and implemented beyond STI ministries and agencies' responsibilities, the degree of co-ordination will vary depending on the specific country context. Some governments are small, which can facilitate communication between different levels. Others have a high degree of local and regional autonomy, which can demand additional co-ordination efforts (OECD, 2023a[6]). While previous STI policy governance structures (structured around education, research, and industry ministries) (Arnold et al., 2023[7]) are well established, third-generation governance will also require experimentation with new STI policy instruments and structures.

Mission oriented innovation policies as a new type of STI governance

Mission Oriented Innovation Policies (MOIPs) represent one of the most analytically developed approaches to support STI cross-government co-ordination. In this regard, MOIP offers a strategic focus to support the co-ordination of relevant actors to address collectively selected challenges. Holistic governance lies at the core of the different variants of this approach, which, in many cases, consists of adding a layer of steering and coordination on top of existing interventions. In Norway, for instance, a country where many sectoral ministries and their agencies have responsibility for their own STI policy, three agencies have since 2016 gathered their respective instruments to fast-track the development, testing and deployment of new green energy solutions in a single integrated scheme (Pilot-E). In France, the 'Investments for the Future' programme (PIA), initiated in 2010, was redesigned in 2020 to focus on specific technology areas through integrated support across all stages of the innovation chain, from exploratory research to market deployment. Each of these so-called 'acceleration strategies' has its own strategic agenda, budget and governance structure, with a dedicated inter-ministerial co-ordinator. In the United States, several relevant programmes and agency schemes were integrated into 'Energy Earthshots'. These are 'all-R&D-community' initiatives with clear time-bound targets to address complex challenges such as affordable grid storage for clean power and low-cost clean hydrogen.

It is important to learn more about how MOIPs can contribute to resolving complex societal challenges requiring cross-government coordination. Each MOIP initiative has its own structure of governance that is adapted to its specific needs and characteristics. Some initiatives, especially in the case of the largest mission policy frameworks, such as the Dutch 'Top Sectors and Mission Driven Policy', involve a variety of 'nested' multi-level governance bodies for the initiative as a whole and for each mission. This is done to help make strategic, programming, and operational decisions that are consistent across all the public (and sometimes private) actors involved (Larrue, 2021[8]).

A study of MOIPs implemented to reduce GHG emissions shows that while they often allow for a wider and more consistent range of activities, from basic research to deployment, capacity-building, and advocacy, they remain too focused on technological innovation and are mostly led and financed by STI authorities. This finding raises the fundamental question of how far cross-sectoral governance can span across government, starting from and building on the leadership of STI authorities. This intrinsic limitation might call in some instances for different governance models where missions are anchored in centre-of-government bodies or directly in cross-governmental bodies (OECD, 2023b[9]). The experience with MOIPs also demonstrates the crucial role of highly motivated and skilled policy makers, most often in the STI area, in establishing the first 'coalition of the willing', upon which coordination can build and expand.

Finally, the multiplication of coordination bodies at different levels (mission policy initiative, mission, specific instrument) in these nested initiatives can also generate "mission fatigue" and increase the complexity and rigidities of these elaborate governance structures.

Challenges of cross-government coordination

Holistic coordination is underpinned by a myriad of factors, including but not limited to essential capabilities and skills, enabling mindsets, and the prevalence of conducive incentives. In this context, the influence of national institutional settings on the efficacy of cross-government coordination cannot be overstated. As delineated by the World Bank (Beschel et al., 2018[10]), coordination does not operate in isolation but is deeply embedded within the broader societal context.

Political, institutional, and social context significantly affects cross-government coordination. The diversity of governmental structures, decision-making hierarchies, and leadership styles must be considered in order to ensure policy legitimacy and effectiveness. Having shared national visions further facilitates coordination and legitimation.

Struggles over political turf (especially in countries where governments are based on a coalition), and short-termism, hinder cross-government coordination. In such circumstances, the costs of coordination manifest themselves more rapidly than the benefits. Cross-government coordination also has a more technical dimension, notably via IT systems for knowledge management, funding, monitoring and accountability.

