

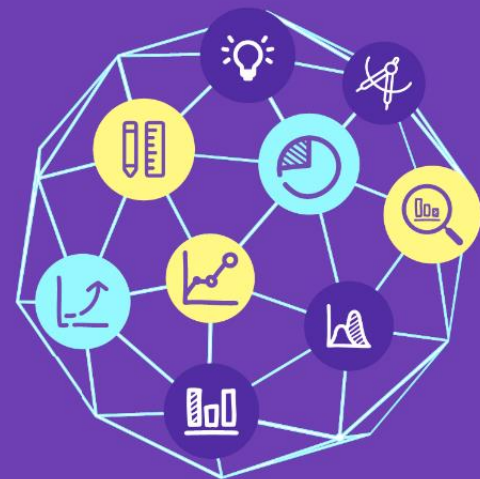


European
Commission

Building capacity for evidence-informed policymaking in governance and public administration in a post-pandemic Europe

*Final integrated
country report*

Estonia



Joint
Research
Centre

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List of abbreviations and definitions

Glossary

BO	Beneficiary Organisation
CENTAR	Estonian Center for Applied Research / Eesti Rakendusuringute Keskus CentAR
DSG	Deputy Secretary General (<i>Asekantsler</i>)
EIPM	Evidence-informed policymaking
ESF	European Social Fund
ETA	Estonian Academy of Sciences / Eesti Teaduste Akadeemia
ETAG	Estonian Research Council (<i>Eesti Teadusagentuur</i>)
ETIS	Estonian Research Information System (<i>Eesti Teadusinfosüsteem</i>)
EYAS	Estonian Young Academy of Sciences / Eesti Noorte Teaduste Akadeemia
FC	Foresight Centre / Arenguseire Keskus
GO	Government Office (<i>Riigikantselei</i>)
HTM	Ministry of Education and Research (<i>Haridus- ja teadusministeerium</i>)
IA	Impact analysis
JRC	Joint Research Center of the European Commission
MKM	Ministry of Economic Affairs and Communications (<i>Majandus- ja kommunikatsiooniministeerium</i>)
MOF	Ministry of Foreign Affairs
MPs	Members of the parliament
NAGAR	Needs and Gaps Assessment Report
	<i>Note: As of the end of September 2024 this act has not been passed at the Estonian Parliament (Riigikogu) and TAKS - Organisation of Research and Development Act (Teadus- ja arendustegevuse korralduse seadus) is in force.</i>
OECD	Organisation for Economic Co-operation and Development
PRAXIS	Praxis Centre for Policy Studies Foundation / Sihtasutus Poliitikauuringute Keskus Praxis
R&D	Research and development
RC	Rectors' Conference / Rektorate Nõukogu
RDI	Research, development and innovation.
RIA	Regulatory impact analysis
RITA	Programme supported by the European Regional Development Fund that aims to increase the role of the state in the strategic managing of research and the capabilities of R&D institutions in carrying out socially relevant research. In the framework of the programme, ETAG provides funding to socio-economical applied research based on the needs of the state https://etag.ee/en/funding/programmes/rita/ . The acronym stands for <i>Rligi TA programm</i> , in Estonian.
S4P	Science for policy
SA	Science advisor
SAB	Science advisory body
SE	Statistics Estonia / Eesti Statistika(amet)
SekMo	Cross-sectorial Mobility Measure programme / <i>Sektoritevahelise mobiilsuse toetusmeede</i>
SG	Secretary-General

TAI KK	R&D Coordination Council (<i>Teadus- ja arendustegevuse ning innovatsiooni koordineerimiskogu</i>)
TAI	Research, Development and Innovation Coordination Body / <i>Teadus- ja arendustegevuse ning innovatsiooni koordineerimiskogu</i>
TAIKS	Organisation of Research, Development and Innovation Act (<i>Teadus- ja arendustegevuse ning innovatsiooni korralduse seadus</i>).
TAKS	Organisation of Research and Development Act / <i>Teadus- ja arendustegevuse korralduse seadus</i>
TalTech	Tallinn University of Technology / Tallinna Tehnikaülikool
TAN	Research and Development Council (<i>Teadus- ja Arendusnõukogu</i>)
TLU	Tallinn University / Tallinna Ülikool
TOC	Theory of Constraint
ToT	Training-of-Trainers programme of the JRC about how to maximise impact of science in policymaking
UNDP	United Nations Development Programme
UT	Tartu University / Tartu Ülikool

Estimation of implementation timeframe and resource intensity

Timeframe

Note: This describes the time needed to implement the recommendation – starting whenever it is deemed feasible. It does not prescribe a specific starting or completion moment.

- A. Short-term - *possible to implement in approx. one year (possibly already started)*
- B. Mid-term – *possible to be implemented in 2-3 years*
- C. Long term - *implementation may take more than 3 years*

Resource intensity

- A. Low - *could be implemented with the existing human/financial resources.*
- B. Moderate - *needs additional human/financial resources*
- C. High - *needs substantial additional human/financial resources*

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1 Executive summary

The project "*Building capacity for evidence informed policymaking (EIPM) in governance and public administration in post-pandemic Europe*" supported seven European Union (EU) member states (Estonia, Belgium, the Czech Republic, Greece, Lithuania, Latvia and the Netherlands) in building capacity to improve the effectiveness of their public administrations, through **greater capacity for supply and uptake of scientific knowledge, evaluation, and evidence in policymaking**. The expected long-term impact of this project is the reinforced institutional integration of the use of evidence, science and evaluation for policymaking.

This report presents the results of the **joint work of approximately 100 people from Estonia's public sector** who participated in survey, numerous interviews, focus groups and workshop during 2023–2024. The final country report consists of three main parts in chronological order of the work: the diagnostic report (chapter 4), the needs and gaps assessment report (chapter 5) and the roadmap (chapter 6). Each preceding chapter is integral to the subsequent one; thus, the **roadmap chapter is of particular significance**, as it presents a detailed plan **for implementing change**. All chapters focus on the supply and demand side of the Estonian EIPM system as well as the brokerage level where supply and demand meet. The term 'supply side' refers to organizations supplying the evidence to be used in policy processes. 'Demand' refers to those using evidence and scientific knowledge in their policy processes.

The **diagnostic report (chapter 4)** reflects the current state of EIPM in Estonia based on empirical data gathered during summer 2023. Among the Estonian government actors, there is a clear understanding that strengthening the capacity for EIPM is a necessary aspect of successful policymaking. This is also reflected in the assessment of the Estonian Science and Research "ecosystem" in which we see that the **main EIPM institutions, structures and systems are already in place in Estonia**, but their implementation and ability to influence political decision-making sometimes seems limited. **Strengthening of mandates and priorities is required** in order to develop the EIPM system to its maximum capability. Introducing science advisers into the ministries and the Government Office must be seen as a great success and a correct step in furthering the capacities for EIPM. However, the advisers' role and the overarching framework, content and role of "science advice" have not been properly standardised. Furthermore, **science advisers lack a specific mandate** to more freely have control over research funds and to be able to funnel advice directly to ministerial and political leadership. On most levels of government, there is a great willingness to collect and listen to scientific advice before making a decision. Unfortunately, **the knowledge of how to engage with science advice is unevenly spread** making it difficult to engage with long-term problems. Another hurdle next to the availability of funds (the **state budget process does not support research procurement**) is the strict procurement regulations that constrain the timeframe and the funding and, hence, mismatch the expectations of governmental actors and researchers. Another hurdle is the lack of incentives for science for policy in career models of academics. Furthermore, career scientists struggle in the adviser role when engaging with policymakers as it is **difficult to distinguish between the roles of adviser, lobbyist, and researcher**. When it comes to the impact assessment of policies the government invests most of its efforts into ex-ante assessment, but a **formalized ex post assessment is largely missing**. Similarly, the lack of data literacy outside of specialized ministerial units needs to be addressed. At the same time, **there are many informal networks that strengthen the knowledge exchange and chip at administrative silos**. However, they are not formalized and often depend on single leaders leading the initiative. There are also innovative government solutions (e.g., Foresight Centre, Innovation Team) that bolster the knowledge and capacity of the government, but their full potential is yet to be fully harnessed.

The **needs and gaps assessment report (chapter 5)** focuses on the **capability and political will to include evidence in policymaking**. This chapter engages with this problem in five different areas, roughly corresponding with the topics of discussion of five focus group conducted during November-December 2023: (i) the need to increase the influence and legitimacy of science advisers and science advice networks; (ii) the lack of incentives and structures for the scientific community to engage in policy advice; (iii) the underrepresentation of Strategic Foresight (SF) practices across the government; (iv) the disregard of innovative policymaking in light of standard approaches; and (v) deficiency in understanding knowledge needs and access to support services in government ministries. This executive summary highlights five major recommendations that rely on **higher inter-organisational cooperation, an increased will to use the existing ecosystem and means more effectively**. The recommendations are listed hierarchically according to their potential to impact on the Estonian S4P ecosystem: **(1) Ensuring clarity of advisory bodies and a political mandate**. The TAI koordinatsioonikogu (*Research, development and innovation coordination body*) needs to receive the mandate to fulfil the strategic role of coordinating research activities across the government and the ministries and can be used to provide clarity

about the purpose of each committee, council or network of science advisers; **(2) Developing a career model for science advisers** as well as to create a training programme and a code of conduct or guidelines for science advisers that increase their competences and the ministries awareness of the role and model their expectations, respectively; **(3) Establishing the use of SF methodology as a requirement** in public sector when preparing strategic plans in ministries; **(4) Providing better support and incentives for the scientific community** to play a role in the S4P ecosystem and **(5) Direct more attention to the support services of the EIPM at each ministry** to better understand knowledge needs and funding stream options better. Chapter 5 provides a detailed overview of the problems and recommendations outlined above with added international good practices.

The **roadmap (chapter 6)** contains **concrete recommendations** based on the previous two chapters. The following table presents an overview of the actions that these and other key actors can take to enhance EIPM, outlining the 20 recommendations presented in the roadmap. It is important to note that the 20 recommendations, although generally accepted and adopted by the coordination group of beneficiaries of this project, will need to be elaborated further by the main institutions responsible. Many of the actions are interlinked and implementing them requires process management rather than project management.

Priority areas	Recommendations	Responsibility
		<i>Lead actors</i> <i>Involved actors</i>
1. Strengthen whole-of-government evidence-informed policymaking	1.1 Reform TAI KK into a cross-ministerial science advice coordination body	GO, HTM , line ministries
	1.2 Establish common areas of research interest to support the goals of Estonia 2035	HTM , Line ministries, GO , ETAG, TAI KK
	1.3 Establish a strategic cross-ministerial research funding program	HTM , GO , ETAG
	1.4 Establish a centralized database that includes government funded research and analyses	HTM , ETAG
	1.5 Bring EIPM as a strategically important issue to the agenda of Cabinet meetings of the government of Estonia	HTM , GO , TAI KK, ETAG, SA network
2. Strengthen the role and status of science advisers in policymaking	2.1 Develop a job profile and code of conduct for science advisers and raise their position in the ministerial hierarchy	TAI KK , HTM , ETAG, GO , line ministries, SA network
	2.2 Encourage regular interaction between science advisers and strategy advisers	GO , Line ministries
	2.3 Strengthen the science adviser network and raise expertise of science advisers	ETAG , SA network
	2.4 Create scientific advisory bodies in line ministries	Line ministries , TAI KK , SA network
3. Increase capacity of line ministries to	3.1 Include academic qualifications into the job requirements for top and mid-level	Line ministries , GO , Ministry of Finance

absorb evidence-informed advice	managers in ministries and for those working on policy analysis and evaluation	
	3.2 Support public servants to obtain Master's and PhD degrees	Line ministries , universities
	3.3 Strengthen capacity for evidence-informed policymaking among analysts and managers within ministries	Line ministries , GO, Ministry of Finance, ETAG
	3.4 Create better bridges between ministries and knowledge suppliers	Line ministries , HTM, universities, ETAG
	3.5 Ensure access of public servants to academic databases	HTM , line ministries
	3.6 Improve data sharing practices and infrastructure between ministries	MKM, Statistics Estonia , line ministries, GO
	3.7 Build foresight capacity among analysts, senior leadership, and the government system	GO, Foresight Centre , Line ministries
	3.8 Revise procurement practices for R&D	HTM, ETAG, Riigi Tugiteenuste Keskus , MKM/EIS, line ministries
4. Increase the capacity and incentives of the scientific community to provide policy-relevant research	4.1 Encourage working contacts between knowledge suppliers, ministries and ETAG	Universities , Rectors Conference line ministries, SA network, ETAG
	4.2 Reward policy advice at universities	Universities , Rectors Conference, HTM
	4.3 Educate researchers and university managers on policy advice	Universities, ETAG

2 Executive highlights: preparing public administration for a complex future: a vision for a better use of scientific evidence, evaluation and data in policymaking

State governance has become increasingly complex in the 21st century. At a time of complex problems, there are no simple solutions. At the same time, technological progress brings new opportunities and challenges, and at the same time, people's expectations of public services are increasingly high. Decisions need to be made on what to deal with (as a matter of priority) and where to direct scarce national resources. The need to address multiple and overlapping crises has increased awareness and support for science-informed decision-making while showing that Member States have confronted those challenges differently. This has driven initiatives like the project "*Building capacity for evidence-informed policymaking (EIPM) in governance and public administration in post-pandemic Europe*" that foster closer cooperation among Member States in identifying the challenges and different paths to establish or strengthen evidence use in policymaking and learn from each other good practices. Problems like climate change, biodiversity loss, or regulation of emerging technologies like AI go beyond borders and require coordinated action.

The European Commission has implemented a set of practices in its legislative process and institutionalised a broad range of EIPM measures through the Better Regulation Agenda, which has the goal to 'ensure that EU policymaking is based on evidence'¹ and more specifically for '[...] establishing an accurate description of the problem, a real understanding of causality and therefore intervention logic; and to evaluate impact'².

Building on the promises of a new European Research Area in 2020 which refers to the 'need to exploit more effectively the potential of research and innovation (R&I) for society' and the Council Conclusions in 2021 that recognise the increased role of R&I in addressing future challenges, the COMPET Council Conclusions focusing on 'Strengthening the role and impact of research and innovation in the policymaking process in the Union' were published on the 8th of December 2023.³ The Conclusions underline the importance of reliable, transparent, verifiable and interdisciplinary evidence as input in forming public policies that serve the interest of people and societies and the mutual reinforcing value between research, innovation and policymaking. The Conclusions, while acknowledging that the use of evidence varies across Member States, also call for the Commission to develop actions and specific tools to foster the establishment of a European Science for Policy ecosystem. The main purpose for the EU is to act as a facilitator and a bridge between different structures and training activities that improve the capacity of Science for Policy actors emphasising intermediary organisations. This evolving political landscape vividly reflects a strong commitment and a progressive uptake of EIPM at a European level which is reinforced with a shared mentality that EIPM is the main conceptual and procedural path on which future reforms and changes in public administrations can be built.

Building capacity on working with evidence as the main driving factor for public administration reforms, is clearly articulated and validated by the ComPact Communication issued in November 2023 by DG Reform of the European Commission. ComPact issued by DG Reform of the European Commission, consists of a set of common values and actions with the purpose to 'Enhance European Administrative Space' and modernise public administration. One of the overarching values is 'Coherent, anticipatory, evidence-informed, participatory, digital-ready, and inclusive policymaking' as a principle that supports democratic governance, public trust and upholding the rule of law. Furthermore, the 'Ghent Declaration'⁴ signed at the EUPAN (European Public Administration Network)⁵ meeting on the 27th of February 2024, 29 countries have undertaken the commitment to build public administrations that are more representative of society and capable of implementing policies that

¹ https://commission.europa.eu/law/law-making-process/planning-and-proposing-law/better-regulation_en

² https://commission.europa.eu/document/download/199176cf-6c4e-48ad-a9f7-9c1b31bbbd09_en?filename=better_regulation_joining_forces_to_make_better_laws_en.pdf (p.3)

³The full text of the Compet Council Conclusions of 8 December 2023 can be found at this link:

<https://data.consilium.europa.eu/doc/document/ST-16450-2023-INIT/en/pdf>

⁴ <https://belgian-presidency.consilium.europa.eu/en/news/the-ghent-declaration-9-million-civil-servants-will-work-in-a-more-modern-and-diverse-public-administration/>

⁵ 'EUPAN is an informal network of the Directors General responsible for public administration in the Member States of the European Union and the European Commission' <https://www.eupan.eu/>

are data driven.⁶ The declaration is built on three pillars: 1) The Public Administration Skills Agenda; 2) Capacity for Europe's Digital Decade; and 3) Capacity to lead the green transition.

The abovementioned efforts constitute a major progress in developing a European Science for Policy ecosystem. A European approach to ecosystems is built in 'unity within diversity' in which diversity constitutes an opportunity for a peer learning process, exchange of knowledge and best practices that can further nurture a pan-European Science for Policy ecosystem, of which the TSI project in Estonia is a vital part of.

⁶ The full text of the Ghent Declaration can be found at this link;
<https://bosa.belgium.be/sites/default/files/documents/The%20Ghent%20Declaration.pdf>

3 Introduction

The project on *“Building capacity for evidence informed policymaking in governance and public administration in post-pandemic Europe”* is a Technical Support Instrument (TSI) multi-country project supported by the European Commission’s Directorate-General for Structural Reform Support (DG REFORM). This project supports seven European Union (EU) member states in building capacity to improve the effectiveness of their public administrations through greater capacity for supply and uptake of scientific knowledge, evaluation, and evidence in policymaking. The expected long-term effect of this project (impact) is the reinforced institutional integration of evidence-informed policy making (EIPM).

During the two years of the project (2023-2024), almost 100 people from Estonia's public sector contributed to compiling this report. The project's main beneficiary organizations (BOs) were the Government Office, the Ministry of Research and Education and the Estonian Research Council. In addition, line ministries, universities, think tanks, and organizations were also involved (a full list of contributors can be found at the end of the report).

Structure and building blocks of the report

This report consists of three main parts in chronological order of the work: the diagnostic report (chapter 4), the needs and gaps assessment report (chapter 5) and the roadmap (chapter 6). Each preceding chapter is integral to the subsequent one; thus, the roadmap chapter is of particular significance, as it presents a detailed plan for implementing change. All chapters focus on the supply and demand side of the Estonian EIPM system as well as the brokerage level where supply and demand meet. The term ‘supply side’ refers to organizations supplying the evidence to be used in policy processes. ‘Demand’ refers to those using evidence and scientific knowledge in their policy processes.

A short description for each chapter is given now:

- **The diagnostic report** (chapter 4), as a first step of this project, was intended to create an **overview** of the EIPM system in Estonia, including defining the roles of different institutions that use and produce evidence at the national level. The main conclusions were that among the Estonian government actors, **there is a clear understanding that building the capacity for EIPM is a necessary** aspect of successful policymaking and the main EIPM institutions, **structures, and systems are already in place in Estonia, but their implementation and ability to influence political decision making seems sometimes limited.**
- **The needs and gaps assessment report** (chapter 5) focuses on the **capability and political will to include more evidence in policymaking.** It focuses on **areas of potential improvements** as named by the beneficiary organizations of the project: (i) the need to increase the influence and legitimacy of science advisers and **science advice networks**; (ii) the lack of **incentives and structures for the scientific community** to engage in policy advice; (iii) the underrepresentation of **Strategic Foresight (SF) practices** across the government; (iv) the disregard of **innovative policymaking** in light of standard approaches; and (v) deficiency in understanding knowledge needs and access to **support services in government ministries.**
- **Lastly, a country roadmap (chapter 6)** contains very concrete policy recommendations with responsible organizations and time and resource estimates.

Methodological approach of the report

As an integrated report, the report draws on different methodological approaches. Chapter 4 draws on survey and interview data, and chapter 5 on interview and focus group data. Respondents for the survey, interviews, and focus groups were identified in cooperation with the beneficiary organisations. They consisted of a wide range of actors working on the supply and demand sides and the brokerage level of the EIPM ecosystem. Chapter 6 is the outcome of a cocreation process between the national expert team, the JRC, beneficiary organisations and key stakeholders both at technical/operational and, notably, senior management level. This included three separate meetings with GO, HTM and ETAG, three meetings with line ministries and two meetings with the representatives of universities (end of April to mid-May 2024) and an in-person workshop in Tallinn, on June 3rd, 2024, with a diverse group of representatives of the Estonian S4P ecosystem. It should be underlined that this is

an unprecedented collective endeavour of various institutions and individuals representing the whole Estonian EIPM ecosystem. The project team (representatives of JRC, OECD and the Estonian national experts) played the mere role of intermediators, moderators of discussions and draft writers.

Each intermediary output of the project was presented to the beneficiary organisations for validation and feedback.

How to read this integrated report

The diagnostic report and the needs and gaps assessment report presented in this integrated report should be read as steps taken to develop the roadmap. Because the diagnostic report and the roadmap were primarily based on the analyses of the expert team and the JRC, and the roadmap was co-produced in dialogue with key stakeholders, they have a slightly different emphasis. The main cause for this difference in emphasis is that this TSI ultimately strives for maximum impact, meaning that **feasibility** and **broad support amongst key stakeholders** were key in drafting the roadmap. For transparency, the diagnostic report and the needs and gaps assessment have been edited for factual consistency since their original delivery in November 2023 and February 2024 but are otherwise presented in their original form. These two reports can be read as steps taken towards the final roadmap and contextualize the roadmap's recommendations. In addition, they can serve as a source of inspiration. While the roadmap picks up on certain elements presented in the two preceding reports, the reader might be inspired to take action on the other opportunities for improving the Estonian ecosystem that can be found there.

4 Diagnosis report: strengths and weaknesses of the Estonian science for policy ecosystem

4.1 Executive summary

Among the Estonian government actors, there is a clear understanding that building the capacity for evidence-informed policymaking (EIPM) is a necessary aspect of successful policymaking in the 21st century. This is also reflected in the assessment of the Estonian Science and Research ecosystem in which we see that the **main EIPM institutions, structures and systems are already in place in Estonia**, but their implementation and ability to influence political decision making seems sometimes limited. **Strengthening of mandates and priorities is required** in order to develop the EIPM system to its maximum capability.

Introducing science advisers into the ministries and the Government Office must be seen as a great success and a correct step in furthering the capacities for EIPM. However, the role of the advisers, as well as the overarching framework, content and role of “science advice” has not been properly standardised. Furthermore, **science advisers lack any specific mandate** to more freely have control over research funds and being able to funnel advice directly to ministerial and political leadership. Unfortunately, they also often lack experience and skills for taking this responsibility.

On most levels of government, there is a great willingness to collect and listen to science advice before making a decision. Unfortunately, **the knowledge of how to engage with science advice is unevenly spread** and makes it difficult to engage with long-term problems. It seems difficult for good practices of EIPM to override or gain influence over political will, political agenda setting, voter promises and desires of efficiency. Clearly, there is capacity for EIPM. That being said, research funding has been made a priority by all political parties going forward. More funds will help to attract more scientists to work on topics of importance for the government. However, **ministries largely depend on the state budget process to allocate procurements for research purposes instead of using research grant competitions**. The strict procurement regulations constrain the timeframe and funding allocated, and hence mismatch the expectations of both governmental actors and researchers. Another hurdle is the lack of incentives for science for policy in career models of academics. Furthermore, career scientists struggle in the role of the adviser when engaging with policymakers as **it is difficult to distinguish between the role of adviser, lobbyist or researcher**.

When it comes to the impact assessment of policies the government invests most of its efforts into ex-ante assessment (a legal requirement and a tool to influence and justify budgetary decisions). Here great steps towards a more standardized and evidence-based methodology have been made but it remains largely up to the assessor. A **formalized ex post assessment is largely missing**.

Similarly, the lack of data literacy outside of specialized ministerial units needs to be addressed. More clarity is needed who oversees data, who makes it accessible and who manages it. At the same time, **there are many informal networks that strengthen the knowledge exchange and break administrative silos**. However, they are not formalized and often are dependent on single leaders leading the initiative. There are also innovative government solutions (e.g., Foresight Centre, Innovation Team) that bolster the knowledge and capacity of the government, but their full potential is yet to be fully harnessed.

In conclusion there are many strengths but also weaknesses when it comes to the capacity for EIPM in the Estonian government and in the research institutions. This report reflects the current state of EIPM in Estonia based on empirical data gathered during summer 2023 and serves as an input to the further steps of the project. The next steps will involve compiling a needs and gaps assessment report that also introduces good practices from other countries.

4.2 Introduction: Evidence-informed policymaking and the science-for-policy ecosystem in Estonia

Policymakers in the 21st century are tasked to deal with impossible situations. We live in a world that is dominated by global crises, ranging from global pandemics, financial and migration crises, violent conflicts and the ever-looming climate crisis. These so-called Wicked Problems (Klasche, 2021) are defined by their complexity, their lack of clear-cut solutions, involvement of many stakeholders, and most devastatingly their uncertainty. They have furthermore shown to be nearly immune to the tools in the regular government toolbox (Selg, Sootla, Klasche, 2023). They require politicians to set their day-to-day politics aside and public servants to re-consider

and re-think processes and priorities in their daily work. All this requires new approaches towards policymaking. One of them that should particularly **combat the uncertainty is a switch towards more evidence-informed policymaking⁷ (EIPM)**. Politicians and populations have experienced this uncertainty during the Covid-19 pandemic. In this uncertainty, scientific expertise became an integral part of policymaking and marked, to a certain degree, a paradigm shift in the public perception of the role of science in policymaking. After Covid-19, many political actors are motivated to assess their capability of science-informed policymaking to withstand the next crisis. This is where this project comes in.

The project “Building capacity for evidence informed policymaking in governance and public administration in post-pandemic Europe” is a Technical Support Instrument (TSI) multi-country project supported by the European Commission’s Directorate-General for Structural Reform Support (DG REFORM).

This project supports seven European Union (EU) member states (Greece, Belgium, the Czech Republic, **Estonia**, Latvia, Lithuania, and the Netherlands) in building capacity to improve the effectiveness of their public administrations, through greater capacity for supply and uptake of scientific knowledge, evaluation, and evidence in policymaking.

The expected long-term effect of this Project (impact) is the reinforced institutional integration of the use of evidence, research and evaluation for policymaking. Therefore, the project is expected to produce the following short/medium term effects (outcomes):

- Outcome A: Improved capacity for EIPM in governance and public administration in a post-pandemic Europe.
- Outcome B: Increased awareness, recognition and understanding at the political level, and in the scientific communities, of the actions and investments that are required for science and evidence to be able to fully contribute to well-informed policymaking.

As part of outcome A, the European Commission’s Joint Research Centre (JRC) and the Organisation for Economic Co-operation and Development (OECD) are conducting country-specific analysis. This analysis includes a country-specific kick-off event, a diagnostic assessment of the current use of evidence (output 1), a needs and gaps assessment of the beneficiary organisations regarding their preferred goals in implementing evidence-informed policymaking (output 2), as well as a collection of country recommendations with an implementation roadmap (output 3).

This **diagnostic report for Estonia** (output 1 of the project) provides an overview of the status quo of evidence-informed policymaking in the governance and public administration apparatus of Estonia. The report sheds light on the current situation of EIPM on the **a) demand** side: i.e., what is the capacity for EIPM in the Estonian government, what type of evidence does the Estonian public administration sector require, how high is the level of receptiveness for EIPM, and in which situations is evidence searched out; the **b) supply** side: i.e., what is the capacity for actors involved to produce evidence for policy-making, who provides this evidence (internal and external), and what are the obstacles here; and where **c) demand and supply meet**, i.e., what are the established places and processes in which EIPM is already successfully performed.

Scope of the diagnostic report

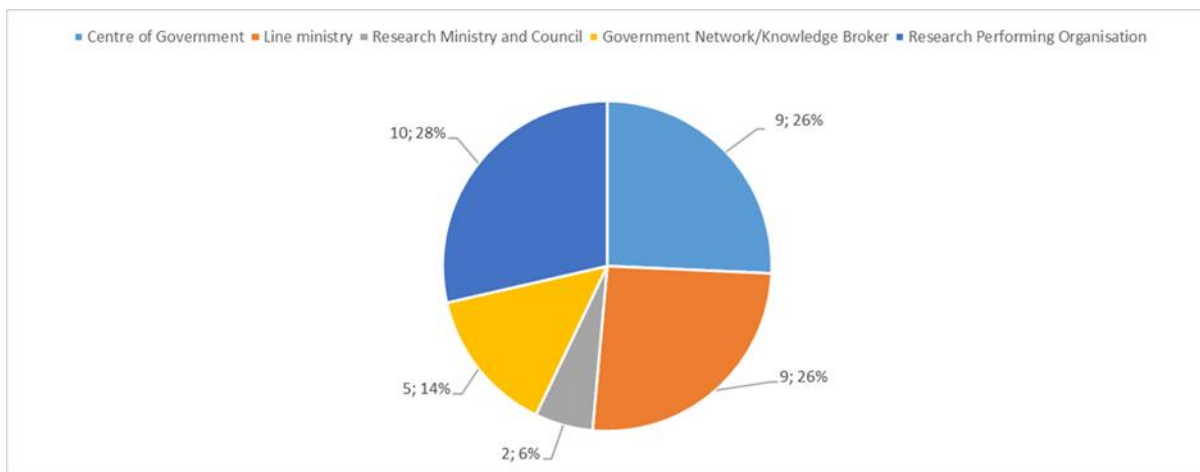
The report aims to cover the situation of the capacity for EIPM in the Estonian government and public administration as detailed as possible. Naturally, there are some limitations to this endeavour. The ambition of the report is to show a general picture of the Estonian government, but the level of detail is partially limited by the data sources (documents, questionnaires and interviews – see below) and the focus on the main beneficiaries

⁷ It is important to note that we are talking about evidence-informed and not evidence-based policymaking. Evidence-informed policymaking adds evidence and scientific knowledge to the political process but leaves room for other factors to play a role. Evidence-based policymaking (i.e., technocratic-rational based policymaking) leaves no room for this and in fact ought to be avoided in dealing with wicked problems (Selg, Klasche, Nõgisto, 2022).

(Government Office, Ministry of Education and Research, and Estonian Research Council (ETAG)). This focus was, however, necessary as these are the key stakeholders in the Estonian research and development landscape. Staff from line ministries, government agencies, and research institutions have also been invited to participate in the questionnaires and have been interviewed.

The empirical data used in this report has been collected via desk research, an online questionnaire sent to potential informants amongst the beneficiaries (Government Office, HoT and ETAG) but also other government officials or members of the research institutions in Estonia. We received answers from a total of 35 respondents representing different types of organisations (for a detailed breakdown see Figure 1). Furthermore, the team of experts has conducted interviews with 25 key actors in the science-for-policy ecosystem. While conducting the interviews, a certain narrative emerged that is reflected in this report. We listened to radical positions in both directions – “everything is excellent” or “nothing works”, therefore, some stakeholders might not be represented. We view the respondents and interviewees as co-creators of this report (for full list of organisations engaged in the survey and interviews, see Annex 1). They are the knowledge bearers and experts. Based on this, the report was peer-reviewed by the main beneficiaries and the respondents. All errors, however, are the responsibility of the expert team. For a more elaborate overview of the methodology, please consult Annex 2.

Figure 1. In which type of organisation do you work?



Source: own elaboration. Total number of responses: 35. Number of responses and their percentage over the total number of responses are shown next to each category of organisation (number; percentage). Some respondents filled out the questionnaire representing their whole organisation.

This report is structured as follows: section 4.3 offers an overview for demand and use of evidence and science for policy. Section 4.4 focuses on the supply of evidence for science for policy. In section 4.5, the compliance of demand and supply side are brought together. The report ends with a concluding diagnosis for EIPM capacity and policies.

4.3 Demand and use of evidence and science for policy: capacity of government and public administrations for evidence-informed policymaking

This section of the report maps the capacity of the Estonian government and the public administration sector to demand, mobilise, absorb and use evidence for policymaking and what factors in the political and administrative environment stimulates demand for scientific evidence (if applicable). It is divided into five sub-sections: (i) Stakeholder mapping, (ii) Culture and attitudes towards EIPM, (iii) Policy Framework and Guidelines, (iv) Inter-organisational and cross-governmental cooperation, and (v) the individual capacity of public servants. It ends with a summary of the key findings of the demand side.

4.3.1 Stakeholder mapping: overview of the key actors for demand and use of evidence and science for policy

In the Estonian government and public sector there is a general understanding that more evidence should be used to support policies. Naturally, many of these different stakeholders in this setup have different priorities and foci when it comes to deploying this in practice. In this section we will portray the main stakeholders in the Estonian science-for-policy ecosystem.

Parliament (Riigikogu): The *Riigikogu* consists of party-based parliamentary groups (fractions) and thematic committees composed of representatives from different parties. The Riigikogu has eleven standing committees and three select investigation and study committees for the investigation of special issues.⁸ There is no standing committee or special committee that focuses solely on research and development matters as an issue itself. All the committees may commission research and often invite researchers to present at their closed meetings. Researchers are usually invited to make such presentations on the basis of personal relationships between committee members.

The Parliament (Riigikogu) hosts the **Foresight Centre**, which develops future scenarios and presents them to parliament and the wider public. It operates under a specific law (*Arenguseire seadus*) and is the only institution outlined here that is not a part of the public administration apparatus and is abiding to very different rules.

Parliament is, by its nature, the platform for political deliberation among democratic representatives. It is therefore important to remember that political actors have their own agendas and try to sway scientific advice to support their preferred policies. Often advice is ignored in favour of political promises and efficiency. Other hindering aspects are that scientific advice can be a top priority by one governmental actor but might not be it for another. Politics and members of the parliament (MPs) of the day run on very different timeline to scientific research, and it happens often that an advisory group is not provided enough time or funding to efficiently conduct research, gather data, and analyse information. Lastly, the task and the complicated context around science advice are not always understood in the same way by the policymakers and advisers. Advisory bodies may offer recommendations based on evidence in good faith, but governments may find it difficult to adopt them due to political, economic, or social factors.

Having said this, especially after the Covid-19 pandemic, the Parliament boasts more MPs with an academic background which should lead to more engagement and accessibility to scientific work. It is, however, not a fully fair description of the parliament's role in the Estonian Research and Development landscape. On the one hand, parliament publishes, for example, since 2000, a journal *Proceedings of Riigikogu* (in Estonian, two issues per year), that takes a close look at the constitutional and social responsibilities of the parliament. Among the authors are often scientists and top administrators.

Government Office (GO): Due to its central role in the government, GO (more specifically, the strategy bureau) plays a crucial and increasing part in pushing forward the EIPM agenda. It employs a science adviser, similar to the ministries, with a pivotal role in engaging with advisory councils, academia, and other advisers. It also hosts the Innovation team in charge of driving innovative practices across government. In the GO we also find the Top Leadership Competence Centre which recruits and trains all top civil servants and plays a crucial role in capacity building for EIPM (and other areas). GO also oversees the implementation of mandatory impact analysis for new strategic plans/documents.

Ministry of Education and Research (HTM): HTM is responsible for coining the research and education (including higher education) policy and for distributing public funding to the universities, public research institutions, the Estonian Research Council and the Academy of Sciences. HTM also hosts the Research Policy Committee which provides advice to the Minister of Education and Research on research policy matters. This committee consists of renowned scientists and officials of several ministries. Lastly, HTM's research policy implementing organisation is the Estonian Research Council (ETAG). Therefore, HTM plays a pivotal role in the research and innovation system and, by extension and direct intervention, in the science-for-policy ecosystem; HTM not only provides the central funds and defines the policies reigning most part of the supply side, but also it has directed some initiatives to promote EIPM mostly through ETAG.

⁸ See the list of standing and select committees: <https://www.riigikogu.ee/en/parliament-of-estonia/committees/>

Ministry of Justice: The Ministry of Justice is potentially taking the most formal action in EIPM by their yearly reviews of legislative activities where they assess the quality of the content process and considerations of impacts etc.⁹

Ministry of Finance: In the field of EIPM, the Ministry of Finance is responsible for offering trainings that support the capacities for EIPM government wide.

Ministry of Economic Affairs and Communications (MKM): The Ministry of Economic Affairs and Communications is a key player in business and innovation-related R&D. It is also one of the key stakeholders in data management. MKM hosts Innovation Policy Committee which is an advice-giving body on innovation policy matters.

Statistics Estonia: The statistical office acts both on the demand and the supply side. It collects statistical information from government institutions, agencies and the public (sector) to reflect the situation of and changes in the society. Afterwards, it makes this data available in the form of quantitative, qualitative, aggregated and representative information for the government and the public.

Research and Development Council (TAN): TAN is an advisory council to the Government that consists of 15 members, including five ministers (Prime Minister, Minister of Education and Research, Minister of Economic Affairs and Information Technology, Minister of Health, Minister of Climate), four representatives from specific organisations of science, business and innovation community (Rectors' Council, Academy of Sciences, Employers' Union, and Chamber of Commerce and Industry), and six invited experts who represent their own experiences and fields only (seeking a balance of three coming from academia or public research sector and three from the private sector). TAN guides the national and development policy and advises the government in research, development, and innovation matters. Of note, TAN is a body that works on "policy for science" (helping shape research and education policies and R&D allocated spending) rather than on "science for policy" (in charge of synthesising, brokering and providing scientific evidence to inform any policy process).

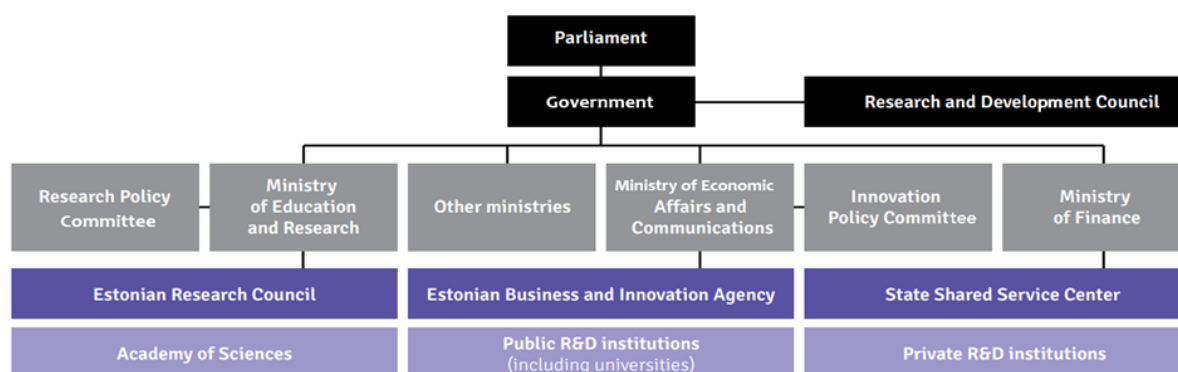
Estonian Research Council (ETAG): ETAG is the main implementing agency of R&D policy in Estonia that organises national calls for research funding. It also supports international research cooperation and promotes science communication. ETAG is also included here as one of the main project beneficiaries, even though it is an agency under HTM. In addition to HTM, ETAG was the main stakeholder in the initiation of the Science Adviser network (a part of the RITA programme) which encouraged the GO and the line ministries to employ science advisers. ETAG runs also other parts of the RITA programme, including applied research programmes. During the Covid-19 pandemic, ETAG developed several programmes for short- to mid- term Covid-19 related studies funded by dedicated governmental funds and from EU structural funds.

Local governments: Local governments have a high demand for accessing data and help with EIPM. This was an aspect not mentioned by many of the interviewees but was brought out by university representatives. At the local level, there is an even larger lack and gaps of funding for EIPM practices, as certain municipalities are much larger, and with higher population numbers which warrant much more access to funds.

In particular, the Research and Development landscape, part of which overlaps with the analysed Estonian science-for-policy ecosystem, is summarized in Figure 2, by the graphic below created by the Estonian Research Council and published in their yearly report in 2022.

⁹ The criteria for these assessment come from the Parliamentary Resolution for legislation (available in English <https://www.riigiteataja.ee/en/eli/508052021001/consolide>).

Figure 2. The Estonian research and development landscape.

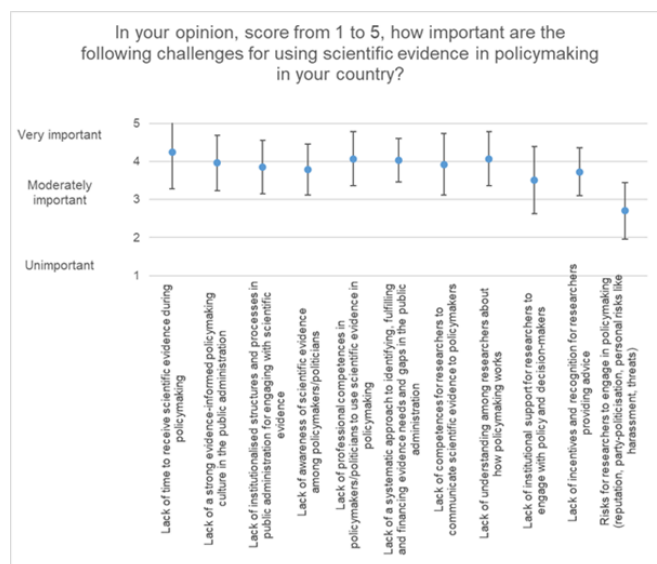


Source: Estonian Research Council, image published in their yearly report from 2022 (Raudvere 2022, p7)

4.3.2 Culture, attitudes and understanding of evidence-informed policymaking

Culture has been named as one of the key elements by all stakeholders during the interviews. While the underlying infrastructure of EIPM has been mostly in place in Estonia, many cultural aspects are yet keeping it from being fully successful. In fact, some stakeholders have pointed out that without a culture change much of the structural achievements in the EIPM environment are endangered. The structural hurdles are also visible in the responses to the survey (Figure 3). Respondents, when asked about the challenges to EIPM in Estonia, considered all raised aspects as impactful, starting from the lack of a strong EIPM-based culture, lack of time, and lack of competencies to lacking a systematic approach in identifying needs and gaps. Interestingly enough, yet this might also be due to a tilted response rate from the demand side, the questionnaire finds that the lack of institutional support for researchers, and the risks for researchers to engage in policymaking (loss of reputation, personal risks, etc.) are less of a hurdle. However, this does not match the observations we laid out in sections 4.3 and 4.4 of this report.

Figure 3. Challenges for using evidence in policymaking in Estonia



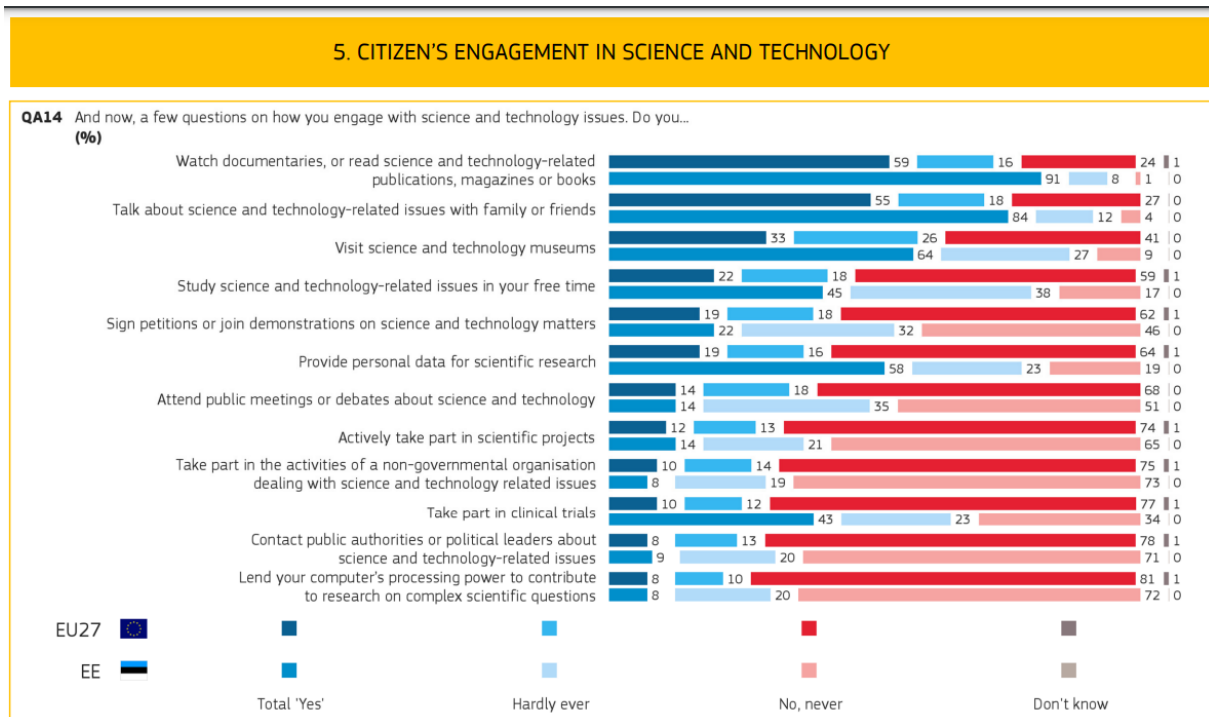
Source: Own elaboration. Means and standard deviation are shown for each potential challenge (listed in the x axis) around a qualitative assessment of 1 (unimportant), 2 (somewhat unimportant), 3 (moderately important), 4 (somewhat important), 5 (very important). Total number of responses varied on each evaluated challenge from 22 to 25.

Of note, most of these aspects are not individual problems but structural/institutional ones. The public administration staff is highly educated (many holding a research degree), interested in training and continuous learning, and is generally very much in favour of using evidence in their decision-making. There is also a clear

understanding that there are great advantages to EIPM and that most public servants are highly motivated to perform their tasks in the best possible way.

This is also well in line with public opinion surveys that found that Science is positively valued amongst the Estonian public. Indeed, in the Eurobarometer 2021, Estonia generally ranks above the EU average (Figure 4).

Figure 4. Citizen’s engagement in science and technology in Estonia and the EU-27 average



Source: European Commission, EU Barometer 2021.

There are also concerns about data literacy and analytical skills that hinder EIPM; certain key stakeholders are aware of this and promote training and look for these skills in the hiring processes. Even worse, some respondents noted that this does not always apply to the highest-ranking officials (especially deputy secretary generals), who, in the end, are the ones making the decision on whether to include evidence in recommendations to ministers or in policies. The same observation applies to the political stage. One interviewee suggested installing a specific schooling programme for the newly elected MPs to inform them how EIPM works, since most of them have not been in touch with this topic and therefore avoid any contact with existing advice possibilities. It was also highlighted that, in some cases, the level of understanding about EIPM of ministers may be far below the level of public servants.

This structural problem is an inherent side effect of the democratic policy process which is not unique to Estonia. Still, this problem has to be addressed. It has been cited most often that the institutional constraints, available time frame, funding possibilities, and most impactful, the lack of political will from the elected politicians, are the problems.

However, many public servants also showed great understanding for this circumstance. Politicians are on short timelines and need to keep promises made to voters, party members and coalition partners. In this list science or evidence is only secondary. Still, the institutional culture in government needs to change to better embed evidence in the policymaking process. Government office, ministries and agencies need to strengthen the structural basis for EIPM to work that is currently in place. Although more funding has been made available for research purposes across line ministries, resources seem yet to be currently underutilised and timeframes may need to be expanded to ensure enough window for collection of scientific results and evidence. But most importantly, the willingness of both high-ranking officials and political actors needs to be further nurtured to consider evidence and science in their decision-making.

4.3.3 Policy frameworks, guidelines and other practices

Culture is also a product of guidelines and steering documents. The next section will map those frameworks, guidelines and other practices that shape EIPM in the Estonian government.

4.3.3.1 The impact of impact assessments

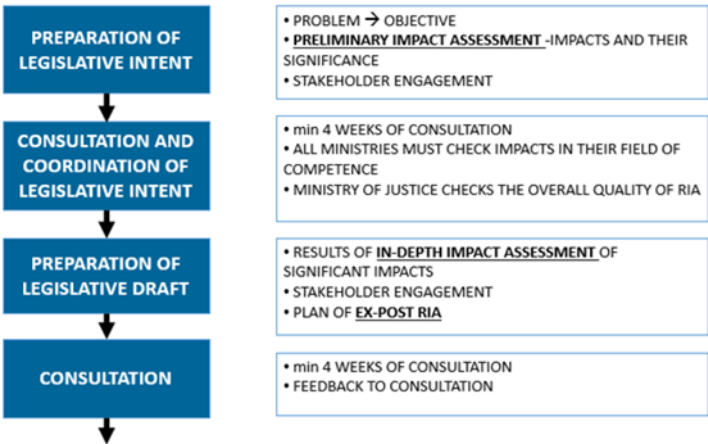
The systematic regulatory impact assessment starts with the renewed law drafting regulation “Rules for good legislative practice and legislative drafting” in 2012, which came with a Methodology for Regulatory Impact Assessment (RIA) – a practical guideline adopted by the government. The practical guideline was necessary as RIA was often not done at all or only after a law was drafted. Firstly, the implementation process was also hard, as there was no RIA tradition in the Estonian government and not enough legal capacity and competency. This has been vastly changed since then. In 2021, the methodology was updated with clear terminology, and the stages for impact assessment were further clarified.

This methodology guides public servants in their *ex-ante* impact assessment through three preparation processes: of draft legal acts, of strategy documents, and of government positions in EU matters (*ex-post* assessment are still rare and mostly done for outside donors). It also introduces quality control by the Legislative Quality Division of the Ministry of Justice, who also provide guidelines and trainings, collect data and represent developments in international fora.

According to the law six categories of impact are to be considered (the list is not exhaustive): (i) Environmental impact; (ii) Economic impact; (iii) Impact on regional development; (iv) Impact on state and local government organisation; (v) Impact on state security and international relations; and (vi) Social, including demographic impacts. In other words, an impact assessment needs to consider the impacts that a planned policy change would have on each one of these six fields on different societal groups.

In practice, different Impact Assessment Advisors conduct the impact assessment differently. The 2012 methodology always supports but it is more a set of rules for good law-making or norms than strict requirements that need to be followed. The expected steps are (1) preparation of legislative intent – very important including problem definition; (2) preparation of the legislative draft; (3) consultation with all stakeholders (Figure 5). For the impact assessment itself, many different resources are used depending on what the case requires: Consultation with practitioners, researchers/and previously done research; involvement of people that will be influenced by the policy; ordering of additional research. It is important that the RIA is inclusive, analytical, and evidence-based, and that also shows alternative solutions to the problem and positive and negative impacts to target group(s).

Figure 5. Steps of RIA in Legislative Process



Source: Ministry of Justice, 2014, p11.

There is no official need to carry out *ex-post* assessment. However, *Riigikogu* has identified *ex-post* assessment as an important goal in the National Development Strategy 2035.

4.3.3.2 The role of EIPM in the National Development Strategy “Estonia 2035”

The EIPM agenda is also visible in the National Development Strategy “Estonia 2035”. This long-term strategy for Estonia admits that it “does not use enough research and field experts in making decisions and, compared to other Member States, the efficiency of government agencies is only average” (p. 2) with a clear willingness to make changes to it. The strategy outlines evidence-informed policymaking as a very important focus in turning Estonia into an efficient and smooth-running state.¹⁰

Figure 6. Strategic goals of Estonia 2035



Source: Estonian Government, 2020.

Particularly, the governance section, which is one of the five strategic goals next to people, society, economy, and living environment (Figure 6), focuses on the digitalization of the state, increasing the quality of public services and ensuring of fundamental rights, and making the society more research-intensive (Figure 7).

Figure 7. Development of State Administration in Estonia 2035



Source: Estonian Government, 2020.

However, at the moment, no concrete action plan or guidelines on how to reach this goal have been created. That being said, this long-term strategy is followed by 17 policy field development plans that shed some light on more goals. Connected with EIPM the following aspects can be located in the strategy (p.13–14):

¹⁰ The development strategy “Estonia 2035” can be accessed via <https://valitsus.ee/suurendame-valitsemise-uhtsust-ja-tagame-sujuva-riigi-toimimise#riigi-kui-terviku-te>.

- Implementation of evidence-based policymaking (incl. Development and implementation of the organisation and coordination of national R&D and budgeting monitoring system)
- Development of a policy analysis and impact assessment system, including data mining and data use (open data and data protection, data monitoring and forecasting), assessment of the administrative burden on enterprises, ensuring regional specificities and addressing needs
- Supporting innovative solutions, experiments and pilot projects
- Introduction of data management-friendly and people-centred data management (incl. In the legal space and with technical solutions) and the promotion of secure access to data from various sources for the development of services
- Developing an academic career model that supports diverse development and offers greater stability
- Ensuring the quality of research infrastructure and opening it up for joint use, taking into account the needs of both entrepreneurs and the public sector
- Improving the wider availability and use of research results (including the development of open science)
- Increasing the knowledge transfer capacity of research institutions and universities (incl. training of employees, development and provision of new services)

These quotes from the strategy are very promising – if put into practice – and push for structural changes in both the capacity of the demand and supply side of evidence-informed policymaking. It is nevertheless encouraging to identify EIPM actions as part of a political vision for Estonia 2035 and also shows that the desired change has a chance to have a real impact.

4.3.3.3 Obstacles via the Public Procurement Act

Line ministries have the option to employ public grant competitions and targeted government funding (*sihttoetus*) to meet the research goals of ministries. As a matter of fact, these services are offered by ETAG to ministries, but with limited success. Instead, public procurement¹¹ seems to be the preferred option by line ministries to fund research needs and although there exists also exemptions from the procurement rules for research and development, they are not fully used, as per the interviewees' opinion. Interviews showed that line ministries can use different approaches to procuring research, some of them using these R&D exceptions more often than others. This is somehow topic-related, but also relies on willingness and awareness of the legal departments of line ministries. As a result, the limited use of alternative paths through ETAG or R&D exceptions within the procurement process leads to the fact that ministries mostly rely on public procurement without exemptions to fulfil their research needs. This may explain why many respondents both in the demand and the supply side have referred to public procurement for research as a major obstacle – sometimes it has even been described as an impossibility.

In general, procurement is a useful guideline to avoid corrupt management of state funds. However, when it comes to funding research, it creates several difficulties. Most harmful is the negative impact on long-lasting relationships between government actors and research institutions. If line ministers mostly rely on covering their research needs via a tender (public procurement), it is hard to rely on built relationships. At the same time this leads to call for proposals that are very detailed and specialized already with a particular research group in mind and shows perhaps limited skills in the line ministry to actually procuring research and development activities. Ironically, this promotes, what the procurement actually tried to avoid – the favouring of one offer over the other, needs to be selected via a tender it is hard to rely on built relationships.

Often, it also does not make sense to organize a tender if there is only one research group in Estonia that could even conduct the research, for example in the case of questions revolving around Forensic science, with the Estonian Forensic Science Institute having the unique capacity to cover these issues in Estonia.

¹¹ See the Public Procurement Act on: <https://www.riigiteataja.ee/en/eli/503042023006/consolide>.

4.3.4 Inter-organisational and organisational level: internal capacity for evidence-informed policymaking and engagement with scientific expertise across government

Governments consist of a multitude of different actors, stakeholders, structures and individuals. Very often we speak of administrative silos that are created in the government. They might refer to knowledge staying only in, for example one ministry, but can also point towards the absence of communication. Unfortunately, the same phenomenon can also be observed within one organisation. In the complex setting of the 21st century enhancing the inter-governmental or inter-organisational cooperation is absolute key. One of the main strategies to combat this is the introduction of formal and informal networks (Sørensen and Torfing, 2007). In the following section we will look at the situation and the strategies in the Estonian government to enhance this cooperation, while mapping the different informal networks that are adjacent to EIPM.

Informal networks embody a strong tool for the promotion of EIPM. Much of everyday work and policy developments are organized in networks, but most often, these are initiated by some ministry official (policy adviser, policy analyst, department head, or deputy secretary general) and are functioning without any formal appointment or mandate.

There are also formal networks and working groups for some wide-scale topic coordination (e.g., creating a development plan, developing Open Government Partnership activities etc.). The most developed network in Estonia is the science adviser network developed by HTM and ETAG and organised within the RITA framework.

Box 1. Growing numbers of governmental networks

More and more networks are spawning in government circles. In most of them we can see the acknowledgement of the need to overcome administrative silos and share information government wide. We can also see that often the initiative of a leading official is necessary. Two example networks are listed below:

Network of Impact Evaluators

The network of impact evaluators has been founded in 2021 by the director of the legislative quality division at the Ministry of Justice. This informal network has about 50 informal members from many different ministries, and agencies and recruits members from different ranks throughout the government. The network is organized as different round tables who meet 3-4 times a year: one for heads of legal departments, one for language editors, one for impact assessment advisors. The advisers have not a very clear profile and it is very helpful for them to get inspiration and hear best practice sharing. For this different impact assessment teams will for example present a specific case study.

Data Steering Group

The Data Steering Group was initiated by the Chief Data Officer at the Ministry of Economics and Communication. It is very popular (500 participants). All ministries and agencies are invited. It gives feedback on data policies and the use of data in policies. It focuses on communicating findings and educating/training its participants.

4.3.4.1 Science for policy in the Science Adviser Network

The network was co-created by HTM and ETAG when the RITA framework (2017–2023) got kick-started. The aims of the RITA programme (*Riigi TA programm*, Estonian for State R&D Programme) were to increase the role of the state in the strategic managing of research and the capabilities of R&D institutions in carrying out socially-relevant research. RITA was financed from EU Structural Funds. The creation of the science adviser positions was one of the most important activities of RITA and is recognised as a success story. The close cooperation between HTM and ETAG to allocate a portion of RITA funds to create science adviser positions was inspired by the Finnish example.

At the beginning, science adviser positions in different ministries were co-funded, on the one hand, by ETAG from the budget provided by the EU Structural Funds and at the request of HTM, and, on the other hand, by the respective ministry. After this initial co-funding phase, ministries then became in charge of fully funding their science adviser, thus considering them as full ministerial staff and without any co-funding coming from ETAG anymore.

Still, ETAG keeps on organizing monthly informal sessions to keep the network members engaged. The purpose of these meetings is to familiarize the science adviser with their work – even though it can greatly differentiate

between different posts/ministries. As science advisers often change, the existence of a network helps build a sort of institutional memory.

Although ETAG has the aim to help science advisers build such a network and stay connected, this soft coordinating role by ETAG may not carry the same weight and influence across different ministries as if it were under the direct responsibility of the Government Office.

A recent step into formalising ministerial networks has come from HTM. In 2021, HTM has formalised the “Coordination network for research and development” to discuss all relevant issues in regards to R&D policymaking by using a whole-of-government approach. This network also holds regular meetings and comprises some members of the Science Adviser Network, with others apparently feeling excluded. However, the distinction between both the Science Adviser Network and the Coordination network for research and development, or whether the latter network replaces the former one, was not very clear among interviewees. This confusion may relate to the specific functions associated with each network and the fact that there is certain overlap of individual members.

For further information about the network of science advisers, see subsection 4.5.1.

4.3.4.2 Policy for science in the Research and Development Council (TAN)

The Research and Development Council (TAN) is an advisory body located at the Government of the Republic, which performs the tasks arising from the “Organisation of Research and Development Act” and other legal acts and assigned by the Government of the Republic. TAN has 15 members and its composition is approved by the Government of the Republic for up to three years. TAN also receives the secretariat support from the science adviser located at the Government Office.

To perform its functions, TAN has the right to:

1. make proposals to the Government of the Republic regarding the formation of national R&D programme committees and programme councils related to research and development, their composition, financing and ensuring their activities, as well as the designation of bodies responsible for the implementation of the program;
2. when advising the Government of the Republic on international R&D cooperation, to express its position on international agreements and assistance programmes concerning research and development;
3. receive information (documents and explanations) on R&D from ministries and other government agencies, local government units and their agencies, and R&D institutions;
4. make proposals to the Minister of Education and Research and the Minister responsible for economic affairs for the consideration of topics in the Research Policy Committee or the Innovation Policy Committee, respectively;
5. to form expert committees and ad hoc working groups.

In the performance of its duties, TAN cooperates with ministries and other government agencies, local government units and their agencies, research and development agencies and, where appropriate, other agencies and persons.

TAN is accountable to the Government of the Republic, to which it submits the Estonian R&D Report and the R&D policy objectives for the upcoming period each year. As a result, TAN is the major advisory body on Research, Development, and Innovation policies to the government and the Prime Minister. Therefore, their science-for-policy activity is mostly focused on improving “policy for science”: providing advice, expertise and evidence to improving the quality of RDI policies or the funding for R&D by line ministries, the creation of temporary working groups affiliated to TAN that address specific R&D-related issues such as the creation of the “Innovation ladder” innovation benchmark tool and the quality standards for research funded by line ministries, etc.

Some of the respondents expressed certain concerns about the composition of TAN membership. They felt that sometimes the members of TAN failed to distinguish between their role as a policy adviser at the national level and their individual role as minister of a line ministry or top/senior representative of an institution. Some interviewees mentioned that, when there were more “free thinkers” in TAN, the strategic view of TAN was wider. However, recent steps undertaken by TAN challenge this view as the situation seems to have been recently

improved. First, TAN creates more often ad-hoc working groups for which it leverages external expertise. Second, and most importantly, in mid-August 2023 the composition of TAN was reformed and enlarged. In the new format, TAN currently appoints six individual experts not representing any ministry, scientific organisation, union, or employer organisation, with the aim of better addressing the impact of research on society and how it interacts with policymaking. For instance, the new TAN composition places a bigger emphasis on competences in climate and environmental issues. Thus, to some extent, these individual experts could become such “free thinkers” aforementioned.

In summary, this recent approach to strengthen TAN and allocate its responsibilities to provide advice for better RDI policies (and beyond) across government may ultimately strengthen evidence-informed policymaking.

Box 2. The COVID-19 pandemic, an exemplary case of EIPM

The COVID-19 pandemic mobilized governments, scientists and the whole society to cope with the crisis. This crisis tested and revealed the strengths and weaknesses of the EIPM system. The Estonian government rapidly set up a new advice mechanism and provided dedicated funding for monitoring the virus, to bring it under control and mitigate and prevent the effects of virus in different areas. Scientists proposed immediate help within their competencies, intermediators (e.g., ETAG) set up several programmes for COVID-19 - related research. Many novel approaches were devised in a very short time.

Scientific advisory board

During the COVID-19 pandemic, the emergency committee (a seven-person cross-cutting working group from the government) created an *ad hoc* scientific advisory board on March 20, 2020, to gather and analyse expert information and advise the government. Until 2022 the board operated under the Government Office, and from 2023 on it provides evidence-based advice to the health crisis management under the Ministry of Social Affairs. This was the first time a board like this was ever formed. It consisted of various medical professionals. It has been both praised and criticized for its function. On one side, it provided detailed feedback on medical sciences advancements on the virus and was praised for its communication with the public. It was also criticised for focusing only on the medical side of COVID-19, disregarding other scientific disciplines. This criticism was perhaps unfair as it was an advisory board for medical sciences only and similar boards focusing on the impact of the virus on the society, the economy and the mental health would have been just as important during the pandemic. The roles and responsibilities of the scientists and policymakers were not clearly defined and changed throughout the process.

Dedicated research programmes

ETAG devised in a very short time several research programmes, using both national funding from HTM and EU structural funds. A novel approach bringing together the supply and demand side was used. ETAG organized brainstorming in spring 2020 asking researchers, research centres, and universities to propose the most important research topics and the readiness to study them. Researchers submitted 152 research proposals. At the same time, ministries and agencies submitted 37 descriptions of their research needs. ETAG, in cooperation with universities, the ATA, EYAS, ministries, Governmental Office and the crisis committee of the Government, selected the research topics to be funded. In a few months ETAG opened calls for proposals to fund four major strategic studies and nine sectoral studies. A special funding instrument – target grant (COVSG) – was created and in the application round of which, 14 applied research and experimental development projects in five research fields received funding. ETAG also supported international COVID-related projects. A total of 8.1 million euros from the state budget was allocated to these coronavirus-crisis-related R&D programs (Rutiku, 2022). In addition to these programs, the government allocated considerable amount of funds to COVID-19 monitoring, for studies of antibodies etc. The activity and visibility of scientists involved in the COVID-19 research, monitoring and advice increased public trust in science and scientists. It became evident that scientific advice can play a major role in dealing with crisis situations. Scientists have shown to be valuable advisers due to their ability to understand and communicate the complex processes of the crisis and could tap into the knowledge of their international networks to collect and interpret the best available data. In-depth evaluation of the actions of the different parts of the EIPM system during the COVID-19 crisis and the lessons to be learned, are still ahead. The provisional evaluation by the Chair of the Science Advisory Board Irja Lutsar (2022) was the following: "It is important to continue the discussion on how research can contribute to the management of crisis situations operationally and what those funding research, i.e., the state, should do in a similar situation. Clearly, conducting basic research should be of the essence even during the period between crises. If we start placing emphasis on basic research when we are already in the middle of a crisis, we are hopelessly late."

4.3.4.3 Spearheading public innovation: the role of the Innovation Team

Next to networks and councils it is also important to highlight the role of the Innovation Team. The Innovation Team was established five years ago by the strategy bureau of the Government Office and supports all ministries and their subsidiaries with finding solutions to pressing policy issues. It shows again that the Government Office is very much interested in increasing the capabilities of EIPM. Today it reports to all secretary generals who also get the final say on selecting a problem. During the period of interviews, the team consisted of four people trained in behavioural sciences, anthropology, psychology and graphic design. The Innovation Team has two different formats to engage with government officials and increase EIPM capacities.

First, on demand, to receive the help of the innovation team it is required to apply with a problem that requires several stakeholders' engagement (e.g., multiple ministries). It is also important that the Innovation Team feels like meaningful impact can be achieved in 8-10 months which is the regular run time for a project. When this is clear, the project application gets recommended to the secretary generals who make the final call.

Second, there is also a shorter format, which might be more impactful to the culture of the government. In the shorter six-week programmes any team can apply. The problem here needs to be even smaller as it is structured around "Innosprints" (innovation sprints) (see Box 3), which uses a design-thinking approach by which, in five working days, you get from defining a problem to a solution tested on users.¹² Once in the programme, the Innovation team urges participants to collect new data (qualitative and quantitative) in innovative ways. Often this will be done with fieldwork deploying anthropological and ethnographic methods (interviews, observation etc). Getting closer to the actual "users" - the recipients of the policies – is a highly radical approach in the government. All of this is supported by Sherpas, ministry workers who already conducted an innovation project.

Box 3. What is Innosprint?

Day 1

"On the first day, we address all 24 teams simultaneously, either in person or virtually. We introduce ourselves, explain why they should trust us and share inspirational learnings from past projects. We introduce them to design thinking as a concept and provide lectures on anthropology and fieldwork. They also begin working on their own problems during this time and plan fieldwork."

Days 2–3

"Days two and three are consecutive full-day sessions. On day two, teams return from fieldwork and spend the morning sharing their experiences and insights. We facilitate discussions and encourage them to focus on specific aspects of their problems. In the afternoon, we provide a lecture on behavioural science to help them understand why people sometimes behave strangely. By the end of day two, they formulate a specific focus and create "how might we" questions. Day three starts with another lecture on behavioural science, followed by guided ideation sessions. We encourage them to generate as many ideas as possible, both good and bad, using behavioural science ideation cards. By the end of the day, teams should have one or two solution concepts they can work with."

Day 4

"Day four focuses on prototyping. We teach them the basics of rapid prototyping, and they create prototypes of their solutions. We may provide external support from designers to help visualize their ideas. Ideally, by the end of day four, they have prototypes ready for user testing."

Day 5

¹² The innovation team follows the Agile methodology very popular in tech innovation. This methodology focusses on gradual solutions of a problem and does not have a fixed outcome in mind. In practice this means continuous check-ins on the progress which support altering the outcome. For more info: <https://asana.com/resources/agile-methodology>.

“Day five involves further development of their solutions and conducting user tests. Between day four and day five, they have a week to test their prototypes. By the end of day five, they should have gathered feedback, learned from their tests, and refined their solutions.”

Day 6

“Finally, two weeks later, we organize a public presentation where teams showcase their projects. Not all teams may have completed testing by this point, but we allow additional time for those who need it. The goal is to have tangible outcomes beyond just ideas during the presentation.”

During the Innosprint, also short online Base-camps are provided to help with running matters and keep the motivation up. Teams participating in Innosprints are voluntary-based. Every ministry has to find internal funds in case it is necessary for field work etc.

As a result, the Innovation Team has a great track record and reputation - even the Estonian Defence Forces have used their methodology and is highly supporting its role. But it also faced some problematic projects due to legal aspects and ethical considerations. For longer projects, the team have sought approval from ethics boards to ensure the proper handling of ethical concerns and are continuously working on improving the workflow for addressing ethical considerations and hope to establish a separate ethics board specifically for public service experiments in the future. All that being said, it could be better known on the political level across ministers and members of parliament.