System-wide evaluations play a crucial role in understanding the challenges and added value of cross-government co-ordination, policy portfolios' impacts, facilitating the diffusion of results and lessons across government departments (OECD, 2020b[11]).

Future policy directions: optimising coordination

The imperative of improving coordination across policy domains needs to be reflected in all governance and policy reforms so that it is systematically embedded in the structures of national innovation systems at different levels (from the strategic to the most operational levels). One can already witness such a trend in some countries that have undertaken significant reforms of their governance structures, notably by reshuffling ministries and/or agencies through mergers and alliances, creating, for instance, ‘super’ ministries (e.g., Austria’s Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)) or agencies (e.g., Slovenia’s Research and Innovation Agency (ARIS)). Overarching committees and programmes have also been created, such as the UK’s Climate Adaptation Research and Innovation Board (CARIB) and the Net Zero Research and Innovation Framework 2022-25 (Net Zero Innovation Board, 2021[12]). A holistic approach can also be found mainstreamed in procedural instruments such as new cross-government financial (e.g., central ‘transition’ funds) and accountability mechanisms (e.g., budget ‘green tagging’).

However, cross-government coordination can also have downsides. These can include increased transaction costs and procedural complexity, rigidity in responding to emerging events and turbulence, slowing in the pace of action, missing leadership, dilution of priorities as part of a search for consensus, and blurred accountability. Despite the very positive tone of the academic literature regarding coordination, the experience, for instance, in some of the MOIPs that have deployed a fully systemic approach, such as the Dutch Top Sectors and Mission-Driven Policy, shows that when it comes to coordination, more is not always better.

This calls for a more nuanced and strategic approach, grounded in an ex-ante assessment of interdependencies and needed exchange of information, as well as plans for alignment and joint actions. A continuum of means of cross-ministerial coordination of increasing intensity exists to respond to the specific needs of each configuration (Metcalfe, 1994[13]) (Beschel et al., 2018[10]) It ranges from independent decision-making by ministries/agencies to, for instance, arbitration of policy differences and, finally, government strategy.

In summary, there are four main areas that need to be addressed to improve cross-government and policy coherence around STI:

- **Actively co-ordinate and align priorities and interventions across sectors of government**: The fragmentation of state structures, often divided between government agencies with sometimes ambiguous mandates and sectoral ministries with different interests and priorities, can hinder the ability of governments to deliver the sorts of cross-cutting priorities and interventions called for sustainability transitions. A range of mechanisms can be deployed to cope with fragmentation, including open methods of co-ordination, joint programming, and data and information sharing across government bodies at different levels.
- **Promote consistency of policy actions across levels of government**: STI policies are designed and implemented at multiple levels of government, with different traditions and path dependencies. This raises challenges for vertical co-ordination, especially in countries with federal systems, whereby central governments need to find ways to direct the system as a whole. A range of tools can be used to promote vertical co-ordination to support transformative change, for example by promoting effective public investment across levels of government, mapping responsibilities and stakeholders, and ensuring consistency in the policy mix.
- **Harmonise government infrastructure and procedure to improve knowledge sharing and cooperation:** Government bodies are often constrained by their own rules, procedures, and disconnected internal infrastructures when pursuing joint actions. One way to address this is to enable data and information sharing by promoting co-operation between different governance levels to identify cross-cutting regulatory and operational issues and ensure coherence between approaches. Policymakers can also ensure that Open Government campaigns are advanced based on an institution-wide data governance strategy.
- **Streamline complex governance arrangements:** Complex governance arrangements can lead to the dilution or agglomeration of priorities, lack of leadership and blurred accountability. New governance arrangements should be based on a clear mapping of interdependencies to understand what types of channels of interaction and joint actions are needed to deal with specific challenges. These policy directions call for a nuanced and strategic approach to co-ordination, which will also demand new skills, mindsets, and incentives in administrations to promote and support cross-government co-ordination.

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