The Innovation Team further increases the connection between government and research when it brings in scientists to teach methods or consult projects as well as increases the capacity of public servants to consume and comprehend academic literature. It is also at the forefront of developing and promoting experimental culture in the government. It also normalizes different methods and data points (qualitative) in the use of EIPM. It also partially breaks down the organizational silos as different stakeholders are required for a project.

4.3.5 Individual capacity: competence, training, and resources for government officers for evidence-informed policymaking

4.3.5.1 A Stretched Work Force

Naturally, Estonia has access to a limited workforce with a population of just 1.3 million. In 2021 about 23.000 (Officials and employees) people worked for central government agencies. Most government employees are graduates from one of the three major public universities in Estonia (Tallinn University of Technology, Tallinn University and University of Tartu). Employees come from a variety of backgrounds, which is also related to the fact that there is no national school of public administration in Estonia. That being said, universities also provide programmes focusing on public administration on BA and MA level (funded by the state).

Central training is offered by the Government Office on regular basis to civil servants, especially on matters related to leadership in public administration, but interviewees acknowledged the need for more training for use of evidence-informed policymaking and related competences.

This leads to a “thin” Estonian state in which for example, based on the estimate of one interviewee, over 500 positions in ministries and agencies remain vacant. This might be owed to the competition with the private sector that can offer much higher salaries but also to the lack of formalized education in the area of EIPM. This is among other things expressed in the apparent lack of data literacy proficiency in line ministries. The required skillset is also not a mandatory part in many higher education degrees outside of specialized degrees.

This all leads to the assessment by some that government organisations are not supporting data-driven work – which can have many different reasons: time constraints, opposition to analysis results, analysis show that a policy is less impactful than expected, no trust in data. Still the number of analysts in all ministries and agencies is constantly growing and today about half of them have a person designated for data management. Some voices within the administration even consider the number of analysts sufficient but see their skills not sufficiently deployed or developed. Additionally, all state servants have the possibility to receive training in analytical thinking. But also differences between ministries and government actors occur.

Similar to increasing data literacy, there is the need for data analysts and other experts in their specific field, environment, transportation, energy, education, and etc. to acquire basic understanding on policymaking when they start their duties in their government department. Although there are preparatory courses, they are offered on voluntary basis.

4.3.5.2 Willingness to Learn

The general sentiment seems to be that trainings are very much welcomed and there might be not enough. Interviewed leads and specialists want more trainings to foster their analytical competences, promote data literacy, and understand better policymaking. Central training is provided to limited number of people by the Top Civil Service Excellence Centre at the Government Office (to current and future Top Civil Servants). The funding for the Central Training Unit at the government office has been secured with EU Funds. The funding is expected to decrease greatly in 2024 after the end of the ESF period.

Additionally, similar courses by procured outsiders to ministries, for example both large private think-tanks Praxis and Centar are offering data analysis trainings for the public and private sector. Some of the procured trainings could ideally be conducted in-house to save money and bureaucracy.

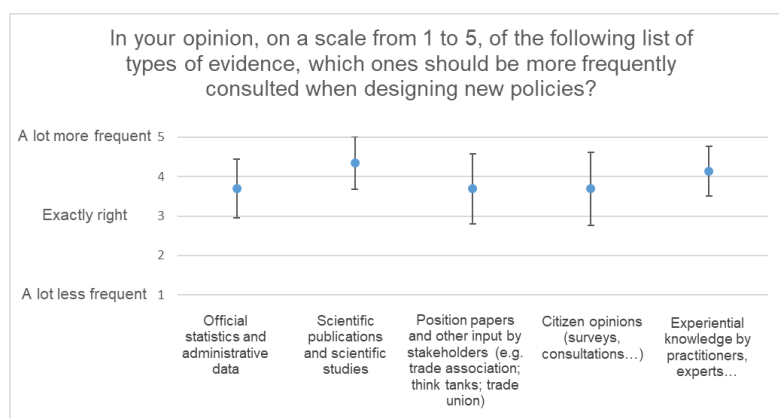
Competences on impact assessment are trained with the support of the Ministry of Justice. These trainings are organised for all lawyers throughout the different ministries during their on-boarding process, but other staff is welcome as well. The heads of legal areas of each ministry are signalling the need for trainings. The training also includes the presentation of the impact assessment to other stakeholders. It focuses further on the goal formulation of a legal change – the reason cannot be because we need a new law.

Lastly, the recent activity by the Innovation Team to train policymakers to promote and implement public innovation, policy experimentation and wider stakeholder engagement around specific policy issues and practical challenges, offers another training platform within the public administration.

4.3.5.3 What type of evidence is needed?

We have outlined above that there is a great desire to involve more evidence in the policymaking process in Estonia. Currently, many types of evidence are used and consulted. There are differences in ministries and different units on the type of evidence that is consulted to assess, for example, pending policy changes. Similarly, the frequency varies from place to place. However, it seems that most survey respondents agree that even more evidence can be consulted. Figure 8 shows an overview of the type of evidence that should be used more often. Nearly all respondents agreed that official statistics, scientific publications, position papers by societal actors, citizen opinion and experimental knowledge should play an even bigger role. There is no statistically significant difference between the types of evidence, likely due to the low number of responses. We can, however, identify a trend towards more use of scientific publication and experimental knowledge. This could mean that either these sources are not yet utilized as much or refer to the unique composition of the respondent group, who may be more science-minded.

Figure 8. Preferential use of types of evidence

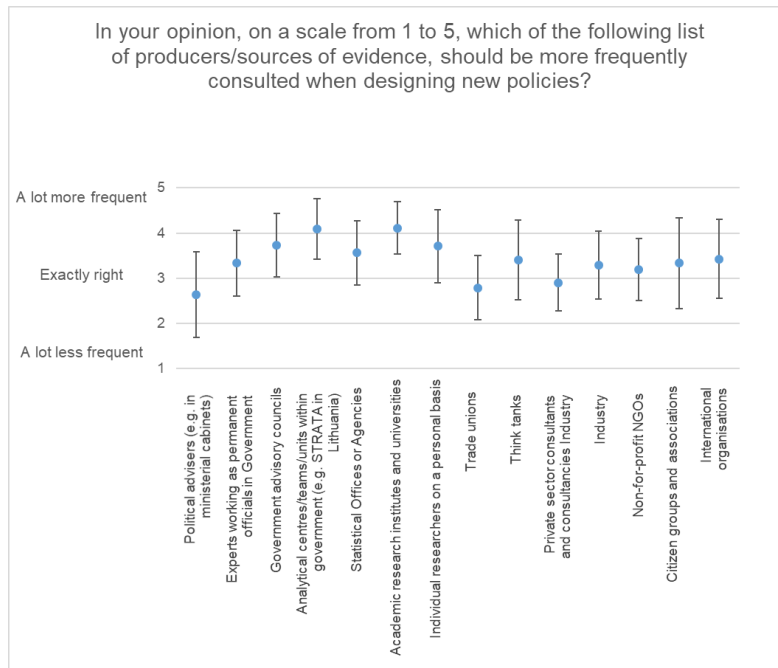


Source: Own elaboration. Plot with means and standard deviation for the qualitative assessment of which type of evidence (listed in the x axis) should be more frequently consulted with a score from 1 to 5: 1 (a lot less frequent), 2 (somewhat less frequent), 3 (exactly right), 4 (somewhat more frequent), 5 (a lot more frequent). Total number of responses varied for each type of evidence from 21 to 27.

We are also curious about the preferred suppliers of potential evidence to get a better understanding of the relationship between the demand and supply side. The government is already receiving evidence from numerous actors and organizations. However, based on the results of the questionnaire there is room for improvement. Again, there is no statistically significant difference between the answers given due to the small sample group

but certain trends can be identified (Figure 9). It seems that there is slightly higher preference for academic research institutes and universities, or analytical centres/teams/units within ministries as suppliers of evidence as compared with political advisers, trade unions, and private consultancies. The outcome, again, might be explained by the respondents' roles in their organisations, but it seems that it also reinforces the notion that the universities and the demand side struggle to come together – even though it is clearly desired by the demand side. We discuss this point in more detail in section 4.6.

Figure 9. Preferred suppliers of evidence



Source: Own elaboration. Plot with means and standard deviation for the qualitative assessment of which type of evidence provider (listed in the x axis) should be more frequently consulted when designing new policies. Each type was given a score from 1 to 5: 1 (a lot less frequent), 2 (somewhat less frequent), 3 (exactly right), 4 (somewhat more frequent), 5 (a lot more frequent). Total number of responses varied for each type of evidence supplier from 29 to 30.

4.3.6 Overview of strengths and weaknesses in the demand side

There are positives and negatives when considering the status quo of the demand side of the EIPM landscape. There seems to be a clear willingness that EIPM is important and that many processes are already framed with it at its core. Yet, there is especially at the leadership level a big obstacle for EIPM to have a bigger impact. The strengths and weaknesses of the landscape are summarized below.

Strengths:

- There is a clear understanding that building the capacity for EIPM is a necessary aspect of successful policymaking in the 21st century. This is expressed in the culture (of low- and mid-level officials) and many regulations/processes.
- Many informal networks are actively supporting EIPM and knowledge sharing across administrative silos, and the Research, Development and Innovation Council (TAN) has received a new push.
- The government is seeking innovative solutions to bolster and strengthen the knowledge of its staff and practitioners (Innovation team, foresight centre).
- The regulated ex-ante impact assessment works well in general, though can depend on the individual case/ministry. However, there is a worrying tendency since recent governments have implemented some ideology-driven, costly policies at a quick pace, with no actual impact assessment.
- The staff is highly motivated to improve and take part in trainings.

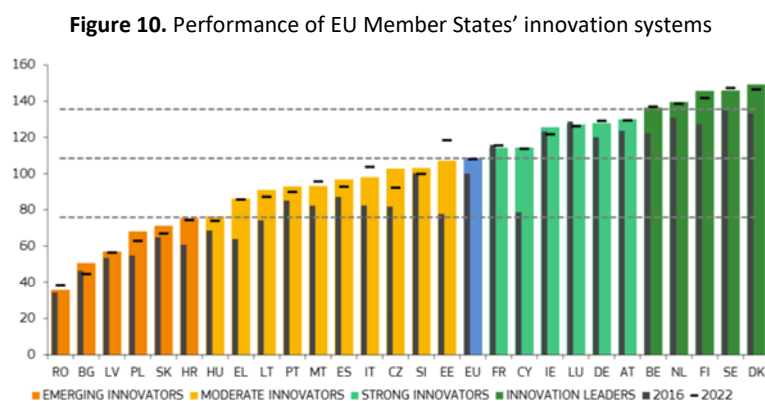
Weaknesses:

- Both public administration and political leadership ignores EIPM too often for efficiency and other political factors.
- The level of data literacy, policy analysis and ability to policymaking seems low. This is a structural problem as education and training opportunities are insufficient in the government and in many higher education degrees. Similarly, there is a lack of well-trained analysts and a big market competence for them which makes retaining good analysts at the public sector a challenge.
- Networks are not fully formalized and often lack a mandate.
- Procurement laws and skills in utilizing them, and structural constraints (timeframe, funding, mismatched expectations) make the knowledge transfer with universities and research institutions very hard.
- There is a lack of ex-post assessments.

4.4 Supply of evidence and science for policy: capacity of organisations within and outside government for evidence-informed policymaking

After having covered the **demand** side for building capacity in EIPM we now turn our attention to the **supply**. We start by looking at the capacity of organisations inside and outside of the government for EIPM. A very important aspect in this is the ability to innovate. This gives us an understanding of the overall level of organisational excellence in the country to increase the capacity for EIPM.

The European Innovation scoreboard¹³ groups EU countries by their level of innovation (innovation leaders - strong - moderate- emerging innovators. In 2023, Estonia is listed there as a moderate innovator with an innovation index score of 98.6 (score 100 refers to the EU average) (Figure 10). The Estonian position has improved strongly compared with that in 2016, although it slightly dropped during 2022. The Innovation Index is a composite index, a product of a number of indicators, including framework conditions (human resources, attractiveness of R&D systems, digitalization), investments, innovation activities and impacts (employment, sales, environmental sustainability). Estonia is strong in human resources, and R&D indicators and employment in innovative enterprises. Relative weaknesses are in resource productivity, government support for business R&D, medium and high-tech goods exports and especially in environment-related indicators (environmental technologies and polluting air emissions) (Hollanders, Es-Sadki and Khalilova, 2023).



Source: European Innovation Scoreboard, European Commission 2023.

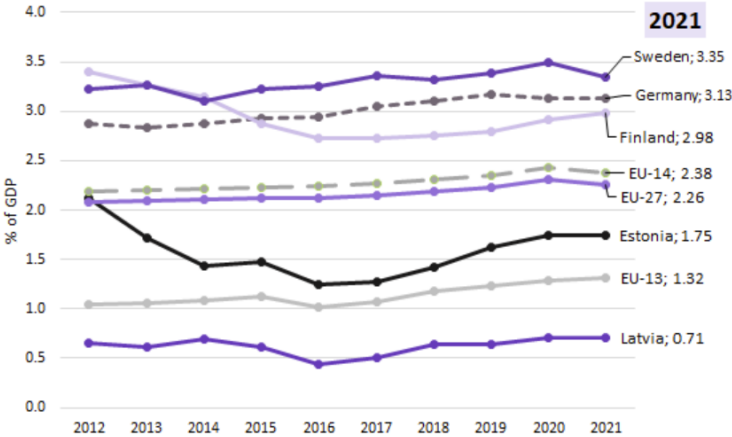
4.4.1 Stakeholder mapping: overview of the key actors for supply of evidence and science for policy

In Estonia R&D spending in 2021 was 1.75 % of GDP (with 0.75% coming from the public sector and 1.00% coming from the private sector), which was slightly above the EU-13 average (1,32) but considerably below the EU-27

¹³ See https://research-and-innovation.ec.europa.eu/statistics/performance-indicators/european-innovation-scoreboard_en.

average (2.26) and far below that of the Nordic countries, The Netherlands and Belgium (Figure 11). Over the last decade the R&D spending showed clear trends - steady decline from 2.31% in 2011 to 1.24% in 2016 following almost steady growth to 1.75 in 2021. It is noteworthy that the national R&D strategy “Knowledge based Estonia” for 2007–2013 set the national funding target of 3% already for 2013. The same target was repeated for 2020 in the next Strategy (2014–2020). Both targets were not achieved. The drastic decline in the middle of the last decade was reversed to growth largely due to the unprecedented political agreement (Estonian Research Agreement, signed in Dec 2018) between all the political parties and the major stakeholders of the research and innovation system.¹⁴ As a result of this agreement since 2020 public spending has been set to 1% of GDP, making it possible to increase considerably R&D funding in line ministries.

Figure 11. Evolution of R&D spending 2011-2021 in Estonia compared with selected European countries

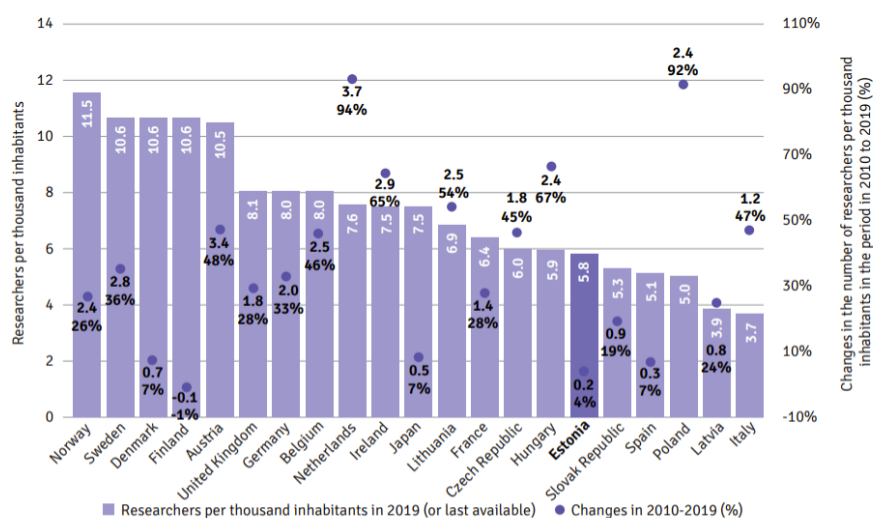


Source: Estonian Research Council, see <https://etag.ee/en/activities/analysis/statistics-rd-funding-estonia/>.

The number of researchers in Estonia per 1000 population (5.8 in 2020) is below the EU average (Figure 12). It is almost two times lower than in Scandinavian countries. More alarming is that while this index has shown considerable growth in the last decade in most of European countries, in Estonia, the growth was marginal. The limited number of researchers sets the limits to them to fulfil all the multiple societal expectations, including providing evidence-based advice.

¹⁴ See <https://www.etag.ee/wp-content/uploads/2019/05/Estonian-Research-Agreement-2018- ENG.pdf>.

Figure 12. Researchers per thousand inhabitants in the EU



Source: Estonian Research Council, (Raudvere 2022, p39).

There are several key actors who supply the evidence and science for policy at different levels, and also can create problems in different levels (see Box 4).

Key actors can be grouped by levels of

6. Public sector:

- (a) Independent state organisations and statistic/data providers: Statistics Estonia, Foresight Center, Estonian Academy of Sciences (provides science advice only, not original research)
- (b) Analytical ministerial units – they can also be considered to be on the demand side at the same time
- (c) Subordinate establishments of ministries: national agencies and national boards who provide special statistics and monitoring the compliance of norms (Environment Agency, Health Board, state-owned research institutes, etc.)

7. Universities: suppliers of evidence can be individual experts/scientist, but larger universities also have applied science units. Estonia has five public universities that engage in research as well as a handful of private institutions

8. Private companies (think-tanks): PRAXIS and CENTAR; and survey and consulting companies such as Civitta, Ernsti and Young, PWC etc.

9. Non-Governmental Organisations (NGOs), such as the Estonian Chamber of Disabled People, Estonian Union for Child Welfare, Estonian Ornithological Society, Employers organisations etc, which provide advocacy and consulting to national and local institutions in different fields.

Box 4. Who has the “right” of doing research in Estonia?

In August 2023 when preparing this report, a large-scale scandal unfolded in Estonia. Pere Sihtkapital, a population policy think tank backed by conservative party Isamaa, with the help of (now former) dean of Tartu University, obtained the information of thousands of childless Estonian women from the Population Register and sent them a questionnaire containing personal and sensitive questions, such as why they do not have children, their political preferences and sexual behaviours. At the end of the questionnaire, consent was asked to link the obtained survey data with other national registry data of the respondent. The Data Protection Inspectorate deemed the survey problematic, and the University of Tartu said the study is not in accordance with good scientific practice and lacked approval from the ethics committee. The study was cancelled, and the database destroyed, but this scandal may have caused real damage that will take a long time to recover.

This scandal also put a focus on the precarious research landscape in Estonia. While research groups at public universities compete for small amount of public funding, a non-governmental organization has the funds to conduct non-peer-reviewed research. In this case, even though Pere Sihtkapital is not on the list of evaluated R&D institutions in Estonia (see full list in Raudvere 2022, p8), yet, it is directly funded by the parliament without competing for the funds with other R&D institutions or having the need for expert peer-review of their research proposal before funding. In this case, research ethics were ignored which often lead to the long timeframe researchers have to abide to, and which does not match with the expectations and needs of government actors. This creates big questions, whether the parliament is interested in ethical sound academic research - which takes time - or is it willing to ignore this to gain results fitting its agenda?

This scandal has caused a strong shock among the Estonian scientific community, together with several public opinion articles in the media, which emphasize the quality of research and the research institutions that conduct it, and also pay attention to knowledge-based policymaking. For example, well-known historians and social scientists Tamm and Realo (2023) point out as important that any state-funded research must be subject to the requirements of an open competition and/or public procurement, and the activities of the ministries as research commissions must be supported by a political agreement that state-funded research must not be used to serve partisan interests. Tamm and Realo (2023) assess the country's activities as gradually improving, primarily thanks to the good work of the science advisers of the ministries and also to the pressure of the scientific community.

4.4.2 Culture, attitudes and understanding of evidence-informed policymaking

4.4.2.1 *Changing or still building the culture?*

The most important part concerning culture was rather substantive and emphasised: there is a need to start with the broader and agreed-on understanding, what science advice overall means at the first place considering Estonian science history, institutions and as well as the semantical landscape of some concepts. In some way, the need for establishing common ground was reflected in almost all interviews, which stated in different wordings that "the pieces of the EIPM puzzle are all there, but they have not yet been put together perfectly". In the context of culture, respondents also emphasised the need to change the funding schemes to consolidate budgets from different ministries to one bigger call and the need to encourage ministries to "let go" some funds and control. This issue will be on the agenda on one of TAN-s forthcoming meetings.

The long-delayed process of the new Organisation of Research and Development Act (TAKS) also points to the fact that the scientific community and policymakers in Estonia are still moving towards common agreements of the conceptualization and legal foundations of the entire scientific field. The proposal of the new TAKS was made in autumn 2020, three years ago, but the process has stalled for various reasons, and it is difficult to predict when the act will be brought to the parliament. Since several people we interviewed are involved in TAKS processes, this project provides an opportunity to add some important outcomes to the new TAKS.

4.4.2.2 *We do what is obligatory*

Positive long-term trends were pointed out by most respondents about the overall culture and habits of planning policy decisions based on science or evidence. As for good practices, the RITA funding programme with the network of science advisers and the (2012) obligation to carry out ex-ante regulatory impact assessments (RIA) on new law proposals and development plans are both worth mentioning. This process is led by the Government Office and the Ministry of Justice, who provided the common methodology, and offer advice in this regard to those preparing development plans, if necessary¹⁵.

The interviews revealed that RIAs fall into a grey area - it is not always clear how much of them require the use or collection of new scientific data, and therefore whether RIAs are even eligible for funding from the R&D budget (most of them are not, and their cost would not be included in the 1% GDP for R&D funds) and whether it should be conducted externally or rather be done by the ministry's analysts themselves. Ministries reported different

¹⁵ See section 2.3.1 for more details.

approaches to this matter. There are examples where RIAs are ordered via public procurements to external providers, to subordinate institutions of the ministry or were done by the ministry's analysis units themselves.

Another aspect is the unequal quality of RIAs. Sometimes, they tend to be quite “thin”, consisting of superficial notions that “there is no impact in this or that area”.

As there is no obligation for ex-post impact analysis, they are not conducted regularly, nor is there a common methodology for ex-post RIAs.

4.4.2.3 “Ministers are [only] open to advice, if they haven’t decided yet”

In the orbit of interest of politicians, general topics related to science policy tend to remain on the periphery based on the opinion of interviewees. As an example, interviewees described the apparent lack of interest in the annual parliamentary science conference¹⁶ hosted by ETAG together with the Parliaments' Cultural Affairs Committee, Rectors' Conference, Estonian Academy of Science (ETA) and Estonian Young Academy of Sciences (EYAS), where only a handful of politicians was reported to be in the audience. The interviewees estimated that out of 101 members of the current parliament only about 10% are very interested in R&D issues, and about 30% are interested to some extent.

On the other hand, with “hot” substantive policy issues (for example, almost all the interviewees brought up the current debate of harnessing the forest resources in Estonia), the positions of researchers in specific fields with different motivations are used in politics, even playing them against each other in the media. Respondents with long-term experience pointed out that the window for approaching politicians with scientific advice is narrow and depends on the election cycle. Communication with politicians also requires good preparation. Respondents had different opinions on whether politicians should be included in substantive scientific discussions or whether they should only be presented with specific scenarios (preferably several different ones to choose from). Some respondents felt that politicians are not competent to discuss scientific issues, but there were also examples to the contrary. One thing all respondents agreed on was that, as a rule, politicians simply do not have time to delve into topics and also lack support staff with scientific competences. In Estonia, there are also ministers who have political scientific advisers, but this is not a very common practice.

From the universities’ side, it was pointed out that researchers sometimes feel frustrated and disappointed when their advice is not considered. At the same time, respondents stated that not all researchers are sufficiently familiar with the policymaking process in general. University representatives also feel a moral responsibility to establish and maintain contact with policymakers and exchange information, but just like politicians, university researchers are also very busy and there is simply not enough time to participate in all worthwhile initiatives.

As a major issue the conflict of interests of scientists was brought up. In most cases scientist have difficulty to understand clearly their role in the advice mechanism and policymaking process. This leads to the situation, where scientists may act as the advocate of their own scientific field/institution, rather than being an independent expert or knowledge broker, thus mixing advocacy with advice activity.

4.4.3 Inter-organisational coordination mechanisms for evidence and science for policy

The main organization that connects the research universities in Estonia is the Rectors' Conference (RC). The RC is an NGO that brings together all rectors of Estonian public universities. This is a small circle of just six members (Estonian Academy of Arts, Estonian Academy of Life Sciences, Estonian Academy for Music and Theatre, Tallinn University of Technology, Tallinn University and University of Tartu).

The RC does not do research nor provides science advice but draws attention to the organizational aspects and bottlenecks of research and higher education that all universities in Estonia are facing. This is of importance because research and higher education institutions are treated separately, including when it comes to funding, which causes some administrative challenges. At the same time, these fields of research and higher education are both interwoven at the university. As universities vary in size, there are no good one-size-fits-all implementation schemes. It was pointed out that although the universities have become very good at attracting foreign money through projects, the number of employees has not increased, so the support staff may be overburdened.

¹⁶ See <https://etag.ee/tegevused/uritused/teaduspoliitika-konverents/>.

Furthermore, RC collects and makes public the data on universities thus providing material for further analyses. RC is a good platform for universities for benchmarking and coordinating their actions.

For these reasons, RC is a strategic partner in policy design and implementation for HTM. However, their main role is mostly that of an interest or advocacy group for research and higher education policies. Their direct involvement in science for policy beyond RDI policies is not fully explored, also due to limited resources and because it is out of their foundational scope.

Some university representatives interviewed also pointed out that since there are few employees in universities (both academic staff and support specialists), the “best ones” are always overloaded with university responsibilities but also social and public ones. They are also often highly sought after by the private sector or institutions abroad and it remains difficult to keep them.

Our findings reveal the need to involve universities in EIPM based on a greater cooperation. Universities themselves may not have the funds to build and sustainably finance a network of advisory experts and there are currently no good incentives in the research system that would value science advice, for example, on an equal footing with writing research articles or even shouldering administrative tasks.

Box 5. Cross-Sector Mobility Programme (SekMo)

The Cross-Sector Mobility Programme (SekMo) is funded by the State Shared Service Centre (SSSC), which is a government agency under the administration of the Ministry of Finance, but the application process goes through ETAG. SekMo aims to: (a) promote cross-sectoral knowledge cooperation through the intersectoral mobility of staff and (b) encourage cooperation between Estonian R&D and higher education institutions and Estonian private, public and third sector organisations.

Three mobility schemes can be funded under the programme: (a) mobility of a researcher to the private sector, (b) mobility of a top professional to a research institution, and (c) a knowledge transfer doctorate - a tripartite cooperation between a private, public or third sector institution/company, a university and a doctoral candidate, where the doctoral candidate enrolled in a doctoral programme has an employment or service relationship with a company, public or third sector institution, the main content of which is research and development in the field of the doctoral thesis of the doctoral candidate and in accordance with his/her individual study and research plan¹⁷.

The current SekMo program is for 2021–2029, goals have been set to involve 600 participants and create at least 50 new research positions in the private sector companies¹⁸.

University representatives commented during interviews that considering the first scheme, the biggest problem with SekMo is that even if the university is willing to take the researcher back after a couple of years of working in the private sector or any government department, the researcher has a publishing gap and is no longer competitive in national or international funding schemes. Since project fees make up most of the researchers' salaries, universities would need additional funding to pay the researchers until they "get back on their feet" with publications and are able to bring in the next grants. University representatives also mentioned the other back side of cross-sectoral mobility. Due to the differences in salaries the mobility may end up as a one-direction road if the universities are not able to provide competitive salaries. It was mentioned in the interviews that some researchers also work at the public sector and share their time between two employers. Salaries in public sector in Estonia are also higher than in universities.

4.4.4 Organisational capacity for supply of evidence and science for policy

The major evidence-supplier institutions outside the government are public universities. All universities claim in their mission statements that along with advancing science and providing higher education, serving society is one of their major targets. One key element of serving society is providing evidence to the public sector. In general, these activities are encouraged in the universities, but we examined very few examples of systematic approach how to help academics and incentivise these activities.

¹⁷ See <https://etag.ee/rahastamine/mobiilsustoetused/sekmo/>

¹⁸ See <https://www.rtk.ee/uudised/riik-soodustab-uee-toetusmeetmega-teadlaste-tippspetsialistide-teadus-ja-arendusasutuste-ja>

These topics have attracted more attention recently and in some universities the incentives are being developed and planned to be brought into the career model.

4.4.5 Individual capacity: competence, training, and resources of evidence suppliers

According to the JRC competence framework for innovative policymaking, the seven competence clusters include (1) advising the political level, (2) innovating, (3) working with evidence, (4) being futures literate, (5) engaging with citizens and stakeholders, (6) collaboration, and (7) communication (Schwendinger, Topp, and Kovacs 2022).

The characteristics of all these clusters were in general also mentioned in the interviews as necessary for science advisers, but as mentioned before there is currently no regular training module available for science advisers.

Additionally, no specific training course for scientists in research and higher education institutions to maximise their policy impact has been reported by survey respondents or interviewees.

4.4.6 Overview of strengths and weaknesses in the supply side

The supply side consists of different level institutions which could be seen as strength and weakness at the same time. Different organisations guarantee that “all eggs are not in the same basket”, and in case of some problems in one level, the others could still contribute and produce necessary information. On the other hand, as the supply side is quite fragmented, getting a comprehensive overview of some specific area may be time-consuming, and there may be overlaps of planning/procuring research on the same topics. At the same time the research conducted in Estonia is not always linked to the demands of society

Strengths:

- Political agreement for 1% funding of R&D has been achieved and kept.
- Willingness to nurture a culture across organisations to improve EIPM.
- Both the public sector and the university sector perceive their duty to participate in EIPM, maintain cooperative relations with ministries and to promote science advice.
- Awareness of already adopted laws, norms and proper compliance with the rules in the public sector among policy-makers is high which can be put in good use to develop a more effective EIPM system.

Weaknesses:

- Sustainability of the system due to the relatively small number of researchers, insufficient succession, or not covering all scientific disciplines.
- The change of culture within the scientific community for increasing the impact of their scientific research into policymaking (via knowledge valorisation, science for policy and EIPM), is still in process.
- Sometimes questionable political will to implement evidence-informed decisions generate tension and frustration within the supply side (both within government and in the scientific community).
- Not enough incentives in the career model for researchers to be motivated to give science advice
- Lack of regular trainings for science advisers and researchers on EIPM
- Uneven and sometimes even weak quality of the research. This is the most evident problem in short term procured research.
- In the light of recent events in Estonia, the overall trust in science and ethical behaviour of scientist are under pressure.

4.5 Where supply and demand meet: established processes and policies within government for evidence-informed policymaking

This section will reflect on the role of domestic core public policy processes (such as Better regulation processes, regulatory impact assessment, policy evaluations, budget and resource allocations, anticipatory governance and strategic foresight, science advice, etc.) together with some overarching European commitments and processes underpinning semester evaluations, structural funds, recovery and resilience plans, etc.

4.5.1 Science advice

4.5.1.1 Ministerial network of science advisers

The creation of scientific adviser positions in ministries was called a "success story" by almost all interviewees, and no one doubted the necessity of these positions. But the fact that they were called "science advisers", "research-development advisers" and "research coordinators" in Estonian is quite telling (there does not seem to be a common English job title either – see Annex 3 for reference). This could be considered a purely formal problem, but the job positions differ a lot in substance as well across governmental departments, which makes it more difficult for science advisers to function as a unified network that is working on the same principles. Annex 3 provides an overview of the placement of scientific advisers in the structures of ministries as of July 2023. Science advisers working in strategy or budget departments have easier access to the budget and shorter chains of command to make or influence decisions. Regardless of their location, all science advisers are united by the problem of high workload and "position-wasting" tasks such as drafting procurement documents and project management. Currently only the Ministry of Justice does not have any "official" appointed science adviser, but the ministry is still represented in the RITA network of science advisers via other positions. Ministry of Culture, on the other hand, have always funded the position of science adviser from their own budget, but still take part in RITA network activities for science advisers.

Since each ministry is independent in setting up its own structure and personnel policy, it is not likely to create uniform requirements for the recruitment of science advisers (except for the requirement of education and previous work experience). However, certain personal characteristics could be considered, which facilitate coping in the position of knowledge brokers between researchers, policymakers and, in some cases, politicians.

"This person needs to be strong [and] charismatic to sell both sides and to be in in between because the [some oppositions] intrinsically will never disappear. So, the person in the middle of that needs to be like bossing around both sides a bit to make something meaningful happen."

There is a high staff turnover among science advisers, but this is also a concern in the Estonian public sector in general. Several science advisers have returned to research institutions, and there have also been rotations to other positions within the ministry or to another ministries. Respondents admitted that constant staff turnover is a challenge for the operation of the network of science advisers and building trust amongst the members.

During the interviews, the possibility of adding another hierarchical level to the network in the form of national Chief Science Adviser was discussed and different opinions were expressed on this, referring to legal aspects that each adviser is still under the authority of their own ministry and the informal nature of the network.

"Well, I think that it doesn't work in the sense that who can give orders to other ministries on how to do things or what to finance? It can't be Chief Adviser. It is also not the intention of the [advisers] network that decisions are made somewhere else. The goal is still to keep the informal network going."

Instead of one Chief Science Adviser, most interviewees signalled the need to strengthen the positions of current ones to break through the management level of each ministry.

"I think that a scientific adviser should actually advise the minister. They [science advisers] are too far from the Chancellor. There should be somewhere closer."

4.5.2 Estonian Academy of Sciences and Estonian Young Academy of Sciences

According to the respondents, the Estonian Academy of Sciences (ETA) is an organization with a good reputation and mandate on the Estonian scientific scene, but its strategic aims may not be so well perceived now. One respondent suggested that ETA could provide quality control in the larger EIPM projects. The interviewees recognized the presence and activities of the current President of ETA, but also expressed concerns about the overall sustainability of the organization. At the moment, ETA is going through some structural reforms to be more responsive to society's needs, to facilitate the provision of appropriate science advice and to be more present in the public debate of policy issues. One challenge is a rather low activity due to the high average age of the members. As an organisation, ETA wishes to hold a politically neutral position and refrain from lobbying for any particular option.

The Estonian Young Academy of Sciences (EYAS) was mentioned by several organisations as a good trustworthy partner in different projects. Although related somewhat closely to ETA, legally, EYAS is an independent NGO which seems to allow young researchers to engage more vigorously in activism and lobbying activities.

However, ETA and EYAS are still mostly perceived at large as advocacy bodies for the interests of the academic profession. The role of these academies in EIPM in activities such as raising awareness and building capacity across the scientific community to maximize their policy impact, or engaging in providing proactive or reactive advice in policymaking at an operational level, could be explored. An active involvement of both academies will make it possible to reach out to Estonian researchers of different age groups and working in different fields, contributing to an overall change in the supply side in the understanding of EIPM. The formats and potential effects could be further discussed.

4.5.3 Strategic foresight

The Foresight Centre (FC) – an independent think tank at the *Riigikogu*¹⁹ was established in 2017. The respondents were mostly familiar with FC and its work and were generally satisfied. However, the evaluations differed. While most respondents could not give any specific examples of cooperation with the FC and could not answer if and when they planned to use the reports prepared by the FC, some pointed to the more active involvement of FC in policy analyses of the ministries, as for instance the cooperation between FC and HTM on higher education reform and the skill force for teaching. Independence of FC from the government was brought up as an asset, allowing FC to express opinions and statements.

One political party in the *Riigikogu* thinks that the FC's work is politically biased, unable or unwilling to understand the facts and the evidence-based approach of the FC analyses. The impact of FC on policy processes is in raising topical problems and formulating messages, some of which are taken up by political parties.

According to FC own analysis more than 40 of their messages were included in the political parties' programmes during the last public election campaign. As an example of recent messages brought up by FC was that the National Health Fund will run into severe deficiency by 2035, and the other easily understandable message was that the ecological footprint of an average Estonian transgresses the planetary boundary by 3.8 times.

FC predominantly uses scenario analysis as a method but does not carry out follow-up or RIAs on its previous topics/reports.

There is a problem which has been brought up in relation to FC, but which is common to almost all the analyses/reports, made by different stakeholders. This is the accessibility of data. At present, the data is scattered and difficult to find. This leads to repetitive studies and a waste of resources. Fortunately, GO is dedicated to creating an easily accessible and user-friendly repository for this kind of reports/analyses.

Beyond FC, strategic foresight methods are yet rarely used in EIPM in Estonia, but this could be due to the unfamiliarity of its methods and lack of training. One great example of using innovative methods in policymaking is the work by the Innovation Team²⁰ in the Government's Office's Strategy Bureau but located physically in the Joint Ministry building to collaborate closely with all ministries and their subsidiaries (for further info, see section 4.3.4). The team was created in 2018 as an experimental joint initiative of six ministries. To date, all eleven Estonian ministries have joined this initiative.

4.5.4 Data access and use in government

4.5.4.1 Statistics Estonia

In relation to data, the following major topics emerged in the study: (i) "owners" of the thematic statistics/data, sustainability and financing of data collection; (ii) data quality; (iii) legal aspects of data usage and linking; and (iv) user-friendly interfaces and apps (ownership and financing).

Statistics Estonia (SE) is currently the collector and keeper of national statistics but not the "owner" of various sectoral data. When planning its budget, SE is based on the obligations arising from the law, which prioritizes the collection of statistics submitted to Eurostat in a mandatory manner. Regarding the rest of the statistics, SE

¹⁹ See information on <https://arenguseire.ee/en/about/>.

²⁰ See <https://www.riigikantselei.ee/innotim>.

perceives its role as a service provider. In the case of all kinds of thematic data and special studies, ministries must apply for funds through their own budgets. In recent years, SE has also contributed its own budget to develop and maintain various apps and user interfaces but, without additional funding, they are not sustainable, as it is necessary to update data for a functioning application constantly.

Although the discrepancy of timeframes between policymaking and scientific research is widely recognised as a major challenge for EIPM, data quality has also been referred as another hurdle. This was particularly noticed during the Covid-19 crisis, and to the fact that policymakers do not always perceive the importance of data quality.

“/.../ they said like: “Never mind the quality, the speed is more important, leave the statistical error in. I don't know plus minus five, 6%, it doesn't matter in our decision”. But maybe today it doesn't matter, but I mean, if you're doing this in long term, this [error] will be there, and grow eventually”.

According to the law, universities and R&D institutions have the right to request more detailed statistics for use in research and linking of different databases/registries than ministries. Since obtaining data is a legally complex process, requiring permission from the Data Protection Inspectorate and, in some cases, the Ethics Committee, there are sometimes ways to circumvent this.

4.5.4.2 Need for one-point access

Considering data storage, and reusing databases, the respondents agreed that the state currently lacks a safe and user-friendly one-point-access system for databases and reports. The discussions of this project have already started. SE has developed several apps for better data presentation but admits that ministries are not fond of financing the upkeep of those innovations. Unfortunately, SE does not monitor the user statistics of these applications.

4.5.4.3 Data warehouses

Different interviewees showed concern about data storage practices in public sector organisations and the existence and proliferation, with data warehouses not living up to the quality standards of official statistics since the Covid-19 crisis, as one of the respondents pointed out:

“And for the COVID purposes, everybody cut corners and got the information together. But now with the normal circumstances we are back to the situation where we have data like in 6 months or in nine months or in 12 months and sometimes this leads to this, that you go and try to get the data yourself directly from your registers. In your responsibility area in the ministry, you may have one or several agencies with one or several registers, so you'll go directly there. It also has led to building [data] warehouses in those agencies which are kind of outside the GDPR. Which is a big problem because in a way, people still think that getting quickly the data is more important than protecting the privacy or quality.”

These concerns, together with some recent scandals related to the use of registers and data (see Box 4), point towards ensuring the maximum quality standards of official statistics and GDPR.

4.6 Research policy frameworks and funding plans in support of evidence-informed policymaking European commitments and plans

4.6.1 Horizon Europe

Participation in Horizon projects is not very common among ministries, although they are more active in European Partnerships and missions. It is only possible (considering knowledge, money and time) for ministries with a special department for R&D activities or, in case, there are people with research competence and experience also among the officials of the other departments, for example, such a capability is currently available in the Ministry of Climate. Estonian scientists are otherwise very successful participants in the Horizon 2020

projects. On average a researcher based in Estonia received almost twice the funding than a researcher in other EU countries.²¹

4.6.2 National funding for research

According to the law (TAKS) HTM is responsible for funding general research (universities, state research institutes and competitive research programmes – via implementing organisation, ETAG). All line ministries have the right to set up their own scientific research agenda and the obligation to provide funding for that. Until recently, very few ministries had the capability or tradition to do that. The few exceptions were the ministries which have had their own research institutions for decades: Ministry of Regional Affairs and Agriculture has Centre of Estonian Rural Research and Knowledge, which was created since the beginning of 2023 by merging two institutions - Institute of Crop Research and Agricultural Research Centre. It covers the fields of plant breeding, soil, agrochemistry, environmental monitoring, and socio-economic research. Ministry of Social Affairs has the National Institute of Health Development, which is engaged in public health research, health promotion, development and implementation of disease prevention programmes, and administration of national health statistics and several population-based registers and databases.

One reason of the low capability of managing their own research agenda in line ministries was the lack of competence and the lack of dedicated funding. Two major things changed the situation. Firstly, the creation of the RITA programme, which provided dedicated funding for ministerial R&D projects and allowed to build competence by creating the RITA science adviser positions in the ministries and secondly, more recent developments, securing a dedicated research budget for line ministries starting in 2020.²² However, the latter is not smoothly integrated into the budgeting practice of the ministries. Ministries depend on the overall state budget process for planning their research budgets. As a rule, the research budgets do not fit into the base funding of the ministries but are allocated with additional budget requests, the procedure of which takes place only in the spring. Considering that the state budget is drawn up annually, the funding decision given only at the beginning of the second half of the year means that there are only a few months left for both the procurement of the study and the substantive research activities. The respondents, both on the demand and supply side, agreed unanimously that such conditions do hinder high-quality research and do not entice good researchers to cooperate with ministries. In fall 2023, a pilot project will begin where some ministries combine their funding for a first larger joint call distributed by ETAG. The interviewees had high hopes for this approach to be successful and to continue on a regular basis (for example, to have each autumn a joint ministerial call like ETAG has its national calls in spring). Without funding security, ministries cannot make (or at least disclose to interested parties) strategic plans for research and development activities. Legally, the process of the state budget and the implementation of the necessary changes in the R&D activities are under the Ministry of Finance, which, according to the respondents, has not been inclined to deal with this topic

The current state budget process creates a vicious circle, where ministries do not feel safe in the strategic planning of R&D activities, but can only focus on short-term projects, which often do not produce high-quality results due to lack of time and unwillingness to change existing practices. However, all this in turn affects evidence-informed policymaking as the rushed reports do not provide information that is actually needed. Ministries may not be aware of the fact that the quality of research is directly linked to subsequent abilities to support policymaking, the quality of public services and the satisfaction of citizens. This is why long-term commitments need to be possible that would enable the long-term fulfilment of Estonia's strategic goals.

4.6.3 RITA programme

The *Rligi TA programm* or RITA programme (2015-2023) can certainly be considered one of the most important strategic measures for evidence-informed policymaking. In this framework, the science adviser positions at the ministries were created and funded, and a significant amount of funds was directed to Estonian science (researchers) to conduct nationally important applied research to support policymaking. The official impact assessment of the programme (Espenberg et al. 2020, pp 38–39) gives a positive evaluation of RITA, especially for the public sector and research institutions. The report concludes that most of RITA's activities should be

²¹ Per Study in Estonia (2021):

https://studyinestonia.ee/sites/default/files/Universities%20in%20Estonia_210x148mm+5mm%2027.01.2021.pdf

²² After the Government decided to increase the R&D funding according to the Estonian Research Agreement, it also agreed to the suggestion of the RD Council to use the funding increment in proportion of 40:40:20 (HTM- research: MKM – D and I: line ministries)

viewed as long-term and strategically important public sector functions and their financing from structural funds as a seed investment: a critical future challenge will be the continuation of RITA's activities from the state budget funds of the sectoral ministries. (ibid.)

Programme RITA+, the continuation of this successful programme, will officially start in the fall of 2023, but with a changed content compared with the previous one. From the point of view of the ministries and ETAG, the end of the ministerial funding scheme for small-scale sectoral applied research projects (so-called RITA2) seemed to be one of the concerns.²³ These funds are now replaced by the direct budgetary allocation from ministries, with RITA+ only continuing with projects that have an overarching strategic importance for Estonian policymaking. However, based on the interviews, it could be assumed, that maybe there were some shortcomings how the terms of the new programme were negotiated with all involved parties.

With the mandate of the national R&D policymaker, the HTM is under a lot of pressure to initiate fundamental changes involving all relevant parties and taking into account different interests. Looking at this "ecosystem" from a distance, in addition to organizations, certain key persons also play a very large role, within their boundaries of power. The interviews indicated some problems of interpersonal communication with key persons in the system. These topics are also directly related to the mutually un-negotiated expectations and semantic-philosophical framing for science advice system in general, which was described in the section 4.5.1 of this report. In the current situation, where there is still a struggle with adequate science funding in Estonia²⁴ and considering how small a country it is, personal relations and feelings play considerable role and thus have to be considered. Rebuilding trust among key stakeholders and co-creation of solutions considering all actors and organisations seem necessary to moving forward successfully.

4.6.4 European commitments

European commitments and following EU regulations play an important role in Estonian policymaking in general, promoting structural changes for public governance and research activity because of the support to new activities but also the associated requirements for such a support. Indeed, EU funds are used for R&D activities too, for example funding RIA of (new) policies from European Social Funds (ESF). Also, one condition for funding RITA2 projects was to link the research questions to strategic national and/or EU documents.

EU institutions also play an important role as customers, for example Eurostat requests information and supports Statistics Estonia (SE) to a higher intensity than other domestic partners.

Respondents also mentioned that when drawing up annual R&D budgets, sums for co-financing to collaborate in EU projects are prioritized over new local research projects and co-financing is sometimes also covered from other sources to prevent the rivalry with other projects.

Although the European commitments are valued highly, some complaints were noted around R&D activities and research questions being rather reactive or just obeying the already made commitments. These aspects may hinder the proactive search of possible future scenarios and certain innovation capacity to think out of the box.

"But what we also lack now is the consideration and screening of priorities for the future, and it really requires a bit more work, for example to monitor what the European Union [issues] on their quarterly reports. There they bring out, for example, all kinds of future technologies to assess. /.../ As far as I know, that's absolutely not what we're doing /.../ Our R&D priorities are based on our current problems, but don't think too much ahead. Presumably, the competence and this responsibility could be in ETAGs strategic analysis department"

4.7 Concluding diagnosis: capacity, linkages and policies

Overall, the Estonian EIPM system is working reasonably well. The structural changes in the public funding of R&D in recent years have contributed to the stabilisation of the system and have made it possible to engage more in longer-term strategic planning. The empirical study carried out for the diagnostic report showed the

²³ The list of all funded 115 researchers funded from RITA2 is available here: <https://etag.ee/rahastamine/programmid/rita/rita-teadmisepohise-poliitikakujundamise-toetamine/valminud-uuringud-rita-2/>

²⁴ Despite a 1% agreement on research funding, university pay levels are very low as a result of years and years of underfunding.

commitment and willingness of the actors in the system to address the remaining bottlenecks. A number of structural barriers can be identified on both the demand and the supply side. Not all of them can be addressed in the context of this project. These problems can be tackled at the individual level, in terms of the work culture of organisations and human resources policies (necessary professional training, issues of job allocation and workload, etc.). At the same time, bottlenecks related to legislation and political will (new TAKS process, national budget strategy) may be more difficult to address.

4.4.7. Strengths

4.7.1.1 Strengths of the Demand side

- There is a clear understanding that building the capacity for EIPM is a necessary aspect of successful policymaking in the 21st century. This is expressed in the culture and many regulations/processes. Overall attitude of all sides, demand, supply and intermediators towards EIPM is positive, they are ready to cooperate for common goals.
- The general structure of the EIPM system is almost in place - “all the puzzle pieces are there” - no need to create new institutions, only to clarify and/or strengthen the mandates and facilitate cooperation.
- At large, the introduction of the science advisers is seen as a great success.
- Many informal networks are actively supporting EIPM and knowledge sharing across administrative silos, and the Research, Development and Innovation Council (TAN) has received a new push.
- The government is seeking innovative solutions to bolster and strengthen the knowledge of its staff and practitioners through good case practices such as the Innovation Team, or the Foresight Centre.
- There is willingness to take leading position in coordinating and developing the EIPM system by Government Office.

4.7.1.2 Strengths of the Supply side

- Reputation of science among the general public is high.
- Research and development funding has been made a priority by all political parties.
- Some universities have outlined plans to incentivise science advice, to include these activities into the academic career model.
- Despite the heavy workload, people working in the scientific system are mostly enthusiastic, open to new ideas and perceive the importance of seeing the big picture.

4.7.2 Weaknesses

4.7.2.1 Weaknesses on the Demand side

- Both public administration and political leadership ignores EIPM too often for efficiency and other political factors. This is due to attitude and lack of knowledge, of how evidence works and can be used for policy.
- Process of state budget, procurement law and structural constraints (timeframe, funding, mismatched expectations) make the knowledge transfer with universities and research institutions very hard.
- Attitude and knowledge of science advice are unevenly spread and, in general, low among politicians, who have difficulties and/or lack incentives to engage with long-term problems. Therefore, the messages from the advice side does not reach them or if they do, they do not have enough influence.
- The level of data literacy is low, and education and training opportunities are insufficient in the government and the country. The continuation of necessary training programmes initiated with the support of European funding is problematic.
- Networks are not formalised enough and often lack a mandate. Unclear future of the RITA network and the position of science advisers in the ministries. Tensions between the partners regarding who is the best in developing and coordinating this network.

- The skill to set up fruitful research tasks is low or lacking in the authorities, especially if the problems are multi-faceted and need interdisciplinary approach.
- High staff turnover in the public sector, including amongst science advisers.
- The process of the new TAKS has stalled and hampers possibilities to advance EIPM system.
- Scattered system of science advice (personal contacts vs procured research), combined with the lack of culture allow politicians with differing opinions to openly play scientists against each other.

4.7.2.2 Weaknesses on the Supply side

- Information on the existing surveys, reports, and policy analysis is scattered and not easily found. There is no central and easily accessible repository.
- There are no academic incentives to engage in science for policy activities (science advice, secondments, etc.) and the research organisation does not receive any support (recognition, budgetary, etc.) from public administration when it happens.
- Role conflict of scientists, while giving advice there are difficulties to distinguish between the role of neutral adviser and lobbyist for the research field/institution.
- Scientific networks and organisations, such as the Rectors' Conference, the Academy of Sciences or the Young Academy of Sciences, are yet perceived primarily as advocacy group, even though there are some initiatives to raise their profile in EIPM. At the moment, no scientific organisation has specialised itself in occupying a niche to closely collaborate with policymakers.
- Quality of the research for EIPM varies, control of science advice is low or sometimes missing.

4.7.3 General observations for both, demand and supply side

- Despite the heavy workload, people working in the Estonian science-for-policy ecosystem are mostly enthusiastic, open to new ideas and perceive the importance of seeing the big picture.
- Both the supply and demand side are struggling with understaffing, poor time management and overwork.
- The system largely has all its pieces and processes in place: advisory councils, networks of science advisers, foresight centre, Innovation Team, ex-ante impact assessment, etc. Finding common ground for strengthened collaboration and building synergies across actors is required to navigate any current frictions and conflicting interests.

5 Needs and gaps assessment report: strengthening EIPM in Estonia

5.1 Executive summary

This report features the needs and gaps assessment for evidence-informed policymaking (EIPM) in Estonia's Science for Policy (S4P) ecosystem. Overall, it is established that the Estonian S4P ecosystem is mature, and much work has already been done to promote EIPM in the Estonian public administration. However, it needs to be stressed—and this is the main message of this report—that the capability and political will to include evidence in policymaking is distributed unequally across ministries and agencies. This report engages with this problem in five different areas, roughly corresponding with the topics of discussion of five focus group conducted during November-December 2023. This document attempts to unearth recommendations bringing in good international case practices to inspire and promote change at the national level. The five areas are: (i) the need to increase the influence and legitimacy of science advisers and science advice networks (report section 5.3); (ii) the lack of incentives and structures for the scientific community to engage in policy advice (section 5.4); (iii) the underrepresentation of Strategic Foresight (SF) practices across the government (section 5.5); (iv) the disregard of innovative policymaking in light of standard approaches (section 5.6); and (v) deficiency in understanding knowledge needs and access to support services in government ministries.

The report outlines these problems in detail, covers a selection of identified needs and gaps, and each section ends with a list of recommendations. This executive summary highlights five major recommendations that do not necessarily need considerable increase of designated resources, but rely on higher inter-organisational cooperation, an increased will to use the existing ecosystem and means more effectively, and slight reforms (e.g. changing roles and responsibilities of current staff). The recommendations are listed hierarchically according to **their potential to impact** on the Estonian S4P ecosystem:

1. Ensuring **clarity of advisory bodies and a political mandate to the role of science adviser** with (potentially) even the upgrade to chief science adviser and **strengthen the role of a coordination body of the network** at the Government Office and/or the Estonian Research Council.
 - a. The **TAI koordinaatsioonikogu** (Teadus- ja arendustegevuse ning innovatsiooni koordinaatsioonikogu - *Research, development and innovation coordination body*) needs to receive the mandate to fulfil the **strategic role of coordinating research activities across the government and the ministries and can be used to provide clarity about the purpose of each committee, council or network of science advisers**.
 - b. Developing a **career model for science advisers** as well as to create a **training programme and a code of conduct or guidelines for science advisers** that increase their competences and the ministries awareness of the role and model their expectations, respectively.
2. Establishing the use of **Strategic Foresight (SF) methodology as a requirement** in public sector when preparing strategic plans in ministries.
 - a. Government Office could promote the **use of Strategic Foresight by appointing a foresight coordinator at the Government Office and by motivate ministries to undertake SF analysis for their ministerial strategic documents** (especially for horizontal links) similarly as the case of mandatory methodology for impact analysis. The Ministry for Education and Research could encourage the **use of SF methodologies** in line ministries R&D planning and procured foresight-based research projects.
 - b. The above cannot be achieved without **further awareness and training to use SF methodologies across line ministries**. The Foresight Centre already has some ad hoc collaborations with ministries, but it is mostly dependent on parliament. As such, the Foresight Centre can help to nurture a Strategic Foresight culture and build governmental capacity.
3. Providing **better support and incentives for the scientific community** to play a role in the S4P ecosystem.
 - a. Universities with the support of the BOs could **work together to include S4P within a comprehensive assessment framework** in regular evaluations of academic staff as well as those research performing organisations, which have established or piloted policy impact units, science for policy units, or other research management positions specialised in knowledge valorisation to public administration.

- b. **To develop inter-sectoral mobility schemes that allow researchers to work in public administration**, potentially supporting those units where science advisers are deployed, **and training programmes** for raising awareness of science for policy among the scientific community.
- 4. Direct more attention to the support services of the EIPM at each ministry to better understand **knowledge needs and funding stream options** better.
 - a. Developing an **established protocol for the identification of knowledge needs** inside ministries to provide and publicise them periodically to make it open to the wider scientific community. The process can be led by ministerial science advisers and alongside it, the ministries can **compile more success stories and positive narratives for S4P** and EIPM to spread in public media **to raise overall awareness and show researchers' impact**.
 - b. **Systematising and tailoring** these identified knowledge needs according to the **different available funding schemes**: public procurements, public procurements with R&D exceptions, and public research grant competitions.
- 5. **Increasing awareness** of the use and possibilities of innovative and experimental methods.
 - a. **Training top managers** to draw their attention to new innovative policymaking practices and encourage positive budgetary decisions for innovation projects.
 - b. Normalising the use of new practices **by sharing success stories** about completed innovation projects.

This chapter provides a detailed overview of the problems and recommendations outlined above. In each section, additional recommendations are highlighted. Moreover, boxes with international good practices have been added throughout the document to inspire concrete areas of intervention that will be further examined for the roadmap report. It is also necessary to acknowledge that not all recommendations are expected to be implemented. The beneficiary organisations are expected to weigh in and select the most crucial ones that will be properly contextualized and described in detail in the country roadmap report. This report has been divided into five topics, but they are all closely interconnected and overlapping, which shows the existing high-level complexity of the S4P ecosystem in Estonia. It is possible to improve the highlighted areas without more central coordination by focusing on individual or organisational development. However, the systemic issues would remain. Currently, a window of opportunity emerges to implement reforms in research, development and innovation policies to improve science for policy in Estonia, given the negotiation and upcoming public consultation of the new version of TAKS (*Teadus- ja arendustegevuse korralduse seadus* - Organisation of Research and Development Act). Although reforms the Estonian S4P ecosystem could and should also be spearheaded by other policy fields and ministries (such as Ministry of Finance or Ministry of Justice), this report stresses the need to harness this opportunity with TAKS given also the close involvement in it of the three beneficiary organisations: the Government Office, the Ministry of Education and Research, and the Estonian Research Council.

5.2 Introduction: Identifying needs and gaps for evidence-informed policymaking in Estonia.

This needs and gaps assessment report is a deliverable of the project “Building Capacity for Evidence-Informed Policymaking in Governance and Public Administration in a Post-Pandemic Europe”. Whereas the previous report—the Diagnosis report—aimed to describe the situation as is, the goal of the current document is to describe the ideal state—where the beneficiary organisations aim to go. Consequently, this report serves as a starting point for the last report—the roadmap report—outlining the necessary steps to achieve the identified goals. Five focus group discussions were organised in late November and early December 2023 to collect data for this document. The discussions involved representatives of the beneficiary organisations (BOs), the Government Office, the Ministry of Education and Research and the Estonian Research Council, together with many other Estonian public servants and members from the scientific community as well as think tanks to react to the findings of the diagnostic report which depicts the current situation of the S4P ecosystem and share their imaginings of a perfect system.

Therefore, this needs and gaps assessment report is the next step to improve the evidence-informed policymaking (EIPM) process in Estonia. This report is based on the reactions of the beneficiary organisations (BOs), the Government Office (GO), the Ministry of Education and Research (*Haridus- ja Teadusministeerium* - HTM), and the Estonian Research Council (*Eesti Teadusagentuur* - ETAG), other public servants, and representatives of the scientific community and think tanks, to the diagnostic report on the Estonian Science for Policy (S4P) ecosystem. While the diagnostic report captured the “as-is” situation, the current needs and gaps assessment report aims to elucidate some aspects of the ideal “to-be” situation for the national actors, which will serve as a basis for the last step in the country analysis, the preparation of a country roadmap for implementation of policy recommendations that allow to reach the desired “to-be” situation.

As seen in the diagnostic report, the current strengths of the Estonian S4P ecosystem are:

- The general structure of the Estonian S4P ecosystem that help materialise EIPM is almost in place;
- At large, the introduction of the science advisers must be seen as a great success;
- The government promotes innovation; and
- Research and development funding has been made a priority by all political parties.

At the same time the following weaknesses can be identified:

- EIPM is often ignored by the political level and higher civil service levels of the administration, due to other competing interests;
- Level of data literacy is low at the political level and in the public administration as is the willingness/capability to listen to science advice;
- Networks for science advice are not formalized enough, lacking any political mandate and with a high level of heterogeneity in terms of influence, roles and exposition to internal and external actors, with also limited career prospects for the currently appointed ministerial science advisers;
- High staff turnover in the public administration makes it difficult to retain institutional memory and contacts;
- Scattered system of science advice without any central coordinating role; and
- No career incentives for academics or institutional support to engage in S4P activities or policy engagement.

With these lessons in mind, a round of topical 3-hour long focus group discussions were conducted in November and December 2023 in Tallinn (see Table 1). The diagnostic report with the main discussion points was sent ahead to each participant. The FGs were not recorded, and the report is based on the notes taken by the national experts, the JRC team and the OECD representative. The participants' list was compiled with the help of beneficiary organisations and national experts, and personal invites were sent out by the Estonian Research Council (ETAG). Around fifteen people were invited to each discussion and each present participant signed a data protection form. The focus groups started with a short introduction of the project, a brief overview of the diagnostic report’s main findings and then rounds of questions exploring the gaps and needs of each topic.

If applicable, the needs and gaps are listed based on the analytical framework of the project that distinguishes between a demand and supply side in the S4P ecosystem and considers four analytical levels: (1) individual, (2) organisational, (3) inter-organisational and (4) systemic.

Table 1. List of focus groups conducted

Date in 2023	Topic	Number of participants (experts not included)	Organisations represented
29th Nov	Evidence-informed policymaking in the Estonian government: from the network	8	ETAG, HTM, Government Office, Ministry of Defence, Ministry of Regional Affairs and Agriculture, Ministry of Justice

	of science advisers to decision-makers and politician		
30th Nov	Innovative policymaking in action: competences and awareness in public service	6	Government Office, ETAG, Foresight Center, Statistics Estonia
30th Nov	Science for policy in the scientific community: capacity-building workshops, academic incentives, academic support, and other policy engagement opportunities	8	ETAG, HTM, Academy of Sciences, Tallinn University, TalTech
1st Dec	Coordination and support mechanisms for evidence-informed policymaking	8	ETAG, HTM, Government Office, Ministry of Finance, Ministry of Economic Affairs and Communication, Ministry of Social Affairs, Statistics Estonia, Praxis
2nd Dec	Integrating foresight practices into policymaking across government	8	ETAG, HTM, Government Office, Foresight Centre, Ministry of Finance, Ministry of Economic Affairs and Communications, Estonian Business and Innovation Agency

Source: Own elaboration.

The content of these discussions built the strong foundation for this report, supported by additional desk research and findings from the diagnostic report. Overall, the Estonian S4P ecosystem is very mature, and much work has already been done to promote EIPM in the Estonian public administration. However, it needs to be stressed – and this is the main message of this report – that the capability and political will to include evidence in policymaking is distributed unequally across ministries and agencies. To unearth this the needs and gaps assessment report's structure mirrors the focus groups' thematic sections. Each section starts with a clear outline of the main problems in the area, followed by a presentation of the main discussion items, identifying the needs and gaps, and concludes with a list of potential interventions that can help close the gaps and fulfil the needs.

The report starts with an engagement of the need to ensure clarity of advisory bodies and strengthen the mandate and role of the ministerial science advisers and their networks (section 5.3). It then moves to the topic of science for policy as a practice on the supply side with a special focus on the incentives and support for academics to provide policy advice (section 5.4). Section 5.5 delves into the current state of utilizing Strategic Foresight in Estonia, followed by a discussion on the level and frequency of innovative policymaking in Estonia (section 5.6). The last section (5.7) provides a more systemic engagement with a variety of ways to improve the existing support mechanisms to identify knowledge needs for improved EIPM. The report finishes with a concluding section to summarise the main areas of intervention, how they are intertwined and related to each other, and potential integrative solutions. It is also important to note while reading that not all recommendations are expected to be implemented and that many of them require proper contextualisation in the Estonian S4P ecosystem. Therefore, crucial next steps are the selection of recommendations and the detailed embedding in the Estonian system. This work will be undertaken during the country roadmap stage of the analysis.

5.3 The need for strengthening the network of science advisers

5.3.1 Problem statement

The position of science advisers in government departments or ministries and the network of science advisers are well established and regarded in the Estonian S4P ecosystem, with the inception of the position and the network being both considered as a great success and achievement by nearly all consulted stakeholders. In some ministries, such as the Ministry of Climate or the Ministry of Defense, they have brought the desired impact in the ministry, engaged proactively with the scientific community and other key stakeholders, and built and contributed to an ideal S4P ecosystem. However, this is not the case in every ministry. The current moment offers the opportunity to continue to strengthen ministerial science advisers and their network to increase their influence and support the EIPM even more. Based on this, ground-breaking reforms are not necessary but rather adjustments, course corrections and calibrations.

Noteworthy, the roles of science advisers vary wildly in different ministries, thus limiting their impact. There are many possibilities for how this network can be reshaped. Although an attempt to add more legitimacy to science advice and strengthen the role of science advisers have been made by the Ministry of Education and Research by introducing the Research, Development and Innovation Coordination Body (*Teadus- ja arendustegevuse ning innovatsiooni koordinatsioonikogu - TAI*), its impact, formal procedure and membership is unclear and unknown to many actors in the system. This leaves the role of the science advice network as still not fully comprehensible and is in line with opinions shared during the focus group discussions. It remains necessary to clarify the function of science advisers and their network and strengthen its political mandate to gain more influence internally, and more exposure externally (scientific community and interested stakeholders).

The science adviser position suffers from the lack of a clear and comparable job description across ministries. Although ETAG offers an informal platform for sharing information, peer learning exchange, and training, there does not exist any clear and common guidelines and rules of operation for science advisers to institutionalize their role, to ensure influence at the upper levels of the civil service and the political level, to prevent any conflict of interest, and to guarantee an open and accessible contact point for the scientific community. Furthermore, science advisers need more internal and external visibility and credibility/legitimacy to become more impactful in the policymaking process. Potentially also the funding of these positions may need to be rethought to manage allegiance and create a more homogenous profile.

Table 2. Needs and gaps assessment of the network of science advisers

Need/Gap description	Relevant government actors	Potential solutions (where relevant)
Science adviser job description lacks clarity, implementation, and political mandate	HTM, ETAG, Government Office, Line ministries	Develop a career model for science advisers; develop a code of conduct for science advisers; consider changing funding schemes; introduce the figure of chief scientific adviser; political mandate from the Government Office
Role and impact of network of science advisers is unclear	Government Office, HTM, ETAG	Increase the formal role of ETAG as coordinator of the network; production of common guidelines or rules of operation
Role and mandate of the TAI coordination body is unclear	HTM, Government Office, (line ministries)	The TAI coordination body needs to receive the mandate to fulfil the strategic role of coordinating research activities across the government and the ministries; appoint Deputy Secretary Generals to the TAI coordination body; engineer collaboration between the network of science advisers and the TAI coordination body

Lack of knowledge management	Government Office, HTM, ETAG, line ministries	Invest in trainings on knowledge management and expose science advisers and Deputy Secretary Generals; consider introducing Knowledge Manager position to ministries
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Source: Own elaboration.

Firstly, this section puts a light on the needs and gaps of the science advice network on an a) individual b) and inter-organisational level. After this, potential interventions that could satisfy these needs are listed.

5.3.2 Needs and gaps for the network of science advisers

5.3.2.1 Individual level – What are the roles and expectations for science advisers?

On the individual level there are several issues that need to be addressed. It remains unclear what the desired profile of the science advisers is and what level of experience is expected and required. This extends to an unclarity about the mandate of advisers.

The profile of the science advisers

Both the diagnostic report and the focus groups discussions have over and over problematized the profile of the science advisers. Firstly, in an ideal world, they are hybrid professionals, equally comfortable in academia and the policymaking community. They are able to speak both languages and can bring their point across in both communities. This also coincides with a lot of experience in performing and even coordinating high-level research as well as giving policy advice. Yet these skills and profiles are reported to be very rare in Estonia and even less frequent is to be found a person that excels in both. Furthermore, a skillset of that kind would add much more legitimacy to this position and with that it would become much more impactful. Unfortunately, the actual profile of most science advisers is a different one. Unless some valuable exceptions, they are often early career researchers with little experience in coordinating research and giving policy advice. It is furthermore unlikely to attract a senior profile researcher such as professor level to take on the role of a full-time science adviser because of the impact that this medium-to-long term appointment may have in their academic career. This is also connected to some purely administrative responsibilities that some science advisors have to carry out and that could be easily handled by people without their scientific background.

Therefore, the beneficiary organisations need to strengthen the mandate on the institutional level, more clearly define the role and responsibilities of the science adviser and build legitimacy and career prestige around the position. Next to formalizing these guidelines and expectations, trainings and programmes that ensure their ability to support the organisations in the way needed.

The role of science advisers

At the moment, most science advisers have an impact by their own initiative and interpretation of their role. This can lead to great results as seen in a few ministries, where the science advisers are true culture changers that bring science closer to decision-makers. This is, however, connected drastically to personalities (pro-active, communicative, self-confident) and career or experience levels (both in academia and policymaking). Unfortunately, in many situations in which there is an absence of these traits, science advisers are often pushed into the role of procurement specialists for research funds or analysts. Frequently, it is also the case that they find themselves very isolated within their own ministry and ministry units. While this may not be the fault of the respective science advisers, or even the organisations, the preparation of clear guidelines, rules of operation, code of conduct, and expectations of what the role of a science adviser entails could help to ease this challenge.

Here, a problem of allegiance also finds expression. While in the beginning, the science adviser position was cofounded by ETAG (on the initiative of the HTM) and the government department helping to ensure co-ownership and influence, these positions are currently only funded by the specific ministry. Although this proves the successful impact of the initiative, it offers some challenges in ensuring a common role of science advisers across government. ETAG, for example, has a template about the role of the science advisers on its website, but since it is not the employing or funding agency, the role is negotiated by the ministries. In the ministries it seems that the core role – helping civil servants ask researchers the right questions – is often forgotten. To address this identified gap, there could be two complementary approaches:

First the preparation of a common code of conduct for science advisers and the development of a professional career model could both guarantee support and give more meaning to the actual role. To some extent, the informal coordinating role of ETAG that gathers ministerial science advisers together for mutual learning and exchange of practice could get more formalised and be the discussion platform to co-create such a common code of conduct and career development prospects based on the input and expertise of current advisers. In addition, as aforementioned, ETAG already provides soft guidelines on job requirements to ministries, but this common code of conduct could help ministries improve their recruitment process and assignment of responsibilities to their advisers.

Second, a stronger political mandate coming from the Government Office could help raise legitimacy and importance to the role science advisers play in each ministries and as part of a network. Pending further discussions, such a political mandate can take the shape, for example, of a government plan for the network of science advisers with the explicit request of creating a code of conduct, the appointment of a chief science adviser sitting at the Government Office, a reallocation of coordinating role of the network to the Government Office, or a closer interaction with ETAG to co-manage the network. Some of these aspects are also covered in the following subsection.

5.3.2.2 Organisational and inter-organisational level – Different science advice networks and their mandates

Science advisers are now fully employed by the ministries or the GO. But the position or role has not changed, since the ministries decided from the start how many advisers they need, what their roles are, and also on what level of the organisation they are located. This leads to the already mentioned stark heterogeneity of the position in terms of tasks but also influence. The different science advisers still meet monthly under guidance and soft coordination of ETAG. It is apparent that the ministries do need support in managing and coordinating the science adviser position, currently this is only provided in form of the science adviser network, but a stronger “shoulder” would be necessary.

Network of Science Advisers

The network of science advisers was conceived while introducing the Science Advisers in 2015 via the RITA framework. According to all participating stakeholders, the network has been a great success, especially due to its informal nature for exchange of practices among ministerial advisers and with some great examples in specific ministries. However, the internal influence, exposure, and prestige of each science adviser at their ministry is quite uneven and the capacity to drive inter-ministerial coordination is somehow hampered by the lack of any formal political mandate.

Box 1. (Chief) Science Advisers at ministries and their inter-ministerial networks

In the UK, the first cross-government Chief Scientific Adviser (CSA) was appointed in 1964 and since 2002, additional science advisers have been appointed to every government department in the UK. Currently, [the UK has a Government Chief Scientific Adviser with over 20 Departmental CSAs](#) who are also supported in each department by science officials. Their role is to actively provide advice to ministers and promote evidence-informed policymaking, discuss and facilitate implementation of policy on science, technology, engineering and mathematics including the support of design of the Areas of Research Interest and facilitate communication between government and key stakeholders on particular high profile STEM-related issues and those posing new challenges for government.

They all work as a formal network supported by the **Government Office for Science (GOS)** that promotes inter-ministerial coordination and offers weekly meetings with CSAs to discuss departmental science priorities and policy topics of relevance to the provision of evidence.

Of interest, a [Guidance for CSA and their supporting teams of CSA Officials](#) offers information on the role, responsibilities, codes of conduct, and how the network is embedded in the wider UK science-for-policy ecosystem.

Lastly, CSAs tend to be mid to senior-level career academics or industry professionals who are seconded or hired in a full-time or part-time basis.

Similar arrangements and networks can be found in US, Canada, India, New Zealand, among others. However, in other countries, such as the Netherlands or Finland the network is operated by civil servants dedicated to manage public funds for research needs. In Lithuania, the Research and Innovation Adviser (R&IA) network is a new initiative, a component of the “New Generation Lithuania” plan under the “Next Generation EU” instrument, to strengthen the advisory role of the Research Council of Lithuania (RCL). More specifically, the R&IA network aims to enhance evidence-informed policymaking and collaboration between academia and decision-makers. The network envisions 15 advisers strategically placed in Lithuanian ministries, guided by criteria emphasising expertise in governance and building networks between science and policy.

While Estonia already has a network in place similar to those in Netherlands, Finland or Lithuania, it could benefit for having a stronger coordination body to manage the network, mainstreaming common practices, receiving a political mandate, and improving the interaction with other networks/coordination bodies, the high levels of civil service, and the political level.

Untapped potential for further relations between the network of science advisers and other advisory bodies

Next to the informal Network of Science Advisers the HTM introduced a more formal advisory body in the form of the TAI coordination body, The fact that that a cross-ministerial body only reports to one ministry expresses again the unequal distribution of support and access to EIPM. HTM might require more reports on research policy advice but it has limited power on sectorial ministries and policies. TAI does also not coordinate research across ministries, like its name could suggest, but only exchanges information on these matters at the moment. Furthermore, the role and composition of the TAI coordination body remains mostly unclear across government circles and it requires reform to positively impact EIPM in Estonia, because neither the composition nor the function is clearly distinguished to government officials from the network of science advisers. For example, the TAI Coordination body could have a clearer role if it were to align research strategies across ministries and communicate this knowledge across the government, and if doing so, it could strengthen its relationship with the network of science advisers.

5.3.3 Potential interventions to strengthen the impact of advisory networks

The following interventions have a certain urgency attached to them as we view the current reform process of the Organisation of Research and Development Act (*Teaduss- ja arendustegevuse korralduse seadus – TAKS*) as a crucial window for making these recommendations a swift reality.

5.3.3.1 Formalized mandate for Science Advisers and the Science Advice Networks and bodies

As aforementioned, science adviser positions have high heterogeneity across the different ministries. That is partly related to the fact that no clear guidelines are followed for the job description and later in evaluating the advisers' responsibilities. ETAG/HTM has created a job description but neither them nor the Government Office have a mandate to check whether it is followed by ministries or even to enforce it. The success of the role is therefore unevenly spread across the ministries and highly dependent on the job holder. The following four developments regarding the science adviser position are recommended:

- 10.** To develop a **career model for science advisers** as well as to **create a training programme that increases the ministries awareness of the role and their expectations**. It is furthermore proposed that **the Government Office and ETAG should monitor the role annually and make recommendations for adjustments to ministries if needed**.
- 11.** To prepare **common guidelines, rules of operation, or code of conduct** that fully describe the role of science advisers, their functions and responsibilities, how they are embedded in each government department, what processes they may oversee, how they operate in networks, and how they and their network relate to the wider S4P ecosystem in Estonia. This type of documents are produced in other countries to fully explain the role of these ministerial science advisers and any coordination of the network (See Box 1).
- 12.** To ensure a **stronger mandate** to the science advisers' position from the level of the Government Office. This could be in the form with bigger involvement and leadership from the Government Office in the two previous recommendations, but it would also be interesting to analyse the possibility of upgrading the network with an overseeing role for **a government chief science adviser** (see Box 1 for international example). This role could head the network of science advisers which can help increase the **legitimacy**,

influence, and prestige of these science advisers, and an established unified approach across ministries to promote inter-ministerial coordination and collaboration. The exact profile of such a government chief science adviser and what kind of relationships could get established with other advisory bodies (such as TAN or the TAI coordination body) could be object of further discussions during the roadmap stage of the current project.

- 13. Strengthen the ties between science advisers and research administrators at ministries and other research performing organisations to facilitate the exchange of needs on both sides.** The good practice from specific ministerial science advisers show their crucial role in bringing policymakers and research expertise together, but capacity building is required in both sides (public administration and the scientific community). Ministerial science advisers need to get more exposed to the scientific community and seek ways to collaborate with researchers and research manager support staff. This could be via specific policy engagement programmes, cycles of seminars/workshops, innovation camps, etc. that could bring ministerial science advisers together with research performing organisations, or even learned societies such as the Estonian Academy of Sciences in a more regular basis.

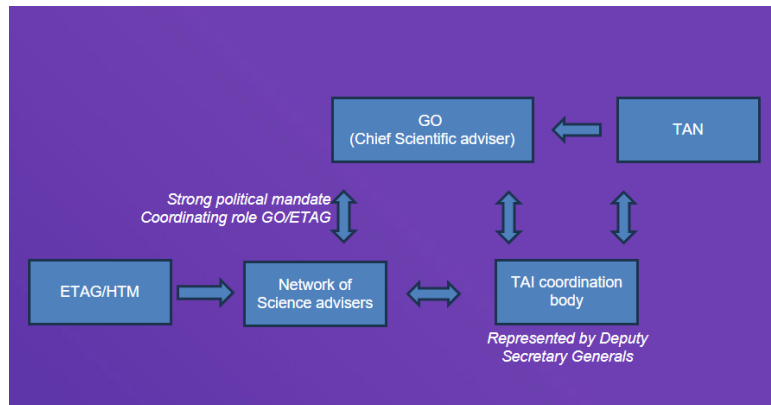
5.3.3.2 Ensure bigger clarity for the science advice network and delimited roles with other advisory bodies

The network of science advisers may continue to work as a tool for informal knowledge exchange and best practice sharing but it should be connected somehow with the developments of the TAI coordination body, with the high levels of civil service and the political level, and with specific ministerial committees that are dealing with sectorial policies (from the Innovation Policy Committee or the Research Policy Committee to other specialised committees from other ministries). The question of which organisation should coordinate this network (either GO, ETAG, or HTM) is subject of further discussion. However, all consulted members of the network have stressed that not enough time is given to network meetings, which hampers opportunities for more inter-ministerial coordination and exchange of practices and information. Therefore, the network should meet more often and more extensively. To increase the impact of science advice on high-level decision-making, the following concrete recommendations are provided:

14. The TAI coordination body needs to receive the **mandate to fulfil the strategic role of coordinating research activities** across the government and the ministries, including the review or progress of the research plans. With this mandate there is a need to reform this body and **place it more centrally at the Government Office to support all ministries** equally.
15. **In this light deputy secretary generals need to be appointed to the TAI coordination body** which will further support strategic decision making across ministerial research. Furthermore, establish a clear role for ministry's leadership (DGs or DSGs) to **regularly review the implementation of the research, development and innovation** plans with their ministerial science advisers (e.g. monthly or bi-monthly).
16. Perhaps less connected, the current **dual role of the science adviser of the government office needs to be reformed** to avoid a conflict of interest between duties as science adviser and the additional responsibility of secretariat support to TAN. The current role could be transformed into a full-time coordinator of TAN, and introducing a new position of **government chief science adviser (GCSA)**, or government coordinator of the science advice network, to fulfil a bigger role in coordinating the action of science ministers across government, promote more transversal use of research and innovation across the government, and partake in conversations with TAN and the TAI coordination body, for instance, without the need to perform a secretariat support role..

The above-mentioned recommendations would imply a substantial reform of the Estonian S4P ecosystem. The creation of a GCSA and the reform of TAI would make science advice a much more visible and legitimate role and better connect the science advisers with the government office. It also contains much clearer roles and visions for both the Network of Science Advisers and the TAI coordination body. Especially the role of the latter would be much more in line with its name. This newly imagined landscape is summarized in Figure 1.

Figure 1. Suggested reorganisation of advisory networks and bodies in the Estonian public administration.



Source: Own elaboration

5.3.3.3 Investing in knowledge management and science brokerage

Much of the existing knowledge and science advice does not enter the policymaking area. In lieu of this, some participants pointed out that there is a need to go beyond science advice and explore notions of knowledge management and science brokerage.

Knowledge management is a process receiving growing interest in public administrations around the world but also in academia (for an overview: Massaro et al. 2015). In Estonia, the Ministry of Economic Affairs and Communication (*Majandus- ja Kommunikatsiooniministeerium* - MKM) is in a leading position as they already have a separate Chief Knowledge Manager (next to a science adviser) embedded in their strategy unit. The idea behind institutionalized and systematic knowledge management is the recollection and sharing of already existing knowledge in an organisation and ideally also across organisations. It counteracts the tendency to work in silos and retain knowledge within government organisations. Participants described knowledge management as consisting of the following three areas: (i) knowledge creation, (ii) knowledge organisation and (iii) knowledge sharing. Knowledge creation starts with the acquisition of knowledge either through gathering it from outside the organisation (in this case, via ordering research from researchers) but also from the inside by relying on the knowledge and expertise of employees. In the next step, the gathered knowledge needs to be structured and organised so that organisations can easily access and find the knowledge needed. The last step, knowledge sharing, is about making the knowledge available to those who actively look for it but also, and perhaps more importantly, making sure that knowledge crucial for organisations is shared with actors who could potentially need it. This is the most advanced aspect, as it requires knowledge managers to have an excellent grasp of the existing knowledge and of the knowledge needs of organisations. This could have a huge impact on the need to order research from the outside as potential knowledge might also be available within the public administration/government. It also makes sure that no knowledge gets lost.

This could expand the role of science advisers or place this responsibility on other existing staff, such as innovation advisers, to science brokers or knowledge managers. These positions should be equipped with even more skills needed to communicate between scientists and policymakers and systematically manage the available knowledge (i.e., available research and analysis) that should be accessed in policymaking.

Therefore, it would be recommended to:

17. **Actively expose the science advisers and the Deputy Secretary Generals** (as a start) to the notion of knowledge management by conducting trainings and showcases of its benefits (perhaps MKM, based on its success story, could lead this raising awareness exercise).
18. **Implementing knowledge management activities stronger in the science adviser job description or in another current job position to widen their scope.** This can be particularly effective if more bureaucratic tasks fall out of their responsibility.
19. Alternatively, ministries can follow the example of MKM and appoint a **knowledge manager** that supports the science adviser in this capacity.

5.3.3.4 Support more mobility from academia to the public sector

Lastly, inter-sectoral mobility programmes in Estonia (*Sektoritevahelise mobiilsuse toetusmeede* - SekMo) have mostly been promoted and used for mobility from academia to the private sector and vice versa. Although SekMo is also available for public sector, new impulses need to be created that also make this programme more desirable for mobility between academia and the public sectors. Other international programmes from the US, UK, or Ireland seem to be much more successful in this regard. This way the science advisers could be further supported by an experienced researcher for a short to mid-term timeline which would prevent their career from taking an extensive break. See 5.6.2.2 for more information on this intervention.

5.4 The need to increase support and incentives for the scientific community to engage in science for policy

5.4.1 Problem statement

Successful EIPM requires both the demand and the supply side to actively engage with each other. It can be hard for the demand side to activate the supply as these might be actors with very different goals, agendas and incentive systems. In this section, we are particularly interested in the role the scientific community plays as a knowledge supplier and why the supply falls short. As seen in the diagnostic report in Estonia, the scientific community seems to be keen to get involved in science for policy, there are, however, certain challenges to it, most importantly the lack of support and incentives in the academic career model for providing policy advice. Moreover, there is a lack of awareness of the EIPM process in general; there are institutional constraints (lack of funding and time); and low policy engagement opportunities. This focus group discussion focused on how to nurture, maintain and improve relationships between policymakers and the scientific community and also in the institutional pathways necessary. Firstly, this section puts a light on the needs and gaps of the science advice network on an a) individual and b) inter-organisational level. After this, potential interventions that could satisfy these needs are listed.

Table 3. Needs and gaps related to the practice of science for policy in the scientific community

Need/Gap - description	Relevant BOs and stakeholders	Potential solution (where relevant)
Policymaking processes are unfamiliar to academics	HTM; universities; research centres; ETAG	Provide guidelines/training programmes for universities about policymaking Run train-the-trainers programme in science for policy Integrate these topics into master and doctoral level training Integrate topics to EU framework programme trainings
Lack of incentives for participating in EIPM, different organisational practices	Universities; research centres	Learn from each other's good practices Widen the research assessment framework to consider impact on policy Support the establishment of policy impact units and research manager professionals in charge of supporting and training academic staff, dealing with policymakers, and organising policy engagement activities
Mobility problems between academia and public sector	Universities, research centres, HTM, ETAG	Generally recognized incentives system that acknowledges S4P activities as highly as scientific publications Organisational slide-in grants for transition periods Pilot science policy fellowships as inter-sectoral mobility schemes

Difficulties to participate in EIPM for short-term periods	Universities, research centres, HTM, ETAG	Platform/interface for scientist to give short-term advice without leaving positions in universities. Encourage to use more SekMo short-term (3 months) mobility scheme in public sector
Continuous need for regular policy engagement opportunities	Universities, research centres, ETAG, Estonian Academy of Science, Estonian Young Academy of Sciences	Keep up with existing ETAG's and Academy of Sciences science-policymakers interface activities ((annual conferences, Academy of Science afternoons) and encourage widening these initiatives Start with regular meetings/seminars between science advisers and universities Pilot other policy engagement activities

Source: Own elaboration.

5.4.1.1 Individual level – Help scientists and policymakers speak the same language

Training needs

One of the findings in the diagnostic report was the somewhat weak understanding of the overall policymaking process among researchers who sometimes feel frustrated if their advice, based on scientific research, is not visibly taken into account. However, the political process does not always appreciate evidence-informed advice, and especially top politicians make decisions solely based on the values supported by their political party. Science advice is not capable of changing those competing interests or values in a democracy. The frustration about this was clearly voiced in this focus group discussion and potentially negatively influences researchers to advise policymakers or to even consider working in the public sector.

Naturally, not all scientists are deterred by this and provide scientific advice. Their success also often hinges on their communication skills. Some are more successful at this, simply based on certain personality traits they possess, but the lack of communication skills of many scientists does not allow their work to translate to the policy sphere. It is, therefore, very crucial to improve the communication skills of (some) scientists (this is not required of all of them).

Lastly, the diagnostic report identified the difficulty for some scientists to distinguish clearly between the role of giving neutral scientific advice and lobbying for their field/institution or even their political inclination. Clearly marking the role of a scientist in the advice function could be another aspect that should be addressed in trainings for scientists.

A start has been already made. During this Technical Support Instrument project, capacity-building workshops for scientists were given in a Training-of-trainers mode. A total of six people from Estonia were trained to be able to deliver follow-up training exercises to the scientific community in the country. During the focus group discussions, specific plans for ad hoc activities and initiatives taken at the level of the home institution by trainees (a given university or a think tank) were discussed, but the need for a centralised country strategy was identified with a possibility to engage members of the network of science advisers as partners for the delivery of the training by identifying and mediating certain needs from both sides. The role of science advisers in these exercises could be that of keynote speaker, panel participant at an interactive session, or even training facilitator, depending on the capacity of the science adviser and the scope of the collaboration framework with the research performing organisation. This approach would help give visibility to science advisers and raise awareness about their role and functions within the scientific community.

Choosing your track

Researchers usually choose between classic academic or applied track, in bigger universities there are even special units for answering public procurement calls and providing applied research projects and having cooperation with public sector. But such a division may be too restrictive and take away the opportunity to participate in EIPM for those researchers who work in another academic units or who would like to contribute to only a few projects for example, if the application for a large grant fails and they suddenly have more free time. Indeed, here is no sufficient overview of how many researchers would be willing to contribute to EIPM in a more flexible way than choosing the applied track or leaving the university officially to work in the public sector.

Interviews and focus group discussions revealed that workload is not evenly distributed and “*adding new scientific faces*” to the EIPM circle is not easy.

Small country issues

An additional factor that influences Estonia in nearly all ways is its small size. It is, however, particularly visible in the even smaller research community. As much as one could try to build a transparent and logical S4P system in Estonia, the problems and benefits of the small country remain. Personal relationships among researchers, officials and politicians will probably always play a role in the process of giving and listening to scientific advice. Relying on these informal networks is, however, also an expression of the lack of recognising and institutionalizing policy advice as a regular activity of scientists.

5.4.1.2 Organisational and inter-organisational level – Create more opportunities to meet and talk

Visibility of research and its impact

According to Science Barometer (2020) researchers are highly trusted in Estonia, ca 90% of respondents trusted scientists (Estonian Research 2022: 102). However, the general trust in political parties, government and parliament is relatively low, even below 40% (Turu-uuringute AS, 14.02.2024). It could be assumed that general public does not see the role of research in the process of policy making. It would strengthen the EIPM process if science and the scientific methods were more visible. When it comes to more concrete evidence-based policies to solve the problems, policymakers need more specific public visibility of science. This would allow policymakers to point to this type of evidence more easily and it would be easier for politicians to convince their voters of recommended activities. It is, therefore, crucial that researchers of all fields proactively speak up to show the positive impact their research can have on society and, by extension, on policymaking. Tallinn Technical University (TalTech) has recently appointed members of their staff to play the role of spokespersons of the university for each ministry and showcase research activities that could be interesting for them. Some universities also consider media presence of their staff as a contribution to the administrative workload. Furthermore, the importance is acknowledged by ETAG which is organising an annual scientific popularisation conference and providing special grants and prizes to engage scientists to communicate their research to the public.

Keeping in touch with policymakers

Scientists are sitting in top level committees and advisory boards (such as TAN, Science Policy Committee...) with strict agendas and output schemes, however, quicker, more flexible and dynamic means of communication between researchers and policymakers are needed. The network of science advisers was mentioned as a great initiative for universities to have clear contact persons in the ministries, and the discussions revolved around the need to promote the existence of these positions more amongst the academic community. In general, universities are interested in having regular meetings with science advisers to exchange information, which is currently a challenge due to a lack of time and resources. It was also proposed that universities could invite science advisers and policymakers to thematic seminars to increase networking opportunities to establish relationships on a personal level. The need for direct link between the science advisers and the Estonian Academy of Sciences was also brought up. This would allow the science advisers to stay in closer contact with the research community.

Beyond universities and research centres, other actors could also help facilitate these policy engagements. The Estonian Academy of Sciences, for example, organises regular topical science afternoons that bring together top scientists, policymakers, and journalists. Likewise, ETAG hosts two annual conferences for policymaking and science communication that bring policymakers and the scientific community together.

Although these initiatives exist and have certain impact, different types and formats of policy engagement activities in the form of innovation camps, pairing schemes, cycles of seminars, weeks in parliament, can be engineered to promote more interaction between the scientific and the policymaking community. The Estonian Academy of Science and Young Academy of Science have great potential to facilitate the contacts between top scientists and politicians/policymakers, and they could also rely on a closer engagement with the ministerial science advisers to make these events happen.

5.4.1.3 Systemic level – Create opportunities to meet

Mobility and incentives

At this point, researchers are not often capable of switching career paths – even for a short time. The CrossSectorial Mobility Measure (SekMo) helps facilitate the mobility of researchers between public, private and academic sectors, but it does not combat the biggest problem which is that academic careers are largely impacted once there are years without high-impact publications. Scientists are officially evaluated based on their scientific excellence (measured by high-impact publications) and to, a lesser degree, by their teaching (neither of them is directly contributing to EIPM). There are some general attempts across Europe and also in Estonia to widen the research assessment frameworks and evaluate policy advice and societal impact as crucial activities in academic career models. However, due to the diversity of national systems and the autonomy of the universities, the practice widely differs. It was mentioned in the focus groups that it is hard to collect evidence for every advice, comment or contribution to EIPM (and society) and compare the value with academic publications (where the system of categorisation is established in the Estonian Research Information System) Although the categorisation system is sometimes criticised by researchers, it still allows institutions to have a comprehensive overview of different types of academic publications. Building up the system of valorisation of science advice is complicated and it needs time, cooperation within academia and between academia and policymakers,

Another influential factor for sectoral mobility is the disparity in salary grades between the sectors. For example, salaries for research positions are higher in the private sector, where we see, in comparison to the public sector, a difference of 26% (ETAG 2023). This lessens the incentive to go back to the public sector once a researcher entered the private sector. However, this fact is a long-awaited signal that Estonian R&D system is developing in "normal" direction, away from the post-Soviet practice, where the private sector research capacity /funding was low compared to the advanced R&D systems.

5.4.2 Potential interventions to facilitate engagement in science for policy in the supply side

5.4.2.1 *Trainings and capacity-building exercises targeting the scientific community*

Within the framework of this Technical Support Instrument, a selection of six Estonian participants from Tallinn University, Tartu University, think tank Praxis, and also the Government Office have been trained by the Joint Research Centre (JRC) under a Training-of-Trainers (ToT) programme to deliver capacity-building workshops to scientists to increase the awareness of science for policy and the impact of their scientific results into policymaking. With the materials being translated into Estonian, and the programme adjusted for different length lectures and/or seminars, this cohort of participants may ultimately multiply the number of training activities in S4P in Estonia. In addition to academic staff, students could also be involved. It is therefore recommended that:

20. It would be good that the Beneficiary Organisations and the group of participants of the ToT programme **co-design a strategy for regular trainings to scientists** conducted not only in the participants' home organisations but also beyond and with the key collaboration of ministerial science advisers to share their experience and practical insights.
21. Integrating science for policy and communication skills training **into master or doctoral level programmes** to help early-career researchers to prepare for their professional career and recognize that providing evidence for policymaking can be an important part of their future career.
22. Integrating these topics into ETAG's regular **grant writing workshops**.
23. In addition to traditional classroom trainings, other **formats for more active policy engagement opportunities such as pairing schemes, open doors, innovation camps or participatory events, could be explored**. For example, the Royal Society of London has been running a successful pairing scheme for scientists, parliamentarians and civil servants for over 15 years (see Box 2). Activities in the line of promoting policy engagement opportunities can help advance mutual understanding between the scientific and policymaking community and promote a cultural change for evidence-informed policymaking.

Box 2. Pairing schemes and other policy engagement opportunities

Pairing schemes are programmes where scientists and policymakers (MPs, parliamentary staff, diplomats, or civil servants) spend a few days together to build personal relationships and raise awareness about each other's worlds. Some schemes are also accompanied by introductory workshops and training in science for policy. While scientists then understand better how policymaking operates, how evidence can play a role, and how they can interact and engage with the policy process; policymakers get access to scientific knowledge, increase their network with the scientific world and get inspiration to consider evidence in their policy and decision-making practice. Schemes can vary in terms of length, unidirectional or reciprocal visits, number and profile of participants, type of organisation managing the programme (Parliamentary Office, learned society, university, embassy, etc.). Popular examples are the [Royal Society Pairing Scheme](#) (UK), the [Oficina C Programa de emparejamiento](#) (Spain), the JRC's [Science meets regions pairing schemes](#), the [Leibniz im Bundestag](#) and the [Mercator Science-policy Fellowship Programme](#) in Germany, among many others.

Additional policy engagement opportunities can take the form of [Open Doors](#) programme of public organisations (ministries, embassies, international organisations); the JRC's Science meets Regions [innovation camps and participatory events](#).

In Estonia, organisations such as the Foresight Centre, the Estonian Academy of Science, the Estonian Young Academy of Sciences, Tallinn University, Tartu University, TalTech, and even ETAG could collaborate to organise a pilot pairing scheme.

Reference material: AAAS (2017), [Connecting Scientists to Policy Around the World](#), <https://www.aaas.org/resources/connecting-scientists-policy-around-world>; Lakunza, I.; Josten, M; Elorza, A; Meyer, N.; and Melchor, L. (2021) How to set up a knowledge exchange experience in policy and/or diplomacy for researchers. The S4DC4 Open Doors Experience. Report, Deliverable D5.9, S4D4C; and Hill, C. (2023) "GeoPolicy: Science-Policy Pairing Schemes in Europe – a regularly updated list", EGU Blogs, 22 December 2023, available at <https://blogs.egu.eu/geolog/2023/12/22/geopolicy-science-policy-pairing-schemes-in-europe-a-regularly-updated-list/> (accessed on 27/01/2024).

5.4.2.2 Provide incentives and widened assessment frameworks to include policy advice

Currently, researchers do not have clear incentives to spend time in providing policy advice and engaging in S4P activities – all focus is on producing high level research. Their career is mostly measured by their academic and teaching excellence, and there is little margin for wider areas of evaluation in any research assessment framework. Additionally, as universities have their own autonomy, different career models and HR practices, recognition of value and providing incentives for researchers to contribute to EIPM is very different. Therefore, it is recommended that:

24. **Individual research assessment frameworks are widened to recognise and reward those researchers who have provided policy advice and delivered societal and policy impact.** Although currently there is a low number of Estonian organisations supporting a widened assessment (see Box 3), these incentives would help diversify research careers and acknowledge those researchers that invest time and resources in these **knowledge valorisation** activities at the potential expense of their research and teaching production.
25. Universities should exchange each other's good practices and **align their career evaluation models** to reduce the possible feeling of researchers of inequality that different institutional treatment may create inside the academic community.
26. To attract excellent researchers who have spent time outside (in industry and government) back to academia, universities could compensate them (**so-called slide-in grant**) until successful grant competitions to avoid large salary losses or public agencies (HTM/ETAG) could organise specific calls for reintegration of researchers. SekMo currently offers some support in this line.

Box 3. New research assessment frameworks

The **Coalition for Advancing Research Assessment (CoARA)** has pushed an Agreement on Reforming Research Assessment that sets a shared direction for changes in assessment practices for research, researchers and research performing organisations, with the overarching goal to maximise the quality and impact of research. The vision is that the assessment of research, researchers and research organisations recognises the diverse outputs, practices and activities that maximise the quality and impact of research.

Considering the needs and gaps assessment conducted in Estonia, there is a need to widen the evaluation criteria of researchers and research performing organisations. As of 23 November 2023, CoARa has 583 member organisations, but strikingly only two are Estonian: the Estonian Research Council and the Estonian Young Academy of Sciences. This offers an opportunity to promote changes in research assessment for both researchers and research performing organisations, where engagement in science-for-policy activities and production of policy outputs (policy briefs, policy reports, etc.) can be used as a quality criteria.

In the case of researcher assessment, Spain has piloted a **Sexenio de Transferencia** (Six-Year Transfer) to assess the activity in knowledge and innovation transfer of researchers in universities and public research organisations. This was covered by Resolution of 14th November 2018 of the National Commission for Assessment of Research Activity (CNEAI) and published on the Official State Gazette (BOE de 26 de noviembre). The evaluation was conducted by a Transfer Advisory Committee, composed of 10 experts (chair and 9 members) from all branches of knowledge, whose responsibility was to define and specify the criteria for evaluating the transfer merits and to evaluate the applications. For this task, the Committee was supported and advised by 156 academic specialists in the different areas of research and development.

In the case of research performing organisations, the **Research Excellence Framework (REF)** is the UK's system for assessing the quality of research in UK higher education institutions that started in 2014 and is conducting every seven years. The REF aims to (i) provide accountability for public investment in research and produce evidence of the benefits of this investment, (ii) provide benchmarking information and establish reputational yardsticks, for use in the higher education sector and for public information; and (iii) inform the selective allocation of funding for research. The evaluation is conducted by assessment panels and among the criteria there are aspects such as scientific excellence, academic outputs, patents, societal and policy impact, equality and diversity, having specific career development programmes for staff and early-career researchers, etc.

Lastly, the Council of the European Union has reached a political agreement to keep, attract, and retain research, innovation and entrepreneurial talents in Europe to support diverse research careers in the European Research Area (ERA), updating the R1-R4 profiles for researchers, introduced in 2011, and introducing the European Charter for Researchers, which is a revision of the 2005 European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers. Among the recommendations, the promotion of inter-sectoral mobility and the significance of careers for research technicians and research managers to ensure higher levels of research and innovation.

Reference material: [CoARA](#); [Six-Year Transfer](#); [UK REF](#); [The Council Proposal for a Council Recommendation on a European framework to attract and retain research, innovation and entrepreneurial talents in Europe](#).

5.4.2.3 Professionalization of policy impact units at research performing organisations

Another regular challenge brought up during the focus group discussion was the limited time and support for researchers having to stay up to date to policy developments. The need for structural support from their institutions was mentioned in order for researchers to better understand how policymaking process operate, to nurture and sustain working relationships with ministry officials, and to stay alert of public calls for evidence and public procurements. Although some promising initiatives such as the one in TalTech to appoint ministerial spokespersons were shared, focus group participants referred to the need to professionalise the interface between academia and the public sector – the same way that Knowledge Transfer Offices exist – and to help bridge the gap between academia and industry. It is recommended:

27. To introduce a **small unit of research managers specialised in public relationships and policymaking** at each research performing organisation to train research staff, organise policy engagement opportunities, and keep active relations with ministries and government departments (see Box 4). These units can be part of existing knowledge transfer services that may be focused on academia-industry collaborations or in existing institutional relations departments, widening their role if additional workforce is a challenge.

28. To offer incentives and rewards via **increased baseline funding or additional competitive funding to research centres and universities with units for policy and societal impact** with proven track record. Box 3 shows modalities for research assessment frameworks for research performing organisation linked to academic, teaching and societal impact.

Box 4. Policy impact units at universities and other knowledge exchange units in scientific organisations

A growing trend in universities and research performing organisations is to professionalise research management to improve knowledge transfer to industry (Knowledge transfer units), society (science communication units or communication departments) and also to public administrations with the establishment of policy impact units. These units aim to serve as “one stop shop” for policy professionals and public administration looking to engage with researchers at these organisations, to organise knowledge exchange events with all interested stakeholders around policy issues, and to support academic staff by delivering training, supporting the production and sustaining follow-up of policy outputs (policy reports, briefs, etc), and informing about government calls for evidence and funding opportunities for research needs in governments. The [UK Universities Policy Engagement Network](#) (UPEN) is a community of UK universities and policy professionals committed to increasing the impact of research on public policy, with [the Centre for Science and Policy](#) at the University of Cambridge or [the Policy Impact Unit](#) at University College London as examples of outreach and knowledge brokerage. Sometimes, these units may be specialised on a specific policy topic or region such as the [Stockholm University Baltic Sea Centre](#) aiming to bring together researchers, environmental analysts and communicators to increase knowledge about the sea support marine management of various environmental challenges, or to provide proactive advice to international organisations such as the [SDG Bergen](#) strategic initiative of the University of Bergen to engage with the United Nations about the 2030 Agenda.

5.4.2.4 Explore inter-sectoral mobility programmes from academia to public administrations

To build mutual and shared understanding and to develop competences in EIPM, focus group participants welcomed the idea of piloting different modalities of inter-sectoral mobility schemes to allow short to medium-term experience of career scientists in public service or a policy organisation. Four ministries are currently piloting a science-consultation work form within the framework of an R&D project led by the Ministry of Finance.

It is recommended:

29. To encourage to use more **the SekMo short-term (minimum 3 months) mobility scheme**, for movement between academia and the public sector.
30. To run a **pilot for a 1-year science and technology policy fellowship**. The fellowship (see box 5) would consist of a public and competitive call, run and delivered by a coordination body/agency to monitor fellows and connect them in a network, with the government departments acting as hosts. The science fellow, after the year of fellowship, may opt to go back to academia or continue exploring career options in public service.
31. A **centralised platform/interface for scientists to give advice and to offer matchmaking services for short-term exchanges and projects**. This “digital matchmaking” website could involve mini-grants or scholarships for short-term projects or consultations. There is already a similar platform ([Adapter](#)) to connect the private sector with researchers in Estonia, and another European initiative linked to the Marie Skłodowska-Curie actions ([MSCA matchmaking platform](#)).

Box 5. Inter-sectoral mobility schemes from academia to public administration

Around the world, there are different ways to promote inter-sectoral mobility between academia and public administration such as secondments, details, rotations, fellowships, and internships. Academic researchers, who already hold positions of civil servants as university staff or principal investigators in public research organisations, can be easily seconded or detailed either to government departments in many countries (France, Spain...) or even international organisations (For instance, seconded National Experts in the European institutions).

Fellowship schemes: to target early to mid-level career academics, who hold a PhD but do not necessarily have a tenured position, some countries have deployed inter-sectoral mobility fellowships between academia and public administration. Through this programmes, scientists and engineers get to acquire hand-on policy experience, develop new skills, promote evidence-informed policymaking, and expand their career options. For instance, the [AAAS Science and Technology Policy Fellowships \(SPTF\)](#) in the US appoints up to 175 scientists and engineers to serve yearlong assignments in the executive, legislative and judicial branches of the federal government in Washington. In Canada, the Mitacs Canadian Science Policy Fellowship has usually appointed over 10 scientists in government host offices. In the UK, following a successful pilot run by the Economic and Social Research Council (ESRC) in 2021, the [UK Research and Innovation \(UKRI\) Policy Fellowship programme](#) has appointed 44 academic fellows to work in 21 government departments and five What Works Centres across the UK. In Ireland, Science Foundation Ireland has recently launched the [SFI Public Service Fellowship Programme](#) and has partnered with 18 Government departments and agencies on 42 different projects requiring STEM and non-STEM expertise.

Internships: in the EU, the Blue Book traineeship programme and the Schuman Traineeship programme fund 5-month internships at the European Commission and the European Parliament respectively. However, internships may not be the best model to target PhD holders, only 6% of Blue Book trainees hold a PhD certificate according to the European Commission ([European Commission 2022](#)).

In Estonia, the presence of the network of science advisers may also help government departments in their role as potential hosts for fellows or interns. These could be appointed to the same unit and supervised by the science adviser, so there can be mutual benefit for a speedy introduction to EIPM and the culture of the department for the fellow or intern, and for the adviser to receive additional support for their role.

5.5 Strengthening the role of Strategic Foresight in the Estonian science-for-policy ecosystem

5.5.1 Problem statement

Evidence-informed policymaking requires an understanding of general future trends in the environment where the different policy areas are operating. At present, the Foresight Centre (FC) at the Estonian Parliament is acknowledged as the flagship for the active promotion of foresight methods and scenario analyses. However, according to the diagnostic report in Estonia, the practical use of foresight activities in the ministries is underdeveloped. During the focus group discussion on Strategic Foresight, the main goal was to discuss how to integrate foresight practices into policymaking across government and to incorporate the existing Strategic Foresight methodologies in the day-to-day practice. There are some ongoing collaborations on foresight between government departments, but more is needed, possibly including modifying the legal status of GO. This practice may also help to increase the acceptance and use of scientific evidence in policymaking by the higher levels of civil service and political representatives. This topic is related to the next section on innovative policymaking and there are overlapping gaps and possible solutions.

Table 4. Needs and gaps on Strategic Foresight in Estonia

Need/Gap - description	Relevant BOs and key stakeholders	Potential solution (where relevant)
Foresight practices are weakly used in the public sector	Government Office, line ministries	Establish at minimum a horizon scanning/change drivers analysis practice in each public organisation; provide guiding materials for this and where relevant make the linkages to public organisations risk management practice.
Lack or low understanding of different foresight methods	Government Office, ETAG, think tanks, universities, line ministries	Create training programmes/modules/micro-degree to policymakers, science advisers and management on foresight. Conduct demonstration cases on the use of Strategic Foresight methodologies across government policy areas.
Lack of foresight in strategic planning in public sector	HTM, Government Office, line ministries	Requirement of foresight and innovation to parts of ministerial R&D plans. Create an overall strategic plan for public sector innovation (including the role of Strategic Foresight activities) outlining the activities and synergies with EIPM practices and ministerial R&D plans
Missing horizontal links in long-term strategic activities of different ministries	Government Office, Foresight Centre	Integrate foresight to Estonia 2035 activities under the Government Office
EIPM process still not well recognised in society	Public sector in general, universities, politicians	Providing positive narratives, success stories, lobbying the topic, more media coverage by science brokers

Source: own elaboration.

5.5.2 Needs and gaps for Strategic Foresight

5.5.2.1 Individual level – Reduced awareness and literacy about foresight

Methodological knowledge specification

Foresight is the umbrella term for those innovative strategic planning, policy formulation and solution design methods that do not predict or forecast *the future* but work with alternative *futures*. Foresight has been defined as “a systematic, participatory, future-intelligence-gathering and medium-to-long-term vision-building process aimed at enabling present-day decisions and mobilizing joint action” (UNDP 2018). Based on the conducted interviews and focus group discussions with policymakers and key stakeholders in Estonia, there seems to be a lot of unclarity about what foresight is, how it can contribute to the policymaking process and what it means when discussed in the context of EIPM. This applies to all levels of the public administration. Familiarity with foresight methods is limited to scenario methods, with limited awareness of the variety of approaches and uses of the latter. During the focus group, the need for qualitative and quantitative methods in general was mentioned, but the distinction between and the complementarity of forecasting and foresight was not known. It was also voiced that horizon scanning is a very useful method but largely unknown outside the Foresight Centre. For a variety of foresight methods, see Annex 4.

Required training in foresight

In relation to the awareness-raising and introduction to different foresight methodologies, the overall strategic view of policy-making and the focus on long-term solutions is somewhat hampered by the heavy workload of specialist and middle-level officials. Foresight is probably not comprehensible yet to a large part of society either. As many science advisers are coming to the ministries from basic research, also their level of knowledge about foresight may be uneven – a common theme of this report. There is a need to invest in capacity-building for policymakers, analysts, specialists and science advisers, and practical use of strategic foresight across government.

Box 6. Capacity-building in Strategic Foresight: OECD pilot in Ireland

In 2022-2023 the Government of Ireland undertook an upgrade in policy development and strategic foresight spanning the whole public service. This work aimed to increase the ability of the public service to address complex policy in areas such as climate change, digitalisation, demographic changes, and long-term healthcare, and to contribute to futureproofing of such policies. Moreover, having a model of strategic foresight and anticipation to steward public policies is important for building more effective, legitimate, and proactive institutions that are suited to a changing context and evolving and emerging needs. For this building capacity for strategic foresight was found to be essential as prior assessments had shown a fragmented skill-set and limited awareness about strategic foresight.

With the support of the OECD, the Government of Ireland piloted a strategic foresight training programme aimed at senior executives and policymakers in spring 2023. For policymakers the training concentrated on strategic foresight specific competences (learning, framing, scanning, futuring, visioning, designing and adapting) and equipping policymakers with the ability to scan their environment, connect different futuring techniques to their policy issues and selecting strategic foresight tools and methods to specific needs in policymaking. For senior decision-makers the OECD ran the training concentrated primarily on understanding strategic foresight, visioning, decision-making under uncertainty and also creating the right organisational culture for the use of strategic foresight methods. The training was very well received and perceived as impactful by participants and the developed modules are integrated into ongoing training offers across the public service.

Additionally, the training was accompanied by practical demonstration cases to showcase the application of strategic foresight across different policy areas. In the latter, a total of 9 scenarios across the areas of demographics, data flows and enterprise mix were co-created together with the public service of Ireland.

Based on the pilot in Ireland, OECD through the European Commission TSI instrument is currently supporting Lithuania, Malta and Italy with the development of strategic foresight capacities in their policymaking system.

Source: OECD (2023), *Strengthening Policy Development in the Public Sector in Ireland*, OECD Public Governance Reviews, OECD Publishing, Paris, <https://doi.org/10.1787/6724d155-en>.

Problems with one answer vs several possibilities

As useful as these methods are, in general, foresight requires acknowledging the uncertainty of most policy contexts and tolerating different possible solutions and future scenarios, it is not a magic tool to make decision-making quicker or easier but requires a cultural shift in thinking amongst policymakers and politicians. During focus group discussions, it was said that “*decision-makers do not want to see different scenarios but one answer*”

and “*there is less political demand for foresight because policymakers need immediate answers*”. It is difficult to see the benefits of using Strategic Foresight in a long-term perspective when there is still no habit and continuity.

5.5.2.2 Organisational and inter-organisational level – Expanding foresight actors and organisations

Lack of resources

During the focus group discussions, there was general agreement on the high quality of the reports and outputs produced by the Foresight Center and their ad-hoc cooperation with specific ministries (e.g. HTM) was well-regarded. However, this cooperation is not consistent but rather project-based. For each project a team of ministry representatives is being put together for each specific topic and works on this for nine months. Due to limited staff (currently only staffed with six people) and resources, the Foresight Centre does not have a systematic overview of how each ministry subsequently uses the results of these reports, nor possibilities to put up a special foresight network with ministries.

Although substantive project-based cooperation also involves ministries, the Foresight Centre considers its main beneficiary to be the Parliament, who provides their budget. Therefore, they have a preference towards requests from members of parliament and parliamentary staff than ministries. It is not the role for Foresight Centre to recommend how to solve and issues but raise attention to challenges and opportunities that might arise. Ministries and other agencies should pick up the process from there and start making adjustments and future plans accordingly, but they also lack qualified staff and time.

Box 7. Examples of foresight in the international context

The development of foresight, meaning “the discipline of exploring, anticipating and shaping the future to help building and using collective intelligence in a structured, and systemic way to anticipate developments” is advancing across Europe.

On the EU level, strategic foresight informs the design of new Commission initiatives and the review of existing policies in line with the revamped [Commission Better Regulation toolbox](#). Since 2019 the College of Commissioners includes a Vice-President in charge of strategic foresight which underlines the importance of the topic. Furthermore, the Commission produces an annual Strategic Foresight Report, which informs the Commission Work Programmes and multi-annual programming exercises. This exercise is conducted through a participative and cross-sectoral foresight process, led by Commission services in consultations with Member States, discussion with the European Strategy and Policy Analysis System (ESPAS) and external stakeholders. Apart from inter-institutional efforts, the Commission also works with international partners and develops partnerships that draw on Member States’ public foresight capabilities through the [EU-wide Foresight Network](#).

In 2022, the European Commission conducted a one-year Mutual Learning Exercise (MLE) on Foresight run by the Policy Support Facility (PSF) of the Directorate-General for Research and Innovation (DG RTD) where Estonia (FC) participated with eight other countries (Austria, Belgium, Czechia, Finland, Norway, Portugal, Romania, and Slovenia). The final report includes several good practices, methodological guidelines and recommendations. The main findings from MLE report stated that despite the fact that Strategic Foresight is already being used in several EU countries, its potential is not being used to its full extent, and although good practices can be inspiring, every country needs their tailored foresight approaches. Cooperation is not only needed in regional, but also international level to tackle universal challenges (EC 2023). Another recent [foresight analysis](#) example included two world leading foresight countries, Singapore and Finland. The conclusions stated that the struggles to link Strategic Foresight with decision making are related to methodological limitations and the willingness of overall cultural change in processes (Djakonoff, Min Yi and Febriastati 2023).

During the current reform project, a mutual learning exercise with the 7 EU Member States participating in this TSI multi-country project was conducted in January 2024. The whole purpose behind the event was to offer a peer learning platform for exchange of good practices across participating Member States and with foresight specialists from the European Commission, the OECD, and other invited countries. A total of four Estonian participants coming from the Government Office, Ministry of Education and Research, Ministry of Economic Affairs and Communications, and the Estonian Research Council took part in this exercise and took onboard several insights and ideas. Similar international exchanges can be further promoted. Here, Austria, Greece, Portugal, and Lithuania, among others, showcased their efforts to implement Strategic Foresight into their policymaking processes. For instance, the Competence Centre for Planning, Policy and Foresight in Public Administration (PlanApp) in Portugal prepared the [foresight report “Brief analysis of economic activities at risk”](#) in light of the Russia-Ukraine conflict and was used widely in the government.

Reference material: [Strategic foresight - European Commission \(europa.eu\)](#)

5.5.2.3 Systemic level – Central coordination or decentralisation of foresight in government

Hard-earned evidence not being used

Currently, the lack of time and qualified staff poses a challenge to integrate Strategic Foresight more systematically and strategically in the activities of the Estonian public administration. All beneficiaries agreed that foresight methods, but also the reports by the Foresight Centre are somewhat underused in current evidence-informed policymaking processes and proposed that Strategic Foresight and anticipatory governance should be more coordinated. For example, the reports by the Foresight Centre do not always align with the policymaking cycle of ministries. The BOs did not have a good solution who should coordinate the so-called foresight system and proposed that maybe this should be built on something that is already there but at the same time stressed that the science advisers' workload is overwhelming as it is already. There are some similarities between the Regulatory Impact Assessment (RIA) methodology and foresight, but as even RIA is not carried out every time for different reasons (lack of time, lack of political will, or as some participant mentioned during the focus groups “*why to do it, if we can get the laws passed anyway*”), all the new obligations need to be enforced via trainings and central support systems. Private think tanks and universities are willing to provide more foresight exercises, but the public sector is often too rigid with procurement requirements or provides only insufficient time for the planned work to be carried out.

5.5.3 Potential interventions

5.5.3.1 Trainings and guidelines in foresight

There is a need for concise guidelines and trainings to fill the knowledge gap of different possibilities of foresight in the public sector. Special trainings for policymakers, and science advisers (if needed) about methods of foresight and a dedicated module/programme for senior leaders in their role in supporting foresight in their organisation could be compiled. This report recommends:

32. Establishing a **small foresight team at the government office and/or a network of experts or contact points appointed in every ministry**. This effort may help mainstream strategic foresight across government. The experts or contact persons at ministries could be involved in the analysis/strategic units and also receive specific training.
33. Training should be offered to all policymakers on how to integrate strategic foresight methods into their everyday work. Executive level training on the uses and usefulness of strategic foresight should be integrated into existing leadership training programmes.
34. Universities have the knowledge and infrastructure to offer specialized **micro-degree programme in strategic foresight** (but also innovative policymaking) (see Box 8).

Box 8. What is a micro-degree?

A micro-degree programme is a longer supplementary curriculum with comprehensive content provided by Estonian universities for a fee. It is created on the basis of one or more subjects of the existing curricula or as a separate supplementary study. Micro-degree students are learning together with the full-time students of the “parent” curricula. The volume of micro-degree programmes ranges between 6–30 ECTS and the duration is 1–3 semesters. An Estonian pun can be applied to micro-degrees: “even though you don't get an academic science degree, you get “one degree” smarter”.

Micro degrees are very popular in Estonia right now. They have been introduced in 2021 and saw 500 persons graduate in the same year (ERR 2021). There is a long list of degrees dealing with EIPM-related topics. The University of Tartu, for example, is providing a micro-degree in academic ethics with a practical approach, Tallinn University provides micro-degree in scientific data management and special programs on migration and integration policy. The list of possible micro-degree programs is constantly replenishing.

5.5.3.2 Building continuity and changing the culture for foresight

It is crucial to **continue the work of the Foresight Center** and find solutions to widen the circle of skills and knowledge of foresight to help with cultural change. The Foresight Center is financially dependent on the Parliament and therefore not best placed to coordinate the required support institutionalisation of foresight in the Estonian government, at best it could provide consultancy or ad-hoc support to specific policy fields as it has done sporadically with some ministries. It is, therefore, important to prioritise Strategic Foresight and build up a continuous, systemic practice in public organisations outside the Foresight Center. To do so it is recommended:

35. To familiarize wider audiences (including politicians) with benefits of foresight by **spreading success stories and positive narratives** throughout the government and in the media.
36. To consider whether an official **requirement to include foresight and innovation as part of ministerial R&D plans** could help more foresight exercises and better linkages with other existing science advice practices and actors.
37. Considering the steering role of the government office for Estonia 2035, there is potential to **integrate foresight methods to address overarching topics and missing horizontal links** between the administrative areas of different ministries. Similar to other countries (see Box 9), the government office in Estonia could conduct, as part of Estonia 2035 strategy or beyond, a foresight exercise for the future of Estonia.
38. There is much foresight done in the world, which is also relevant to Estonia and the EU. **Estonia should systematically map these reports and learn from them** (see Box 9).

Box 9. Strategic foresight in government institutions and national organisations, networks and practices

Most OECD countries use Strategic Foresight in some way to build stronger policies in the face of an uncertain future and while the functions of Strategic Foresight may be clear, the models and application across countries differ. For example, Singapore with the Centre for Strategic Futures and Finland with the Strategic Foresight Unit at the Prime Minister’s Office steer Strategic Foresight from the centre of government and conduct also whole-of-government Strategic Foresight studies (e.g. the “Government Report of the Future” in Finland). Additionally similar models have now been adopted in the Spanish, Portuguese (PlanApp) and German Federal Governments. These central units of excellence can also build capacity across the public service and coordinate communities of practice or Strategic Foresight networks. For example, the Centre for Strategic Futures in Singapore has adopted foresight as part of its strategic planning cycle, using Scenario Planning Plus (SP+) as a toolkit to cope with emergent trends or unexpected events. The Centre disseminates toolkits and develops new skills across government via workshops and courses for public officials called FutureCraft (Monteiro and Dal Borgo, 2023).

In 2020, with leadership buy-in and with a legal instrument ([Royal Decree of the 27th of January 2020](#)), Spain created the Oficina Nacional de Prospectiva y Estrategia ([National Foresight and Strategy Office](#)). The necessary structure to ensure demand and mandate was inspired by consolidated systems around the world, such as Singapore and Finland, where Strategic Foresight units are at the centre of government and close to senior decision makers. It is responsible for analysing upcoming challenges and opportunities and reports directly to the President and his Chief of Staff. The team is made up of experts from various fields, including economists, historians, environmental engineers, jurists, and political scientists. The office collaborates closely with government ministries, universities, think tanks, and NGOs, and also represents Spain in the EU-wide Foresight Network of the European Commission. Among various activities, the Office led the development of the [Long-Term National Strategy “Spain 2050”](#), which is a collective intelligence and Strategic Foresight exercise. It aimed at improving the understanding of future social, economic and environmental challenges and opportunities Spain will face and to generate a shared vision of the country via a multi-stakeholder discussion. The office also provides quick reaction briefs for highly relevant topics and internal documents for the Government Office and the ministries, and communication outputs for the wider public such as podcasts and books.

Furthermore, the formulation of the long-term state progress strategy, “Lithuania 2050”, marked a significant advancement in fostering collaborative practices of Strategic Foresight and deliberation on the long-term policy goals among scientists, experts, and policymakers in Lithuania. The experience and policy learning generated through the formulation of “Lithuania 2050,” which involved incorporating scientific expertise and promoting collaborative practices throughout the formulation of the strategy, have the potential to make a positive contribution to the long-term culture of EIPM if the networks and collaborations that have been set up in its framework are sustained during the implementation process.

Other countries, like Canada, deliberately placed Strategic Foresight capacity in a more decentralised and independent manner. The Canadian centre of excellence in foresight, Policy Horizons Canada, reports to the Minister of Employment, Workforce Development and Disability Inclusion, but has an oversight body comprised of experts from across and outside the policy system. Strategic Foresight upskilling is a core initiative within Policy Horizons, providing public servants introductory modules on foresight practice as well as advanced modules with innovative approaches to support policy development and connected learning resources available online. Singapore as well aims for foresight capabilities to be distributed across the policy system by fostering staff mobility out from their central foresight unit into policy teams of all Ministries. This has led to a broad understanding of the approaches, needs and methods of Strategic Foresight across all levels of decision-making within government.

In many other governments, including the Netherlands, Strategic Foresight capacity is more distributed with each ministry and agency having their own Strategic Foresight experts and the central unit (the [Netherlands Scientific Council for Government Policy \(WRR\)](#)) providing Strategic Foresight expertise only on request or to specific across-government projects. In most OECD countries, there tend to be sectoral pockets of excellence of Strategic Foresight often connected to the defence sector or specific fields such as demographic change, sustainability or finance. For example, Sweden has a longstanding tradition of carrying out a so-called “perspectives analysis”, a type of future-oriented analysis of potential threats and vulnerabilities, in their Armed Forces, but have not to date built foresight capabilities more broadly at central level or in other policy areas. Germany also has a longer tradition of foresight work in their military as well as in some departments such as the Ministry of Education and Science and the Environmental Agency. While some of this work feeds into decision-making, most of the analysis is carried out by external consultancies and remains disconnected from internal policymaking realities.

Reference material: [The Office | National Office of Foresight and Strategy of the Government of Spain \(futuros.gob.es\)](#); Djakonoff, V., Min Yi, C., and Febriastati, A. (2023) Foresight and policymaking: lessons from Singapore and Finland, available at: <https://demoshelsinki.fi/2022/09/26/foresight-policymaking-singapore-finland>, accessed on 29/01/2024.

5.6 Embracing innovative policymaking in the Estonian S4P ecosystem

5.6.1 Problem statement

Public sector innovation is a product, service, process, communication or policy that is novel to the context and impacting public value. Innovative policymaking, thus, refers to the usage of tools and methodologies that are innovative to the context (process innovation) or contribute to the emergence of policies that are innovative in nature (based on the definition of OECD 2022). Public sector innovation or policymaking innovation does not happen in isolation and is always embedded in existing social and political structures which crucially shape its possibility, success, and failure. Various factors, including governance, cultural norms, economic system, and political stability, define the ecosystem in which policymaking innovation initiatives operate. Understanding and addressing this ecosystem is crucial for fostering a climate that encourages and sustains policy innovation.

A focus group about innovative and experimental practices was carried out to further understand how innovative policymaking is in place in the Estonian science-for-policy ecosystem. It was composed of members of the BOs and different government organisations that are involved in innovative policymaking. The discussion aimed to address issues such as ethical, political and legislative considerations, sustainability, data governance and analytical capacity and the possible need for trainings.

According to the diagnostic report, Estonian civil servants in general value innovative practices, but often take the easier path when commissioning analyses for a variety of reasons – lack of time, limited budget and uncertainty about whether the implementation of new methods may be successful. Members of the scientific community and private think tanks are willing to offer more foresight, policy advice, and other consultancy services but they are hampered by overly prescriptive procurement documents. In the public sector, the Innovation Team at Government Office leads the way by supporting the uptake of innovative and experimental practices and co-creation across government departments by using their special methodology and training-the-trainers (sherpas) programme. Having said this, different problems have appeared around the access and quality of the register data and general legislative issues for implementing new innovative approaches next to more traditional ones.

Table 5. Needs and gaps related to the topic Innovative policymaking

Need/Gap – description	Relevant Beneficiary Organisations and key stakeholders	Potential solution (where relevant)
Legal and ethical concerns limit the use of innovative methods	Line ministries	Trainings, good practice materials/guidelines; Special ethics committee for public sector projects; Special trainings/materials for legal departments
Lack of funds to test new approaches	Statistics Estonia, line ministries	Raise overall awareness of benefits of innovative and experimental EIPM amongst top officials and politicians
Data quality and availability issues	Statistics Estonia, different data providers; ETAG	Allocating funds to standardise databases from different national authorities to link data; data stewards in ministries/public agencies. User-friendly system to store data and reports for use and re-use
Low awareness of the use and possibilities of innovative and experimental methods	Line ministries	Revitalising analysts' roundtable as a good platform for information sharing
Need for change the culture of EIPM	Public sector in general, politicians	Providing positive narratives, success stories, lobbying the topic, training secretary generals and deputy SGs

Innovation tends to be project based, concerning a small circle of specialist, not sustainable and widespread	HTM, Government Office	Requirement of innovation to be part of ministerial R&D plans. Create an overall strategic plan for public sector innovation outlining the activities and synergies with EIPM practices and ministerial R&D plans
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Source: own elaboration.

5.6.2 Needs and gaps for promoting innovative policymaking

5.6.2.1 Individual level – Lack of knowledge and visibility of innovative policymaking

Almost every focus group brought up the need of good and motivated science or knowledge brokers (see section 5.3.3.2) meaning somebody who can understand all sides of the Estonian science-for-policy ecosystem including innovative policymaking practices (academics, policymakers and politicians), who knows both languages, can facilitate between them and has good communicative skills. In Estonia, the position of science/knowledge brokers is partially fulfilled by some ministerial science advisers and in the case of MKM, the adviser also supports knowledge management. In all focus groups, government employees have outlined the science advisers to be (or become) these potential “wonder persons” (see section 5.3 above on science advisers). Still, focus group members acknowledged that adding the task of advocating innovative methods to the list of responsibilities of active science advisers may not be feasible given the already heavy workload of science advisers. However, science advisers should have a role to play in this. Science advisers are supposed to have some degree of familiarity with research methodologies including different forms of public experimentation which is part of the bundle of innovative policymaking. Therefore, science advisers should provide robust methodological advice into potentially innovative processes in the public sector.

As the Innovation Team at the Government Office has successfully shown, the interest in participating and learning new methods is present also in other positions of public sector officials (policymakers, analysts), and as for the overall ministerial interests, the demand for trainings exceeds the possible supply considering the limited size of the Innovation Team (currently six officials).

In addition to the Innovation Team, there is an Innovation Fund team that supports public sector entities for large-scale experimentation and innovation and is currently comprised of four officials.

Applying new methods and designing public policy experiments and randomised control trials raises both ethical and legal issues regarding which there may not be any previous practice to start from. As a significant part of the EIPM process requires cooperation with researchers and outsourced services/advice from them, trainings needs to also target legal units of the ministries who prepare procurement documents. As per focus group participants, the attitude of lawyers towards new or experimental methods is understandably sceptical, therefore it would be necessary to build mutual understanding and increase awareness about the EIPM overall processes, including risks and possible benefits to them, to ensure a fruitful co-creation of these innovative practices bringing policymakers, legal teams, scientists and analysts altogether.

Both focus groups on foresight and on innovative methods brought up the administrative level of secretary generals as a target group to work with to prove and convince them about the usefulness of experimental and innovative methods. This exercise can lead them to influencing the general cultural change and encouraging positive funding decisions of modern EIPM. It was estimated in one of the focus groups, that it would boost the visibility and use of innovative policymaking if senior officials dedicated a fraction (for example 2-5% of their time) to new trainings on the matter. Currently, there are many new technological advancements, such as the use of artificial intelligence or knowledge management software tools that can improve existing processes in the public administration, but their implementation requires the active involvement and constant learning of public servants including the senior levels. At the same time public servants would be eager to learn new technologies and methods, but they cannot do it on their own.

5.6.2.2 Organisational and inter-organisational level – Budget and ownership of services

Budgetary reasons that result mainly in the lack of sufficient and trained staff was mentioned as a problem by several institutions (ETAG, Statistics Estonia, Innovation Team) as there is willingness to do much more than it is possible in the current situation.

Another common concern is the ownership of the process and the storage of the data afterwards. This is particularly related to the fact that innovation projects usually include several institutions and data sources.

Research Funding and Ethics, and Data Storage

During the focus group discussions, ETAG listed several challenges that the Estonian S4P ecosystem is currently facing: uneven awareness of innovative methods, quality issues of reports, the scattered character of Estonian research data where some of them is stored in data warehouses outside of Estonia, and the current law does not support innovative methods for ethical considerations due to data protection, internal data use, public policy experimentation and other aspects, to name just a few. An example of good recent organisational development was the creation of their department for strategic analysis. The department, employing 14 people, is set to lead the analyses of the effectiveness and impact of using research funding on society; monitoring and analysing the availability of research information generated as a result of provided funding; monitoring the creation and use of intellectual property, and the adherence to the ethical principles and research integrity.

Since ministries are not R&D organisations, a separate topic is related to the ethical aspects of public sector research or public sector analyses. As put during the discussions: the *“problem is that innovation is always a few steps ahead of ethics”*. The Estonian research ethics system is an issue in the new TAKS but it does not address the ethics of public sector innovation. Currently, ETAG does not have an official mandate yet but has already created the position of the ethics coordinator who communicates with both universities and the public sector. Furthermore, good prerequisites have been created for the prevention of ethical problems in EIPM-related research projects. As the central research ethics system is still under construction, the possibility of creating a separate committee for public sector projects is being considered, with the aim of saving university committees' working time.

Statistics Estonia is the main actor dealing with questions of data storage. One of its goals is to contribute data-driven policies by lowering the manual administrative burden of data providers and use innovative methods to gather data from internet and registries themselves (web scraping, machine learning). For five years they have had an experimental statistics unit, and they also provide services/projects for a fee commissioned by the public sector that does not belong to the national statistics programme. However, such work is unsustainable, as resources are generally not allocated to maintain and innovate these new applications. Statistics Estonia brought up that they are competing with private sector for staff who are willing to pay more for skilled analysts and data engineers. The organisation is underfinanced considering new needs, expectations and skills of innovative methods.

The Innovation Team at the Government Office

The Innovation Team is unsurprisingly the key player in the innovative policymaking by aiding ministries and government departments with urgent policy concerns, testing new policy methodologies, and building internal capacity in government throughout the process. Reporting directly to secretary generals, the team engages in two primary formats to promote EIPM and interact with government officials. The first requires submissions of collaborative issues among multiple stakeholders, such as various ministries. Innovation Team evaluates projects for potential impact, forwarding endorsed applications to secretary generals for final decisions. Then it takes these multi-stakeholder teams through a hands-on 8-10 months service design process that culminates with new policy experimentations. The second format, *“Innosprints”*, involves six-week programmes where any team across government can apply, focusing on smaller problems (for more information on both, consult the diagnostic report). Utilizing a design-thinking approach, the team progresses from problem definition to user-tested solutions within five working days. The team plays a vital role in connecting the government and research, engaging scientists in teaching and consulting. It boosts public servants' capacity to understand academic literature, fostering an experimental culture within the government. By normalizing diverse methods in EIPM, the Innovation Team breaks down organisational silos, involving various stakeholders for project success. Recent initiatives include training policymakers for public innovation, policy experimentation, and broader stakeholder engagement, establishing an additional training platform within public administration. These two formats have been received well, thus establishing for the innovation team a certain icebreaking or catalysing role at the heart of the administration.

Nevertheless, the current analysis, encompassing both diagnostic reports and focus group discussions, reveals that despite some commendable instances of innovative policymaking initiatives by the Innovation Team, the

scope of such endeavours within the Estonian public sector remains restricted, partly also due to the small size of the team (only six members). These initiatives, at best, offer advisory services and ad-hoc assistance within specific policy domains. Regrettably, this falls short of fostering a consistent, systemic approach across diverse policy areas within public organisations. While the Innovation Team is diligently crafting practices rooted in human-centred design, their efforts are somewhat constrained, leaving systemic capacities and development essentially unaddressed by the innovation fund. To truly elevate the prioritization of innovative policymaking, a more comprehensive and systemic commitment is recommended, transcending the current limitations.

5.6.2.3 Systemic level – Lack of data access, reuse and sharing

One of the crucial gaps at the systemic level that was highlighted from different angles in all focus groups is that different organisations (such as ministries) do not share data with each other via commonly accessible data warehouses, or the sharing is not possible due to the lack of a common toolbox of data-related methodology. When it comes to innovation, that is, devising and applying new methods for policymaking, there is a need for structured data and easy access from ministries. Currently one must ask for data separately from each organisation that, in turn, tend to be very restrictive. This means that not only data, but also reports and outputs are in silos, which leads to repetition and inefficient use of work time. It is strong in public administration to build and reinforce administrative silos where each ministry is very much protective on their policy sectors and, by extension, on their data collected, but new approaches for data management and whole-of-government responses require some coordinated effort across ministries. Currently, an AI-based tool is developed which allows to search for data across the ministries better.

Related to that is the issue of data protection in Estonia: on the one hand, ideologically the country tries to be innovative, but on the other hand it has very conservative data protection measures (including laws and the ethics committees). This creates a situation where talk of data privacy prevails over talk about data usage. In essence, there could be ways to make data access and sharing something more automatic and efficient while preserving data personal privacy.

Data reuse is also of fundamental importance to reduce data overload, exploit already collected data, save resources, time for analysts and also potential respondents from whom data is requested.

5.6.3 Potential interventions

The list of possible interventions rests on different pillars as also summarized in Table 5. Three main clusters of potential interventions are suggested to address the existing gaps of low awareness of innovative approaches, and not that intense regular communication and data sharing among ministries, lack of funding for long-term innovation projects, and general administrative culture that could be favouring policy innovation more.

5.6.3.1 Increasing awareness of innovative methods through training, regular communication and data sharing among ministries

39. There is **quite low awareness of the use and possibilities of innovative and experimental methods across top civil servants**. **Informing, raising awareness, and training top managers** was brought up as means to draw their attention to new innovative opportunities and to encourage positive budgetary decisions
40. Reinstating **semi-regular inter-ministerial meetings for analysts** (so-called **analysts' roundtable**) to introduce best practices and develop common guidelines, methods and approaches for day-to-day analytical work. Currently, the Ministry of Economic Affairs and Communications leads an informal network of analysts that has proven effective for peer learning across government ministries.
41. To facilitate data sharing between ministries, comprehensive **data standards could be developed, and roles of data stewards** appointed. Also, a development of a **public user-friendly system to store data/reports for use and re-use** could help accelerate the process and reduce unnecessary costs.

5.6.3.2 Increasing funding for long-term innovation projects

42. **Insufficient funding** limits the number of public sector officials who get the opportunity to participate in innovation programmes. When it comes to lack of funding, the **internal motivation** should be kept up and **necessary skills and tools up to date**, both for analysts and for the top officials. The new

Innovation Fund, developed as part of the Estonia 2035 strategy, offers an interesting opportunity to further promote the role of the public sector as a leader in innovation and provide funds for innovation in the public and private sector, with heavy involvement of the scientific community.

43. Enforce innovation as requirement to be **part of ministerial R&D plans** and/or creating an overall **strategic plan for public sector innovation** outlining the activities and synergies with EIPM practices and ministerial R&D plans.

5.6.3.3 **Normalizing the use of new practices, engaging the legal departments more in new methods training**

One FG participant put it very elegantly: *“I dream of changing the culture, where innovation is used as a tool for finding solution and not just [seen as] a hobby”*. In other words, as put by another participant, *“innovation should not be just a hobby, but a crucial tool for policymaking”*. To facilitate this culture, change the following recommendations have been prepared.

44. To accelerate the process of culture change, specialists and management should be **trained at the same time in pairs**.
45. **Success stories, new narratives** and more specific topics of innovative methods and new approaches in EIMP should be more integrated to the training programmes and guidelines for top management in ministries, including **secretary generals**.
46. **Legal and ethical concerns** limit the use of innovative methods. It would be beneficial to train and engage more **legal departments** to be willing to take on more risks with new methods for possible greater gain or to enable secure spaces for experimentation such as regulatory sandboxes and policy randomised-control trials, with the active co-creation with the scientific community.

5.7 **Unequal access to coordination and support mechanisms for EIPM in the Estonian S4P Ecosystem**

5.7.1 **Problem statement**

This section of the report will mostly focus on addressing the systemic level to get a macro view of the state of EIPM in Estonia is required. This report (and this project) has shown that there is a general positive outlook towards EIPM in Estonia. However, this varies greatly between individuals, ministries, agencies, universities, research performing organisations, and other key stakeholders. The Government Office acknowledges this, and the current trajectory is to build up individual organisations through different instruments (e.g. making compulsory R&D plans/programmes for ministries that forerunners have already implemented, but others have not) rather than making the central coordination mechanism stronger.

And while standards and formalising approaches improvements can be made, without more central coordination and clearer political mandates, the issues and variety between ministries will remain and, therefore, also across-government science for policy needs will remain unmet.

Based on the diagnostic report and the focus group discussions, training needs, funding schemes and analytical skills need to be further developed to address these challenges. Estonia benefits from a mature S4P ecosystem with actors, networks and well-established processes, a culture for evidence in the public administration and willingness from the Government Office to take a leading role in coordinating and developing this system further. However, attitude and knowledge of science advice, data literacy, and the use and uptake of scientific evidence are unevenly spread across government departments and, in general, evidence has different challenges (e.g. knowledge and access to funding streams, data literacy and availability, use of evidence in *ex ante* evaluation and lack of *ex post* evaluation) to getting their way into the high levels of the civil service and the political authorities. Identifying the gaps and needs of the mechanisms needed to further coordinate and support evidence-informed policymaking are thus required.

Table 6. Needs, gaps and potential solutions for improvement of coordination and support mechanisms for evidence-informed policymaking in Estonia

Need/Gap – description	Relevant BOs and key stakeholders	Potential solution (where relevant)
Better identification of knowledge needs inside government departments and understanding which funding schemes suit those	ETAG, Ministerial Science Advisers	Deploy an internal strategy for identification of knowledge needs inside ministries with open calls for collaboration; Train advisers to choose correct funding scheme; make funding schemes more visible
Policymakers and legal departments lack of knowledge of the role of science advisers and the scientific method	ETAG, HTM	Conduct trainings on the role of science advisers across ministries; Train policymakers and legal professionals on the nature of research to be able to adequately assess the success rate (and risk) of research
Lack of data literacy and data availability	HTM, Government Office, MKM, Statistic Estonia	Systematise and scale up data literacy training offers from Statistics Estonia and MKM Develop more clarity of the roles of Statistics Estonia and MKM in storing and providing data
Lack of access or appreciation for different funding streams	ETAG, line ministries	Systematise the learnings from R&D procurement practices – specifically learnings from applying the R&D exemption – and make these widely available across organisations; offer research stream consultations
Inflexibility of public procured research	ETAG, HTM	develop a non-research, short-term science-informed advice mechanism

Source: own elaboration.

5.7.2 Needs and gaps in the coordination and support mechanisms for EIPM

5.7.2.1 Individual level – Lack of data literacy

An important aspect next to the availability and infrastructure of data is the competence or data literacy and analytical skills of the civil servants. It is important to note that not every policymaker needs to be a data analyst, but they have to have a basic level of understanding of available data, what one can do with it, and what successful research projects look like. Civil servants have been receiving a lot of training in data literacy – of course there can always be more. However, what became very clear throughout the discussions was that there might be a need to shift the focus slightly towards civil servants becoming better “demanders for research”. They should have a grasp of the basics of research such as defining a good research question, assessing research methodologies, and understanding quality parameters for successful and effective research. It must be important for them to be conscious that seeking support from science advisers is crucial for obtaining high-quality research. These aspects might be harder to teach for the existing partners (e.g. Praxis) and universities and other research performing organisations should become a much more active partner here. They have the knowledge as well as the infrastructure to carry out these trainings.

5.7.2.2 Organisational, inter-organisational and system level – Lack of data availability or accessibility, identification of knowledge needs and access to different funding schemes

Data availability and accessibility

Throughout this report, there has been ample acknowledgement that data and evidence should play a big(ger) role in policymaking in Estonia. However, there are hurdles in form of data literacy, data availability, but also structural and political constraints that require data to be available faster than possible. There is also a gap

between the understanding what data is needed for making an assessment and what data is available. In that line we also heard that often the wrong people or the right people with a big delay are consulted. Furthermore, there is no consensus on how the data should be made available which also has to do with the large amount of available data. While wrestling with this question, for example, Statistics Estonia does not think that policymakers should not communicate to them what data they need but rather state their problems and SE can provide the data based on their analysis and experience. On the other hand, ministries are often not even turning to them but instead rely on their own analytical departments. This points to the lack of centralized data storage and access, although at the same time one of the cornerstones of Estonia's e-government approach is the use of decentralised information systems. So far, a sustainable and secure solution that would allow mitigating this principle has not been found. Statistics Estonia has the aspiration to become the home and contact point of all public sector data (and perhaps even private) which matches with their mandate of data governance. Unfortunately, not enough resources for building the needed infrastructure are available.

Identification of knowledge needs and awareness and access to different funding schemes

Different ministries have very different level of understanding of their knowledge needs. Such a disparity is natural when the level of technical expertise required and familiarity with scientific evidence differs among government departments. That being said, the inclusion of science advisers has helped ministries to establish internal deliberative processes to identify knowledge needs and participatory consultations with key external stakeholders in the system (scientific community, universities, industry, etc.) such as the Ministry of Climate, the Ministry of Defence or the Ministry of Economic Affairs and Communication. But still the process for internal understanding and awareness is heterogeneous across ministries and common guidelines can be welcomed. Other countries have established elaborated processes to identify knowledge needs in government departments - see Box 10.

Box 10. Formulation of knowledge needs and research priorities I: Areas of Research Interest in the United Kingdom

These knowledge needs are then publicised annually by each government department and the scientific community may apply for funding and/or base their scientific research on the policy needs and priorities. This process does not replace the multi-annual national strategy for research, development, and innovation. Instead, it offers additional venues for projects in science for policy.

Under the light of the needs and gaps assessment in Estonia, and with the successful ongoing exercise at the Ministry of Economy and Communications, ministries could explore a similar way to institutionalise a process to identify knowledge needs and research priorities for more regular and closer collaboration with the scientific community.

The **Areas of Research Interest (ARI)** – articulated research interests of the government – are a response to the call for a more strategic approach for research and development programmes including research needs by the government of the United Kingdom (UK). Starting in 2015, government departments were asked to compile their current, most important research questions they are facing. This is meant to highlight the departments' shortcomings in terms of evidence and knowledge and ensures that the need to inform policymaking and to improve government performance can be addressed. The compiled documents serve as platform of engagement for different stakeholders and build dialogues both between the different departments and experts, research councils, industry and other organisations in the R&D landscape. It also gives academic experts the opportunity supporting the government to address their research needs.

The development of ARIs has several benefits:

The development of ARIs can foster cross-governmental and cross-sectoral work. ARIs help to communicate departmental research interest across the government departments and promote collaboration. Furthermore, they facilitate dialogue and exchange between experts in academia, private sector and from other stakeholders to address research needs and gather evidence.

Research based on ARIs is directly addressing all stages of the policy cycle and thereby contributing to evidenced-informed decision making. The impact can be created via insights of experts as well as via experts participating in advisory committees and working groups.

By clearly outlining departmental research interests, ARIs create an environment that encourages the use of research and innovation within the government. This fosters a culture of valuing research and its active use within policy development and decision-making.

In conclusion, by promoting collaboration, communication, and investment in research, ARIs can contribute to the advancement of evidence-based policymaking and the development of effective policies not only in the UK but beyond and could, therefore, be integrated in the science for policy efforts of other European countries as well.

Reference material: Government Office for Science (2022): Writing and using Areas of Research Interest. Retrieved from: <https://www.gov.uk/government/publications/writing-and-using-areas-of-research-interest/writing-and-using-areas-of-research-interest> [15.12.2023]; [ARI Database](#) | Search, browse or analyse Areas of Research Interest (ARIs) from UK governmental bodies.

Similarly, there is a different level of familiarity with and access to funding schemes, and also arguably willingness to adopt alternative options, that could help to meet those needs with policy analyses and research studies. Additionally, better framing of any collaboration with the scientific community should be conducted, as occasions when researchers have used the funding to perform research but without creating anything that could have an impact on policymaking would not help build trust and encourage ministries to exploit more trust-based research procurement process.

Again, science advisers have helped run public procurement exercises, public procurements with the R&D exemption, and also research project grants with the support of ETAG. Yet there is a certain disparity, lack of common practices or exploitation of certain mechanisms that are not fully fitted for the requested analysis. This has also something to do with the lack of trust between policymakers and researchers. There are many instances in which researchers have not produced anything with impact for actual policymaking.

The standard choice tends to be public procurements, which is only a good option when it is a standard study with predefined methodology (which is not something the universities and researchers find useful) and to be delivered in a short timeframe. Unfortunately, most experimental studies fall outside of this, which means that they are often not funded – even though experimental designs are promoted by Government Office and many ministries. This could be combated if other funding streams are more visible and also ETAG consultation services are used more often.

A second choice that seems to be underutilized is running public procurements with the R&D exemption. For instance, the Ministry of Social Affairs uses the R&D exemption (for research projects that are purely scientific) very often as it gives a great level of flexibility but shies away from public procurement and public research competitions. In an ideal world, both streams are used frequently and efficiently. The underuse of this funding scheme may be related to the fact that some ministries struggle with assessing the exception – which points to the training needs in the scientific method described in the previous sub-section. This is not too surprising as different ministries have also very different needs, but also staff with different expertise that helps with ordering research.

A third choice is the deployment of public research grant competitions, managed by ETAG, which may be a mechanism more useful to engage with the scientific community and for medium-term research projects with clear transferable results into policymaking. ETAG is currently raising awareness about this possibility and science advisers are helping to pilot them.

Yet, to explore the best possible funding scheme and tailor it to the specific knowledge need, the ministry is supposed to conduct the internal deliberation and participatory process with key stakeholders. In this regard, MKM created research roadmaps based on strategies and more interestingly created a platform on which researchers can enter their research problems and policymakers can decide to fund it if it is also in their interest. This whole comprehensive exercise to identify knowledge needs and assign the most appropriate funding scheme resemble in principle the UK Areas of Research Interest or the US Learning Agenda, as established protocols in these administrations that are coordinated by ministerial science advisers and open for the wider society (see Box 11).

Box 11. Formulation of knowledge needs and research priorities II: Learning Agendas in the United States

The Foundations for Evidence-based Policymaking Act of 2018 established the requirement of all US agencies to develop a “learning agenda” which consists of systematic plans to address policy-relevant questions relevant to the programme and strategy of the respective agency. Through the **Learning Agendas**, or strategic evidence-building plans, the agencies are meant to pay systematic attention to gaps and needs of evidence to solve their problems as well as to how to address them. Apart from the questions, the agencies also have to include which types of evidence, data, methods and analytical approaches will be used evidence in policymaking. The process of identifying the priority research question involves a collaborative process by engaging with internal staff as well as external stakeholders. The Learning Agenda serves as basis for developing evidence-building activities to produce evidence meeting the agency’s needs and questions. An annual review ensures that the Learning Agenda is flexible and iterative which captures changing priorities and needs.

The Learning Agendas have the benefit of promoting the exchange of ideas and perspectives of different stakeholder which brings the most relevant questions to the attention as well as it provides understanding to reciprocal impact of an agency’s policies for its recipients. Furthermore, the process of developing the Learning Agenda can shape individual behaviours and organisational culture towards evidence-informed policymaking. Lastly, by providing a structured set of questions, planned activities and products, learning agendas guide the collection and analysis of information, allowing for more informed decision-making and, thereby, contribute to the science for policy efforts within the US.

Reference material: [Department of State Learning Agenda 2022-2026](#); [2022-2026 Agency Learning Agenda | Evaluation | U.S. Agency for International Development \(usaid.gov\)](#); [Evidence Toolkit: Learning Agendas \(urban.org\)](#); [The Promise of Evidence-Based Policy-making: Report of the Commission on Evidence-Based Policy-making \(census.gov\)](#); [learning_agenda_tip_sheet_final.pdf \(usaidlearninglab.org\)](#)

Lastly, innovation in coordinating funding streams was also part of the latest TAN measure that will also see mission-oriented research funding increase. Funding will be split across parties at a 40-40-20 regime, but many respondents have voiced their scepticism about the success of this approach. The potential missions will be taken

from the “Estonia 2035” list concentrating on those that are “science-led”. One positive aspect is that the missions will cross ministerial silos which means that the role of the Government Office will have to increase.

5.7.2.3 Regulatory Impact Assessment

Data and evidence play a major role in the Regulatory Impact Assessments (RIA). In Estonia, only ex ante assessments are conducted. Those processes still deliver unequal results depending on the policy, the government department and the political priorities. One focus group participant called ex ante evaluations one of the weakest points in the policy cycle as the objectives of policies are set on the political level and not based on evidence. They furthermore suffer from lack of time, access to data, asking for consultations from wrong actors, and a general lack of awareness of its importance. There are also different agendas on which legislation to push. A call for more centralization or institutionalization is also necessary here. Smart roadmaps outlining R&D direction that are aligned with strategic goals would help – which can be more aligned across ministries in our new version of the TAI coordination body.

5.7.3 Potential interventions for coordination and support mechanisms for EIPM

5.7.3.1 Trainings and capacity-building

Training and capacity-building is currently happening in a fragmented manner between top leadership, policymakers and in specific organisations. For EIPM to make a significant leap forward, more systemic training efforts are needed that align the actions of different actors (Government Office, Ministry of Finance and other training efforts provided by MKM, Statistics Estonia, ETAG etc.). Furthermore, policymakers need trainings on scientific method and theory to improve their ability to understand, unpack and even formulate research problems. This will also drastically improve the quality of *ex ante* assessments and problem analysis. Additionally, the need to create usable data, but more importantly, to read and understand it, is only going to grow going forward. To address these aspects, we formulate the following recommendations:

47. **Delivering training on the role of science and science advice to ministries** across all levels with the additional aim to also align the role of science advisers (described in section 5.3). For this, the issue of central training to policymakers (the budget is available via ETAG) needs to be also addressed.
48. Systematising the offer of additional training exercises supported by **ETAG to science advisers**, in order to strengthen their competences and widen their expertise and literacy around other emerging aspects covered in this report: foresight, knowledge management, policymaking practice, engagement with scientific community, whole-of-government approaches, ethics, regulation and law-making, and so forth. This systematic intervention could be part of the strengthened role as the Government Office or ETAG as coordinating body for the network of science advisers and it could also help individual gaps in professional competences for science advisers.
49. In the medium to long-term developing a **micro-degree for science for policy** (see Box 8) to train new professionals.
50. **Systematising and scaling up data literacy training** offered from Statistics Estonia and MKM.
51. Creating **more clarity of the roles of Statistics Estonia and MKM** in collecting, synthesizing data and offering data literacy trainings about it.
52. Increasing funding dedicated to Statistics Estonia to improve the data literacy of the government and its organisations.

5.7.3.2 Knowledge needs identification and funding schemes

As aforementioned, there needs to be an establish protocol for identification and raising awareness of the knowledge needs inside government departments (based on both an internal wide deliberation across departments and units and a participatory process of engagement with interested external stakeholders). Besides, much of the needed research is tendered via a procurement process. Both demand- and supply-side are rather dissatisfied with this mechanism due to its inflexibility with timelines and “fit-for-purpose” research insights. To improve the mechanism, the following recommendations are of interest:

53. Developing **an established protocol for identification of knowledge needs inside government departments** to provide and publicise them periodically to make it open to the wider scientific

community (see Boxes 10, 11, and 12). If necessary and deemed appropriate, introduce these documents to major stakeholders (e.g. universities) to give a broader context about the objectives, foster discussions and networking possibilities (this would also prevent cases where public documents are “hidden” on ministries webpages).

54. **Systematising and tailoring these knowledge needs according to the different available funding schemes:** public procurements, public procurements with R&D exceptions, and public research grant competitions. Sharing internally and raising awareness common lessons on applying R&D exceptions to public procurements and make these widely available across organisations. In addition, introduce and promote legal ways how to foster more flexible modes of cooperation (e.g. advice/consultancies on an as-needed basis, reflections on literature review, mirroring of ideas) in order to be in line with the agile policy development process. Science advisers and legal teams should receive extra trainings, if required.
55. When (if) **the mission-oriented approach** will materialize, **the Government Office needs to increase its role to coordinate inter-ministerial cooperation.** The Government Office coordinates the funding mechanism by first evaluating the programme (for example via TOC (Theory of Constraints) and then allocate money to mission-oriented research; this should also be the approach when formatting new R&D plans in the ministries.

Box 12. BETA2 Programme, Czech Republic

The [BETA2 programme of public contracts in applied research and innovation](#) to meet the needs of government authorities was approved by Czech Government Resolution No 278 of 30 March 2016 and supports applied research and innovation required by state administration bodies. The funding provider is the Technology Agency of the Czech Republic (TA CR). The focus of the programme is to support applied research and innovation to meet the needs of government authorities, especially the needs of those institutions that are not providers of support for research, development and innovation. The aim of the programme is to support the performance of research activities in order to develop new or improve existing processes, regulatory mechanisms, supervisory activities, skills, services, information and control products and procedures for better quality and more effective performance of government authorities. In order to do so, for public bodies contracts universities and companies to conduct research according to the government needs.

5.7.4 Conclusions: Ambitions and expectations, gaps, and opportunities for learning

This needs and gaps assessment report has clearly shown that parts of the Estonian S4P system are very sophisticated, but at the same time, that the knowledge and skills needed to promote EIPM are unequally spread throughout the government sector. Therefore, there is no need to create new organisations or agencies for EIPM. At this stage, it is also not wise to focus too much on individual improvement but advisable to aim to make change at the systemic level by having a more centralizing approach that equalizes the ability for EIPM throughout the system. This should be based on new legislations and regulations that makes the science adviser position across the ministries more equal, requires ministries to create strategic research and development plans and implement internal processes for identification of their knowledge needs, and include Strategic Foresight practices and innovative policymaking in their regular activities. This approach is also to help fill horizontal gaps, avoid doubling and use the limited resources more strategically and efficiently. Furthermore, line ministries in cooperation with the BOs need to strengthen the relations with academic community. Estonian researchers do not fully understand their importance in the S4P ecosystem and universities do not yet sufficiently recognize it as part of the job description of their employees.

The overarching recommendations of this report are the following:

- To ensure **clarity of advisory bodies and a political mandate to the role of science adviser** with (potentially) even the upgrade to chief science adviser and **strengthen the role of a coordination body of the network** at the Government Office and/or the Estonian Research Council.
- Establish the use of **Strategic Foresight methodology as a requirement** in public sector when preparing strategic plans for ministries.
- Provide **better institutional support and incentives for the scientific community** to play a role in the S4P ecosystem, with widened research assessment frameworks for researchers and research performing

organisations, establishment of policy impact units at universities and research centres, training programmes in S4P for scientists, and piloting opportunities for inter-sectoral mobility from academia to public administration, among others.

- Direct more attention to the support services of the EIPM at each government department to better understand **knowledge needs and funding streams** options better.
- **Increase the awareness** of the use and possibilities of innovative and experimental methods.

Additionally, the report has highlighted a total of 46 concrete steps or recommendations that help to achieve the overarching goals. By looking at these, the need for systematic and speciality-based training for many specialists throughout the government (for science advisers, legal units, DSGs, etc.) and for the scientific community becomes clear. Each training regime needs to be specifically tailored to the target group as they have a very specific role to play in the S4P ecosystem. These trainings are also helping to create awareness of the necessity for EIPM in the day-to-day practice on all levels of public service. At the same time, we need to remind universities of their responsibility in the S4P ecosystem. They need to be supported in developing strategic plans with clear incentives for policy advice and work on applied research directly beneficial for Estonian society.

Going forward, these are the recommendations but it has become visible in the interactions with the public servants that many processes towards more EIPM have already been started. Public servants have stated that the existence of this project and the conversations around it have already created impulses for change and motivated people to change their thinking about EIPM in general. This may well be the precipice of a true culture change.

6 Roadmap towards building capacity for evidence-informed policymaking in Estonia: Policy recommendations and a plan for implementation

6.1 From assessments to policy recommendations and implementation: a brief recap of the journey

On the basis a 'diagnostic report' and a 'needs and gaps assessment', the Estonian expert team of the JRC & OECD project "Building capacity for evidence-informed policymaking (EIPM) in governance and public administration in a post-pandemic Europe" has drawn up this Roadmap to improve EIPM, containing actions to (further) stimulate better knowledge use in policymaking in Estonia.

The diagnostic report and the needs and gaps assessment contain an extensive overview of the strengths and weaknesses of the Estonian EIPM ecosystem which were based on a substantive number of interviews, focus groups and a survey among stakeholders from policy and management circles and knowledge-producing and intermediary organisations. Based on these two reports, the Estonian experts with the team of the JRC/OECD drew up a first draft version of the roadmap which was discussed and further developed in interactive workshop in June 2024. During autumn 2024, the draft roadmap report was discussed with the beneficiary organizations of the project: Government Office, Ministry of Research and Education and Estonian Research Council who provided feedback and expressed their wish to include international practices on certain topics to the report.

The roadmap is divided into sub-sections that cover several concrete recommendations on how to improve a key aspect of the S4P ecosystem. Each sub-section follows the same structure. They start with an overview table that lists each recommendation and highlights the (mainly) responsible actors for its implementation. The table is followed by an in-depth description of each recommendation, starting with a summary of the problem and the goal of the suggested changes. The recommended changes are then expanded into a list of concrete implementation actions, often divided into several phases. Finally, estimations of expected cost and time frame are added, and backup scenarios and links to international best practices if suitable.

6.2 Recommendations

6.2.1 Executive summary

The project *"Building capacity for evidence informed policymaking (EIPM) in governance and public administration in post-pandemic Europe"* supported seven European Union (EU) member states (Estonia, Belgium, the Czech Republic, Greece, Lithuania, Latvia and the Netherlands) in building capacity to improve the effectiveness of their public administrations, through greater capacity for supply and uptake of scientific knowledge, evaluation, and evidence in policymaking. In Estonia, the project's main beneficiary organizations (BOs) were the Government Office, the Ministry of Research and Education and the Estonian Research Council. The expected long-term impact of this project is the reinforced institutional integration of the use of evidence, science and evaluation for policymaking.

This roadmap presents the results of the **joint work of approximately 100 people from Estonia's public sector** who participated in a survey, numerous interviews, focus groups and workshop during 2022–2024. It contains both recommendations that can be considered as low-hanging fruits and those that are more long-term²⁵. None of the recommendations are legally binding, i.e., in the sense that country-level recommendations in the European Semester are. Rather, they reflect the **consensus view among the main project contributors on how to transform the Estonian S4P ecosystem in the long run**. The **four most important messages resulting from this work** are described below.

1. The introduction of ministerial science advisors was a big step forward for EIPM in Estonia. Now, new efforts need to be put into ensuring that its benefits are felt across all ministries. Above all, this requires clear, centralized steering of EIPM processes and practices.

In many ways, Estonia has made great progress in improving its practice of EIPM in recent years. The introduction of ministerial science advisors in 2014 was a particularly important milestone in the process, and it was used as a good practice example throughout the TSI project. A key finding of this project, however, is that the intended benefits of science advisors did not materialize equally across all ministries. To make sure that all ministries advance in their EIPM practice, new efforts need to be put into the integration of science advisors into the policymaking process and creating an enabling environment for EIPM in the Estonian public administration – most importantly through clear, centralized steering of EIPM processes and practices. Given the organization of Estonia's public sector, it would be best if the government office assumed this steering role. Alternative solutions are possible, and an improvement compared to the status quo, but they have more disadvantages.

2. Many of Estonia's long-term and strategic goals cut across multiple sectors and policy areas. To support the necessary cross-ministerial action, Estonia needs to improve its capacity to identify whole-of-government knowledge needs.

Many of the strategic objectives in Estonia's 2035 strategy require joint efforts by multiple ministries. The coordination of scientific input to policymaking is still often bound by ministerial siloes. Therefore, a key recommendation of this project is to strengthen the identification of whole-of-government knowledge needs and the creation of a successor to RITA+ in 2029 to steer the production of cross-disciplinary, policy-relevant research. Just like spreading the benefits of EIPM across ministries, this requires reforming TAI KK into a strong cross-ministerial guardian and champion of EIPM.

3. There is a clear need to reinforce a common problem understanding and commitment to act among all actors in the Estonian S4P ecosystem. A strong EIPM practice in Estonia can only be achieved if all actors in the ecosystem work together.

Key actors have demonstrated a high degree of enthusiasm towards this project and understand the need for wider usage of evidence in making policy decisions. At the expert and mid-management levels, there is a common understanding that further success is only possible if all the partners involved - policymakers, knowledge providers and intermediators - are willing to work together both within and across their organizations. To give

²⁵ See the list of abbreviations and definition above for the meaning of "short-", "mid-" and "long-term" in the context of the report.

an illustrative example, recommendations, such as the one on harmonizing the job profile and code of conduct of science advisors (recommendation 6.2.3.1) or the one on creating ministerial scientific advisory bodies which assign science advisors an important facilitating role (recommendation 6.2.3.4), deepen the integration of science advisors in the policymaking process. At the same time, the recommendations related to strengthening the evidence-literacy of policymakers (recommendations in 6.2.4) and the recommendations to update the role of the TAI KK into the cross-ministerial guardian of EIPM together with recommendations to elevate the EIPM as a strategic issue in cabinet of the Government of Estonia meetings (recommendation 6.2.2.5) reinforce the EIPM culture in the Estonian civil service and create demand for science advice. While the former set of recommendations strengthens the capacity of science advisors to offer relevant inputs to the policy process, the latter increases receptiveness and demand for evidence across ministries.

Ultimately, however, further strengthening the Estonian S4P ecosystem requires clear leadership from executive politicians and top-level civil servants. Despite its technocratic appearance, improving EIPM is not (only) a matter for technical level and managerial staff – it is a political choice for transparent and trustworthy policymaking. This is also reflected in the latest OECD survey on trust in public institutions which found that evidence-informed policymaking appears as the second most powerful driver of trust in national government, ranging just behind the government’s ability to balance intergenerational interests.²⁶

4. The project already had an impact on EIPM in Estonia. Although all recommendations have been written to remain relevant in the years to come, it’s important to keep this momentum going now because – not despite – of the current phase of austerity.

The project has already impacted improving EIPM in Estonia since its beginning two years ago. On several occasions, the beneficiary organizations have already taken actions inspired by the project, as described in reports. For example, GO has organized several trainings on foresight practices provided by OECD experts, ETAG has planned training for researchers on how to engage with policy advice, and in the draft of the new RDI law, the coordinative role of GO in aligning the R&D activities of ministries with the long-term strategic goals of Estonia was brought in. The project has also attracted national media’s attention, covering the project on several occasions.

While not all proposed recommendations need to be implemented immediately, as they are written in a way that makes them also relevant in the years to come, the beneficiary organizations must keep the roadmap in the focus of the Estonian government at a time when public funds are under pressure and – simultaneously – the government faces multiple, interconnected crisis such as increasing threats to national security through foreign governments or climate disasters, or slow economic growth. This not only set Estonia on a path to reap the long-term benefits of EIPM earlier but also directly supports it in addressing the crises it faces right now by supporting the development of cost-effective policies and improving strategic decision-making.

Further strengthening the S4P system in Estonia also requires engagement and dedicated actions of the supply-side institutions and researchers. While many successful examples of supply-side efforts to enhance science policy exist today, they have been developed sporadically and are scattered among the universities. This underlines the need for close coordination and cultivating a common vision between all stakeholders involved in implementing the roadmap.

Special attention was paid to the recommendations' resource-intensity, phasing in and providing alternative implementation scenarios when preparing this roadmap to facilitate swift yet flexible implementation.

The following table presents an overview of the actions that key actors can take to enhance EIPM, outlining the 20 recommendations presented in the roadmap. It is important to note that the 20 recommendations, although generally accepted and adopted by the coordination group of beneficiaries of this project, will need to be elaborated further by the main institutions responsible. **Many of the actions are interlinked and implementing**

²⁶

OECD (2024), OECD Survey on Drivers of Trust in Public Institutions – 2024 Results: Building Trust in a Complex Policy Environment, OECD Publishing, Paris, <https://doi.org/10.1787/9a20554b-en>.

them requires so it is important that all actors continue to engage with each other closely throughout the implementation.

Priority areas	Recommendations	Responsibility
		<i>Lead actors</i> <i>Involved actors</i>
1. Strengthen whole-of-government evidence-informed policymaking	1.1 Reform TAI KK into a cross-ministerial science advice coordination body	GO, HTM, line ministries
	1.2 Establish common areas of research interest to support the goals of Estonia 2035	HTM, Line ministries, GO, ETAG, TAI KK
	1.3 Establish a strategic cross-ministerial research funding program	HTM, GO, ETAG
	1.4 Establish a centralized database that includes government funded research and analyses	HTM, ETAG
	1.5 Bring EIPM as a strategically important issue to the agenda of Cabinet meetings of the government of Estonia	HTM, GO, TAI KK, ETAG, SA network
2. Strengthen the role and status of science advisers in policymaking	2.1 Develop a job profile and code of conduct for science advisers and raise their position in the ministerial hierarchy	TAI KK, HTM, ETAG, GO, line ministries, SA network
	2.2 Encourage regular interaction between science advisers and strategy advisers	GO, Line ministries
	2.3 Strengthen the science adviser network and raise expertise of science advisers	ETAG, SA network
	2.4 Create scientific advisory bodies in line ministries	Line ministries, TAI KK, SA network
3. Increase capacity of line ministries to absorb evidence-informed advice	3.1 Include academic qualifications into the job requirements for top and mid-level managers in ministries and for those working on policy analysis and evaluation	Line ministries, GO, Ministry of Finance
	3.2 Support public servants to obtain Master's and PhD degrees	Line ministries, universities
	3.3 Strengthen capacity for evidence-informed policymaking among analysts and managers within ministries	Line ministries, GO, Ministry of Finance, ETAG
	3.4 Create better bridges between ministries and knowledge suppliers	Line ministries, HTM, universities, ETAG
	3.5 Ensure access of public servants to academic databases	HTM, line ministries

	3.6 Improve data sharing practices and infrastructure between ministries	MKM, Statistics Estonia , line ministries, GO
	3.7 Build foresight capacity among analysts, senior leadership, and the government system	GO, Foresight Centre , Line ministries
	3.8 Revise procurement practices for R&D	HTM, ETAG, Riigi Tugiteenuste Keskus , MKM/EIS, line ministries
4. Increase the capacity and incentives of the scientific community to provide policy-relevant research	4.1 Encourage working contacts between knowledge suppliers, ministries and ETAG	Universities , Rectors Conference line ministries, SA network, ETAG
	4.2 Reward policy advice at universities	Universities , Rectors Conference, HTM
	4.3 Educate researchers and university managers on policy advice	Universities, ETAG

6.2.2 Strengthen whole-of-government evidence-informed policymaking

Recommendations	Responsibility
	<i>Lead actors</i> <i>Involved actors</i>
6.2.2.1 Reform TAI KK into a cross-ministerial science advice coordination body	GO, HTM , line ministries
6.2.2.2 Establish common areas of research interest to support the goals of Estonia 2035	HTM, GO , Line ministries, ETAG, TAI KK
6.2.2.3 Establish a strategic cross-ministerial research funding program	HTM, GO, ETAG
6.2.2.4 Establish a centralized database that includes government funded research and analyses	HTM, ETAG
6.2.2.5 Bring evidence-informed policymaking as a strategically important issue to the agenda of Cabinet meetings of the government of Estonia	HTM, GO , TAI KK, ETAG, SA network

6.2.2.1 Reform TAI koordineerimiskogu into a cross-ministerial science advice coordination body

Description

At present, the complex ecosystem of evidence-informed policymaking in Estonia lacks clear institutional coordination. This obscures the distribution of responsibilities, hinders the effective use of resources and weakens the position of EIPM at the top government level. The capacities for evidence-informed policymaking and strategy planning are unevenly distributed across the government (see final country report section 5.7.2). The needs and gaps assessment report states that a more “centralized approach that equalizes the ability for EIPM throughout the system” is required “that requires ministries to create strategic research and development plans and implement internal processes for identification of their knowledge needs” (see final country report section 5.7.4). This should help to “fill horizontal gaps, avoid doubling and use the limited resources more

strategically and efficiently” (see final country report section 5.7.4) and therefore directly corresponds to the current political climate of austerity in Estonia. A powerful way to address this, is evolving the mandate of the TAI koordinatsioonikogu (further TAI KK) from coordinating RDI policy to also include coordinating EIPM and research activities across the government.

There are two possibilities for locating TAI KK. Due to the cross-government nature of its tasks, the preferable option is to move it from HTM to the GO. If this is deemed unfeasible for political or financial reasons for now, the second-best alternative would be to reorganize the TAI KK under the HTM by complementing the tasks it has today. Since HTM lacks access to a strategic view of the whole government and may lead to a bias towards RDI policy, this option is weaker than the first one. Deciding on whether GO or HTM takes the lead in EIPM coordination on the national level needs further discussions. It is a political choice and could be made on the level of Cabinet of Ministers. In either case, close cooperation between GO and HTM is needed for the effective strengthening the whole-of-government approach in evidence-informed policymaking.

To strengthen the coordination capacity of TAI KK, this body should be composed of high-level officials responsible for strategic decision-making (preferably DSG-s or heads of strategy offices). It is advisable to promote close ties of this body with the science advisers (and strategy advisers, if deemed appropriate). The form of this cooperation is a matter of further discussion. Further, to achieve a clear distinction from the present comitology, this body should be renamed, e.g. to Teadmistepõhise poliitikakujundamise kogu (Evidence-informed policymaking advisory body). Its tasks should include:

- Identifying cross-ministerial knowledge needs and, subsequently advise on creating cross-ministerial R&D plans.
- Developing government-wide EIPM policies and guidelines, e.g., on the role of science advisors, capacity building measures, the formulation of governmental R&D plans, etc. This also includes discussing and exchanging of good practices between ministries.

Implementation actions

It is suggested to start with an investigation into the regulatory requirements necessary to move TAI KK from HTM to GO or (if the TAI KK will be reorganized under HTM the requirements giving HTM the mandate to coordinate cross-government EIPM matters). Further, for this recommendation to fully function, development of EIPM-related capacity of the Government Office/HTM to coordinate cross-ministerial science for policy activities is needed. The following actions depend on which option is chosen regarding the leading institution on EIPM. The description of actions suits the first and preferable option. If the second option is chosen, the actions should be adapted correspondingly.

Phase 1

- It is advisable for the Government to decide which institution - GO or HTM - will take the leading role in cross-government EIPM coordination.
- Work out the common understanding and procedures needed for the transfer of TAI KK in cooperation between GO and HTM (in case the first option is chosen). To achieve more ownership, it is recommended that line ministries are involved in these discussions.
- Draft guiding documents (rules and procedures) for the renewed TAI KK.

Phase 2

- Redistribute tasks of current GO staff so that (at least) 0.5 FTE is available for managing the reformed TAI KK so that its most important functions can be fulfilled, i.e., developing government wide EIPM policies and guidelines.
- Transfer TAI KK to GO.

Phase 3

- Strengthen the capacity of GO to manage the reformed TAI KK to 1 FTE and expand its scope to all functions described in the recommendation above.

Implementation timeframe: short to medium term.

The first phase of actions can be implemented in one year. Implementation of the second phase could be done in a similar timeframe.

Resource intensity: low both in additional human and financial resources.

The costs could be kept low by reallocating tasks among the current staff.

6.2.2.2 Establish common areas of research interest to support Estonia 2035

Description

Ministries regularly have similar knowledge needs and would benefit from a coordinated approach to funding research. As decided by the Estonian government in April 2024, all ministries must submit a 4-year RDI plan, whose principles are developed by HTM, as part of their 4-year budget strategy that is revised annually (the first plan is due in 2025). In addition to these RDI plans, ministries might consider also investing in identifying common areas of research interests. This could ensure that cross-ministerial policy challenges that require the joint action of several ministries are not overlooked (also given Estonia 2035), the GO, HTM and the reformed TAI KK (see final country report section 6.2.2.1) are expected to contribute this perspective to the process.

Implementation actions

Phase 1

- Line ministries are encouraged to identify synergies in their knowledge needs or RDI plans with other ministries (the Ministry of Finance, with its existing experience, is well-placed to share its practice). Science advisers, in collaboration with strategic advisers, should review these lists and propose common research areas. GO, together with ETAG, is advised to review the cross-sectorial research needs in light of Estonia 2035.

Phase 2

- The recommended common research areas are then passed on to TAI KK, where they are discussed, and a cross-ministerial government plan for research is prepared. It can be considered that it matches the four-year period that the ministerial RDI plans cover starting in 2025.

Implementation timeframe: short-term.

The whole action can be implemented for the first time within a year but needs to be repeated each year.

Resource intensity: low

Costs are related to a minimal increase in human resources during the planning stage.

Box 1: Inspiration from international good practices - formulating knowledge needs

Spain

A crucial issue regarding the formulation of knowledge needs ensuring that they respond both to urgent, short-term as well as long-term needs. Spain can be a source of inspiration in this regard.

- Flexible arrangements for the diversification of deadlines for foresight and short-term needs or the distribution of work across units within the organizational structure can enhance the balance between long-term planning and short-term needs within research funding.

Finland

- a promising approach to communication of research needs is based on phenomenon mapping as in Finland, whose content is collated and communicated in various formats, including stakeholder workshops to interpret the results and identify policy pathways.

(see annex 4.1 for more details both case studies)

6.2.2.3 Establish a strategic cross-ministerial research funding program 2029+

Description

Special dedicated research programs have been created to deal with complex cross-sectoral policy issues in several countries, which enhance active collaboration between knowledge users and providers. In Estonia, the RITA programs (RITA in 2014-2020 and RITA+ in 2022-2029), which were established and initially funded by HTM, EU Structural funds (EU SF) and co-funded by the line ministries (RITA+), have been successfully supporting a more coordinated approach to research across the government. It is important to ensure the continuation and further development of the strategic cross-ministerial research funding program after 2029 by using the experience obtained from RITA programs and international good practices on setting up cross-ministerial or mission-driven research programs, such as the Finnish Strategic Research Program (see below).

This recommendation, which emerged during the discussions of the needs and gaps assessment report with the beneficiary organizations, was met with much support at the participatory workshop in June 2024. This resounding support from stakeholders should provide reassurance about the acceptance and potential success of this recommendation. This recommendation is connected to recommendations 3.1.1, 3.1.2 and 3.2.4 since the relevant strategically important research topics are emerging from the consolidated research needs. The concerns related to the funding of this program indicate the need for further discussions to balance the different interests of the stakeholders with the common goals described in the Estonia 2035 strategy. It is evident that the funding cannot be considered as an extra burden to the HTM budget but needs to be resolved in a different way. The experience of ETAG in running the RITA programs and the ministerial research programs is a good prerequisite for establishing this program.

Implementation actions

Phase 1

- First, it is important to reach a political agreement to establish such a program. HTM and GO might want to agree on the need to develop the program.
- GO, HTM and ETAG cooperate on drafting the concept note of the program (funding requirements), describing its basic elements (goal, structure, funding needed, duration, etc.)

Phase 2

- It is advised that HTM and GO negotiate a resource allocation in the state budget.
- This is followed by HTM and ETAG drafting the guiding documentation for the new program.

Phase 3

- ETAG with its experience from running the RITA programs can implement the program

Implementation timeframe: medium to long-term.

With the RITA+ program set to conclude in 2029, it is imperative that the new program is planned well in advance. The first phase should ideally commence in 2025, with the implementation time contingent on the government's political priority.

Resource intensity: low to high.

Costs are related to funding the program of long-term research projects. Because of its high impact, this action deserves a rigorous discussion. Concerning resources, it deserves discussion whether it would be possible to fund this program, at least partly, by consolidating the research funds spread between the line ministries after achieving the "Estonian research agreement" in 2018 and the consequent increase of research funding. Today, part of this ministerial funding is used to co-financing the RITA+ strategic projects. The actual resource intensity depends on the political will and the result of the negotiations at the preparatory phase. A minimum viable option to consider is allocating the existing level of ministerial contributions to RITA+ to this fund from 2029 onwards.

Box 2: Inspiration from international good practices – cross-ministerial research funding

Finland

- in Finland, the **Strategic Research Council (SRC)** practices offer an effective approach by setting up strategic, phenomenon-driven, and program-based research, promoting active and ongoing collaboration between knowledge producers and knowledge users.

(see annex 4.1 for more details on this case study)

6.2.2.4 Establish a centralized database that includes government funded research and analyses

Description

Across the Estonian S4P ecosystem, there needs to be more knowledge management, even with the introduction of the science adviser position (see final country report section 5.3.3.2). One avenue for improvement would be a centralized knowledge database. Currently, there is no centralized database containing the results of all existing research and analyses solicited by government institutions. This repository can be in the form of a new centralized database. There is also potential for the Estonian Research Information System (ETIS), run by ETAG, currently used as an information center of research projects, to function as a repository for all government-funded research. Some ministries have developed their own repositories, and this has not simplified making data and research accessible across ministry lines. Fortunately, the government has recently tasked the line ministries to store the data and results of research commissioned by them also in ETIS. This is an opportunity to develop ETIS into a centralized database for research. This problem contains two types of issues: procedural and technical. First, besides the research reports and articles, also the original datasets, data analysis scripts etc., must be stored. To do this, it is important that existing agreements regarding storing the research/analysis results are standardized across the government and that the issue is supported by ministerial leadership. Second, this centralized database must have a user-friendly interface to access existing research/analytical information easily. This would save resources and time for both data users and providers and avoid duplication of already existing information.

Implementation actions

Phase 1

- HTM and ETAG develop a standardized agreement on what data and research materials must be entered into a centralized research database. This requires procedural as well as technical information.

- It is advised that ETAG oversees facilitating the technical development of this recommendation. The step would require the development of ETIS's (or an equivalent repository's) technical infrastructure that allows it to gather and display research results/reports of government-funded projects and not just metadata.
- It would be valuable if UX (User experience) designers were consulted to analyze ETIS's current interface and make suggestions for improvement (the lessons would also be valuable for a new central repository). The results of the UX study can then be used to build the new interface feature on the website.
- Simultaneously, it is recommended to develop a technical solution that can efficiently bulk-feed all existing research reports into the database. This solution is a key component in our strategy to ensure the database is comprehensive and up-to-date.

Phase 2

- ETAG will do training and marketing for the new ETIS feature or equivalent database.
- HTM monitors that all line ministries insert government-procured research and analyses reports that need to be uploaded to the new centralized database. Furthermore, they monitor the implementation, and if needed, ETAG offers training.

Implementation timeframe: medium term

Finding resources for the technical implementation will take the most time. Once the solutions are in place, uploading existing research reports might take time, depending on the solution provided. Afterwards, uploading reports to ETIS can be part of the project tasks.

Resource intensity: medium

Costs are related to hiring outside expertise and technical knowledge, as well as a limited increase in human resources during the planning stage and providing training for government staff. Maintaining the database might also require additional human resources if existing resources do not suffice.

6.2.2.5 Bring evidence-informed policymaking as a strategically important issue to the agenda of Cabinet meetings of the Government of Estonia

Description

Even if policymakers and politicians acknowledge the importance of evidence-informed policymaking, EIPM issues are often only addressed sporadically and unsystematically (see final country report sections 4.5 and 5.6.1). There needs to be a high-level platform to discuss these issues. It is of utmost importance that EIPM is brought to the highest policy advice level. Concerning the small size of the Estonian public sector, there is no need to create any new body for this. To address this problem, a report on the state of EIPM could be produced regularly (e.g., every two years) and presented for discussion in the Cabinet meeting of the Government. The Cabinet discusses the report presented by GO or HTM (depending on who takes the leading role in the reformed TAI KK; see 3.1.1) and co-created with TAI KK, ETAG and the SA network and makes suggestions for improving EIPM in Estonia.

Implementation actions

The whole action can be implemented in a single phase:

- To implement this action, a framework of the report and a reference document for evaluation of the state-of-the-art EIPM is to be created by GO or HTM in cooperation with TAI KK, ETAG and the science

advisers' network. Inspiration for the framework could be this roadmap and recent publications on evaluating the capacity of science for policy ecosystems published by the European Commission²⁷.

- In cooperation with TAI KK (see recommendation 3.1.1) and ETAG, GO or HTM then prepares a report every two years based on this framework on EIPM and presents it at the Cabinet meeting.
- The Cabinet discusses and evaluates the state of EIPM at its meeting, based on the report and makes suggestions for its improvement.
- After the approval by the Cabinet, the report on EIPM should be made public.

Implementation timeframe: short-term.

This action can be implemented, depending on the priorities and availability of the existing human resources in GO, approximately within a year.

Resource intensity: low

Costs are related to a minimal increase in human resources.

²⁷ David Budtz Pedersen, "An Evaluation Framework for Institutional Capacity of Science-for-Policy Ecosystems in EU Member States," ed. Kristian Krieger and Lorenzo Melchor, 2023, <https://doi.org/10.2760/951556>.

6.2.3 Strengthen the role and status of science advisers in policymaking

<u>Actions</u>	<u>Responsibility</u>
	<i>Lead actors</i> <i>Involved actors</i>
6.2.3.1 Develop a job profile and code of conduct for science advisers and raise their position in the ministerial hierarchy	TAI KK, ETAG, GO, line ministries, SA network
6.2.3.2 Encourage regular interaction between science advisers and strategy advisers	GO, Line ministries
6.2.3.4 Strengthen the science adviser network and raise expertise of science advisers	ETAG, SA network
6.2.3.5 Create scientific advisory bodies in line ministries	TAI KK, line ministries, SA network

6.2.3.1 Develop a job profile and code of conducts for science advisers and raise their position in the ministerial hierarchy

Description

A cultural shift is necessary to recognize science advisers (SAs) as a crucial institution of EIPM in Estonia as they are currently not contributing to policymaking as much as they could be due to their different position placement in ministries and, in some cases, overloading with too many non-strategic tasks (e.g., project management, procurement documents). Moreover, there are great differences between ministries regarding the status and job profile of science advisers (see final country report sections 4.5.1.1 and 5.3.2.1–5.3.2.2). This has led to a situation in which SAs are professionally underused, considering their education and experience in the scientific field and have varying degrees of impact in different ministries. The SA network is uneven in terms of the workload and the size of the fields every single person must cover; some ministries have several scientific advisers, but the Ministry of Justice has not yet officially created a position for an SA.

To harness more of the value science advisers could add to the policymaking process, it is recommended that their roles and functions be harmonized across ministries, for example, by considering to adding a SA position and area of responsibility to the ministerial statutes (Põhimäärus) in the future. While clearly a substantial step, supporting the institutionalization of the science advisor position in this way, is important in the long run to protect the position from potential arbitrary political interference in the future. Furthermore, all line ministries could establish a similar vision for the science adviser position reflected in a more or less standardized description of tasks (job profile) that can be adjusted to each ministry's needs where appropriate. This can be completed by a code of conduct with common guidelines and more practical recommendations. Science advisers can be directly subordinated to top civil servants in the ministry (secretary generals or deputy secretary generals) and attend ministerial leadership meetings where the preparation and evaluation of strategic policy choices are discussed (similarly to strategic advisers; see recommendation 3.2.2). This would enable them to be up to date with recent policy developments and align research needs to the most acute policy issues. The remuneration and non-monetary benefits could be aligned across ministries to make the SA positions more uniform and transparent.

Implementation actions

Phase 1

- The current job descriptions/real tasks of SAs need to be analyzed to increase their role in policymaking within ministries. For this, a standardized job profile/code of conduct could be created (a process led by TAI KK and ETAG with input from ministries). The subordination of SAs should be (re-)considered with

the aim of transferring their subordination of SAs to SGs or DSGs to increase the impact of SAs on policymaking and to be attractive for new highly qualified recruits to SA positions.

- Ministers, SGs and DSGs need to be briefed and convinced of the strategic necessity, need for institutionalization of SA positions, and their increased status by GO.
- Based on the new job profile of SAs, the job descriptions of SAs can be aligned across HR departments in line ministries to establish an agreement on the core tasks and which pay grade should apply. More technical tasks of the SAs could be reallocated to other ministerial staff.
- To strengthen EIPM in single ministries but also for institutionalizing the positions of SAs and maximizing the impact of the SA network, it is recommended that all ministries establish this position, including the Ministry of Justice.

Phase 2

- Science advisers are invited to attend ministerial leadership meetings where the preparation and evaluation of strategic policy choices are discussed (similarly to strategic advisers).

Phase 3

- TAI KK periodically benchmarks the implementation of the new job profile.

Implementation timeframe: medium-long

As many parties are involved, implementation requires careful planning. In addition to reaching agreements, it is also necessary to formalize and process documents according to time-consuming procedural requirements.

Resource intensity: low

The proposal can be implemented during routine work with BO-s and line ministries' own resources. Additional resources may be required to align pay grades SAs, but this can be done gradually.

Box 3: Inspiration from international good practices – role description for science advisors

United Kingdom (UK)

In the UK, the Government Office has issued a guidance document for Chief Scientific Advisors and their officials. Although the Estonian system is not a direct parallel to the UK system, this guide can be used to inform the structure and content of an Estonian document of this nature. In cases where a new official assumes the role of Scientific Adviser in line ministry, a code of conduct of this kind would be beneficial.

(see annex 4.1 for more details on this case study)

6.2.3.2 Encourage regular interaction between science advisers and strategy advisers

Description

Linking strategic planning and science advice is crucial to effective policymaking in the long run, e.g., for assessing the ministerial and cross-ministerial research needs (see recommendations 3.1.1 and 3.1.2), and, therefore, should be strengthened. It is impossible to make uniform statements about all ministries, but often, strategic advisers are primarily responsible for strategic planning, whereas science advisers are responsible for commissioning research. This research should contribute to informed policymaking (and strategic planning), but it only sometimes does. An impactful barrier to using scientific insights during strategy formulation is the limited daily interaction between science and strategic advisers. It is recommended that cooperation between these two roles be increased by strategically linking them during the strategic management processes and foresight exercises (see recommendation 3.3.7).

Implementation actions

Phase 1

- GO should start a regular platform (joint meetings, practical seminars, etc.) to facilitate network and collaboration activities between strategy advisers and scientific advisers in connection with the strategic management process in line ministries (see also recommendation 3.1.2).

Phase 2

- Strategy advisers and scientific advisers need to enhance their regular collaboration on a ministerial level (line ministries). This joint effort could lead to the identification and preparation of foresight exercises that are crucial for making strategic policy decisions. Furthermore, science advisers could bolster strategy formulation by providing an overview of related scientific knowledge and current evidence gaps, and by connecting strategic advisers to relevant researchers. This collaboration holds the promise of aligning science advice activities with policy priorities, thereby enhancing the effectiveness of strategic decisions.

Phase 3

- On most strategic state-level issues, GO could follow the progress of science advisers and strategic advisers' tandem work by evaluating the use of evidence in line ministries' strategic documents, focusing on issues such as the robustness of cited evidence and transparent use of expert judgement.

Implementation timeframe: short-term

This proposal is about increasing ministerial-level cooperation, which can be initiated quickly. However, building up deep collaboration between science and strategic advisers may take time.

Resource intensity: low

This proposal can be implemented by adjusting the usual work routines in line ministries and does not require additional resources.

6.2.3.3 Strengthen the science adviser network and raise expertise of science advisers

Description

The impact of science advisers varies between ministries (see final country report sections 4.5.1.1 and 5.3.2.1–5.3.2.2). An important way to address this imbalance is to maintain and strengthen the informal network between science advisers and invest in training programs to raise their expertise. Rather than relying on ETAG to facilitate the network, the science advisers could play an active role in cultivating their network, i.e. by electing a network chair among themselves who prepares their meeting agendas and develops the network by organizing offsite days, etc. This position could be accompanied by non-monetary bonuses, such as the right to be part of national delegations, etc. The position should be re-elected regularly, and it should not create any hierarchy (nor time-consuming extra tasks for too long) amongst science advisers.

Areas of training for science advisers could be put together using both top-down and bottom-up approaches and good international practices. During the interviews and focus groups of this project, the following areas were mentioned to raise science advisers' competence:

- strategic planning & foresight
- policymaking process and specifics of policy analysis and evaluation
- communication skills
- drafting the terms of references of research projects, procurement of research projects
- AI and data-driven policymaking

Implementation actions:Phase 1

- Science advisers should choose a chair in an election at the network meeting.

Phase 2

- The network chair and the RITA program manager (ETAG) work together to prepare short- and long-term agendas for science advisers' seminars and training (use the short list above as a potential starting point)
- ETAG should continue providing practical help and being a resource for organizing meetings and training

Implementation timeframe: short-term

Since there is already a working network, the continuation and improvement of activities do not require special efforts.

Resource intensity: low-medium

ETAG has already planned resources to maintain the network. Their adequacy can be assessed after detailed short-term and long-term training programs have been drawn up and budgeted. Since the activities take place over several years, planning additional resources can be gradual if necessary.

6.2.3.4 Create scientific advisory bodies in line ministries**Description**

All ministries should know and collaborate with key researchers in their main policy areas. To achieve this and to mitigate the consequences of the high turnover of science advisers and policy analysts, there is a need to strengthen the institutional memory of scientific knowledge providers of ministries. It is recommended that each ministry creates a network of experts in the form of scientific advisory bodies (SAB) who are willing to serve as knowledge providers that ministry staff can reach out to in the procurement process and/or on quick notice for policy advice (also in case of possible crisis situations that require science advice). Members of SABs should be informed of recent policy developments and contacted for policy advice, either individually or collectively, when necessary.

The scientific advisory bodies should be linked to DSGs responsible for certain policy areas. The selection process of the members of the SAB should be transparent and based on academic excellence. Transparency of the selection process can be ensured through open and collective selection process to avoid dominance or biased and/or personal favourites. At least one formal annual meeting of an entire SAB should be organized, but most of the work should be carried out on a needs basis, either collectively or individually. SAB members may also serve as mediators for science advice, recommending other academic experts who could be useful for the policymaking process in a particular field. SABs could also be linked to the development of ministerial and cross-ministerial knowledge needs (see recommendation 3.1.2).

Implementation actions:Phase 1

- TAI KK should create a template for terms of reference/working order for SABs to facilitate the creation of such bodies in ministries. This document should also address the decision-making level (overarching topics, strategic planning) in which SABs should be involved.

- The line ministries' top management should give a mandate to the SAs to propose membership in advisory bodies. The SA proposes a list (if necessary, consulting with universities) for the members, which the SG later approves.
- In addition to needs-based work (including both collective and individual consultations), all SAB members should meet annually to discuss and evaluate the ministry's current strategic goals and policy processes. An SA should prepare and facilitate this meeting, contribute to strategic planning, and identify ministerial knowledge needs.
- SAs should assume the role of facilitators between the SABs and top civil servants in the line ministries.

Phase 2

- Consider featuring an evaluation of the SABs in the regular state of the EIPM report submitted to Cabinet meeting (presented by GO and co-created by ETAG) (see recommendation 3.1.5)

Implementation timeframe: short-term

Implementing official advisory bodies requires creating and processing the necessary documentation in the line ministries, which can be time-consuming.

Resource intensity: low to medium

The potential remuneration of SAB members should be decided in every line ministry.

Backup scenario: If this recommendation does not find support for financial reasons, we recommend that science advisers still create and maintain lists of key scholars relevant to the ministries and proactively support policymaking colleagues in approaching researchers who could help them in their work.

6.2.4 Increase capacity of line ministries to absorb evidence-informed advice

Actions	Responsibility
	<i>Lead actors</i> <i>Involved actors</i>
6.2.4.1 Include academic qualifications into the job requirements for top and mid-level managers in ministries and for those working on policy analysis and evaluation	Line ministries, GO, Ministry of Finance
6.2.4.2 Support public servants to obtain Master's and PhD degrees	Line ministries, universities
6.2.4.3 Strengthen capacity for evidence-informed policymaking among analysts and managers within ministries	Line ministries, GO, Ministry of Finance
6.2.4.4 Create better bridges between ministries and knowledge suppliers	Line ministries, HTM, universities
6.2.4.5 Ensure access of public servants to academic databases	HTM, line ministries
6.2.4.6 Improve data sharing practices and infrastructure between ministries	MKM, Statistics Estonia, line ministries, GO
6.2.4.7 Build foresight capacity among analysts, senior leadership, and the government system	GO, Foresight Centre, line ministries
6.2.4.8 Revise procurement practices for R&D	HTM, ETAG, Riigi Tugiteenuste Keskus, MKM/EIS, line ministries

6.2.4.1 *Include academic qualifications into the job requirements for top and mid-level managers in ministries and for those working on policy analysis and evaluation*

Description

Top and mid-level public service managers are expected to understand the value and limits of scientific methods and be better equipped to contact the evidence providers to ask them relevant questions and evaluate their advice. The Diagnostic Report (section final country report section 4.3.5.1) revealed that, in general, government organizations do not systematically support the evidence- and data-based work of their employees, and the relevant skills of policy analysts are often insufficient. A master's degree or equivalent should be required for top and mid-level public service managers; a PhD can be recommended for advertising vacancies. When public service managers possess academic degrees, they are more likely to appreciate evidence-based policymaking and give preference to the public servants with academic degrees in the process of recruitment and promotion. Especially those public servants working in the fields of policy analysis and evaluation would benefit from having at least a Master's degree.

Implementation actions

Phase 1

- In advertising vacancies for top and mid-level public service managers and policy analysts, it should always be mentioned that candidates with a master's degree are preferred (or ideally that a master's degree is required). GO oversees the recruitment of top civil servants, whereas each ministry will handle

the requirements for mid-level managers. The Ministry of Finance should promote academic degrees throughout the public service.

- For top public servants, PhD degrees could also be recommended (GO responsibility). This would indicate the general trend and ambition in the public service to appreciate academic qualifications and evidence-based policymaking.

Phase 2

- Possession of a master's degree (or equivalent) should be made mandatory for all newly hired top public servants. For this, GO should take the lead in changing "Avaliku teenistuse tippjuhtidele esitatavad nõuded, nende värbamise ja valiku ning arendamise ja hindamise kord" respectively.

Phase 3

- Ministries are encouraged to introduce a bonus remuneration structure for individuals with relevant academic degrees (top and mid-level officials and policy analysts).

Implementation timeframe: short-term for Phase 1, medium-term for Phases 2-3

Phase 1 could be carried out immediately. For Phase 2, general agreement among stakeholders is necessary, and Phase 3 will require changes in the ministerial salary policies.

Resource intensity: low for Phases 1-2, moderate for Phase 3

No extra resources are needed for Phases 1-2; Phase 3 could be carried out if a general salary increase is on the agenda.

Backup scenario: Considering the limited pool of academically qualified people in Estonia and the lack of a tradition of requiring academic degrees in public service, Phases 2 and/or 3 could be implemented in the long term.

6.2.4.2 Support public servants to obtain Master's and PhD degrees

Description

The diagnostic Report (see final country report section 4.3.5.2) concludes that public servants are willing to get involved in more training to foster their analytical competencies, promote data literacy and strengthen their policy analysis skills. Government institutions should encourage their existing public servants to obtain job-related academic degrees. This would increase the public servants' qualifications and educate them on analytical methods, finding and evaluating the reliability of scientific evidence, critical thinking, and relationship-building with researchers.

Implementation actions

Phase 1

- Public sector managers should be more active in facilitating the Master's and Doctoral study process of public servants, for instance, through the co-supervision of theses, providing access to study-related data, and providing policy-related topics for theses.

Phase 2

- Government institutions should make proactive use of "knowledge transfer PhD" opportunities (*teadmussiirdedoktorant, ettevõtlusdoktorant, tööstusdoktorant*), where public servants continue working full-time for the government but at the same time get involved in work-related PhD studies supervised by experienced researchers and possibly co-supervised by academically qualified practitioners.

Phase 3

- Reward officials who defend their Master's and Doctoral degrees during public service through monetary or non-monetary means.

Implementation timeframe: short-term

Implementing this recommendation requires no extra time; it has more to do with a shift in mentality in government institutions.

Resource intensity: low for Phases 1-2, low to moderate for Phase 3

No extra resources are needed for Phases 1-2; resources for Phase 3 range from zero (non-monetary rewards) to moderate (financial awards).

Backup scenario: If the recommendation (to its maximum extent, i.e. up to phase 3) is considered unfeasible for financial reasons, a smaller alternative could be for public servants to participate in relevant micro-degree programs and, subsequently, transfer them into Master's studies.

6.2.4.3 Strengthen capacity for evidence-informed policymaking among analysts and managers within ministries

Description

As the Diagnostic Report (see final country report section 4.3.5) reveals, competence in the creation and use of scientific evidence within Estonian government institutions is insufficient and unevenly spread, data literacy is low, and state authorities struggle with developing terms of reference for scientific advice as well as evaluating results of contracted scientific advice. Thus, evidence-informed policymaking depends not only on policymakers' attitudes but also on their capacity to use evidence for policymaking purposes. Policymakers and analysts should be aware of the variety of sources for policy-relevant evidence, the importance of context in policy transfer, and be able to distinguish between reliable and unreliable evidence. They should also know how to use evidence in various stages of the policy process (agenda setting, policy formulation, policy adoption, policy implementation, and policy evaluation). Public servants should be able to a) use reliable evidence themselves and b) act as a "smart buyer" of scientific analyses. Public servants should also be able to differentiate between evidence-informed (=science-informed) and data-based decision-making. On many occasions, simple data-driven policymaking is insufficient for developing effective policies. Therefore, a data-driven culture should be nudged towards an evidence-informed culture. Finally, public servants should know both the opportunities and limitations that AI provides for evidence-informed policymaking.

Implementation actions

Phase 1

- Educate public service managers and policy analysts on the process and methods of evidence-informed policymaking. For top managers, GO should take the lead, whereas, for the other civil servants, the Ministry of Finance and line ministries should include evidence-informed policymaking in their development programs. Based on its experience of developing trainings during the RITA program ETAG, could support this.
- For managers, training courses should focus on the value of evidence-informed policymaking, different types of evidence, uncertainty levels in decision-making and practical ways in which they can support it in their ministry. For analysts, the development program should focus on specific knowledge and skills

needed to conduct evidence-informed analyses for policymaking as well as how to solicit and evaluate scientific evidence.

Phase 2

- GO and Ministry of Finance could take a lead with discussing with the universities about the creation and/or further finetuning of micro-degrees on policy analysis for evidence-informed policymaking targeted at practising public servants and students. The government could spread the word among public servants about the presence of respective micro-degrees and also consider procuring such a micro-degree.
- A specific training course for public servants should be developed, focusing on both the opportunities and limits of AI in evidence-informed policymaking. This should be done in cooperation between the Ministry of Finance and the Ministry of Economic Affairs and Communications.

Phase 3

- Knowledge and skills in evidence-informed policymaking could be integrated into the competency models of both top- and mid-level public managers. These competency models could be used as a basis for recruitment, promotion, and development decisions. This is the responsibility of each single ministry.

Implementation timeframe: mid-term

The preparation of relevant training courses and micro-degrees will take about two years. Some appropriate training courses and micro-degree programs are already available and could be used in the short term.

Resource intensity: moderate

The cost of the preparation of training courses and relevant materials requires extra funding. However, training courses do not have to be very long, even half-day or full-day programs would be helpful. Public organizations may also consider using existing programs and courses more actively and prioritize relevant courses in their development programs.

Backup scenario: In case of a shortage of resources for large-scale training courses, each ministry should be able to develop relevant competencies of a few policy analysts who could serve as in-house trainers and/or advisers of evidence-based policymaking within a ministry. This could be a scientific adviser's job or any other capable analyst.

6.2.4.4 Create better bridges between ministries and knowledge suppliers

Description

The diagnostic Report (see final country report section 4.5) states that the general collaboration between government organizations and universities needs to be improved, and there is room from both the supply and demand side for building better collaboration and synergies across sectors. Effective evidence-informed policy advice is possible if policymakers and knowledge producers (universities, other research institutions and think tanks) know each other, speak the same "language", work closely together, follow the same ethical standards and are committed to the same goal. There could be more proactivity from the ministries in creating demand for policy advice and including researchers in the policymaking process. This would help to build the ownership and commitment of researchers to providing policy advice.

Implementation actions

Phase 1

- Various more institutionalized instruments could be used to create more meaningful contacts between policymakers and knowledge producers. For example, using mobility schemes to move from academia or think tanks to the public sector and vice versa, part-time assignment of researchers in the public

sector, pairing schemes, the employment of visiting scholars in ministries, providing internships and topics for theses for graduate students, etc.

- When addressing specific (and sometimes urgent) policy problems, public servants are encouraged to use different formats of issue-based meetings between public servants and relevant researchers (e.g. ad hoc, informal, brief and short-notice policy advice, joint roundtables, informal discussions, etc.).

Phase 2

- Ministries should use their research funds to fund policy-relevant research professors through the Academy of Sciences or universities (for example, for 1-2 years). This would enable to establish or further develop research teams which carry out policy-relevant research in the fields where the existing competence is limited but which are priority areas for policymakers (a good example is the establishment of thematic research professor positions at the Academy of Sciences by the Ministry of Foreign Affairs).
- Ministries should use their research funds to support knowledge transfer PhD positions (ettevõtlusdoktorant, tööstusdoktorant) relevant to their policy areas and policymaking capacities.
- Research institutions and public sector organizations should follow the same ethical principles in conducting analyses, studies, and data management. ETAG as a responsible body for research ethics should think of how to apply general ethics standards and their handling ecosystem not only to universities but also to government institutions, think tanks and consulting firms.

Implementation timeframe: mid-term

These actions require a more institutionalized approach and thus require about two years for implementation.

Resource intensity: low for Phase 1, moderate for Phase 2

Phase 1 is low-cost for ministries, whereas Phase 2 requires more finances, which already exist elsewhere (research funds of ministries). Phase 2 is more directed at rearranging existing research funds of ministries.

Box 4: Inspiration from international good practices – mobility schemes

European Union (EU)

An example of mobility schemes at the EU level to foster policymakers' S4P skills is the [Policy Leader Fellowship \(PLF\)](#) organized by the School of Transnational Governance (STG) of the European University Institute (EUI).

United Kingdom (UK)

A relevant case in the UK, is the UK Research and Innovation's (UKRI) [Policy Internships](#) scheme, which is designed to give doctoral students the chance to contribute to the policymaking process and to understand how research evidence can inform policy decisions. Interns are placed within a host organization for three months. Another relevant scheme is the Royal Society's [Pairing Scheme](#), which each year allows scientists to collaborate with UK parliamentarians and civil servants, learning about each other's work. Participants can gain an insight into how research findings can help inform policy making, hence learning hands-on how they can get involved and how to make an impact.

United States (US)

In the US, one of the main mobility schemes at the science-policy interface is the [Science & Technology Policy Fellowships](#) (STPF) of the American Association for the Advancement of Science (AAAS), which allows scientists and engineers to learn first-hand about policymaking while contributing their knowledge and analytical skills to the policymaking.

Germany (DE)

A good example of mobility scheme at the science-policy interface is the [Mercator Science-Policy Fellowship](#), organized by the Stiftung Mercator in collaboration with research institutions and government bodies.

(see annex 4.1 for more details on these case studies)

6.2.4.5 Ensure access of public servants to academic databases

Description

Each ministry should ensure that its science advisers and policy analysts get access to major academic databases (for example, Web of Science and/or Scopus) to enable access to cutting-edge research worldwide and increase the analytical capacity of ministries. Access to scientific databases and the capacity to use them is a fundamental prerequisite for developing the capacity for evidence-informed policymaking within ministries. Access to databases will enable public servants to expand their knowledge and understanding of global challenges and alternative solutions employed in various countries. Both top and mid-level public service managers are expected to encourage policy analysts to develop and update their knowledge through the relevant literature.

Implementation actions

Phase 1

- At a minimum, all science advisers should have access to academic databases, and they should promote and facilitate the use of databases by other public servants. This is the responsibility of each line ministry. HTM should find out if the ELNET (Estonian Libraries Network), National Library or university libraries could offer free off-site access to science advisers based on a special agreement.
- Science advisers should consult and, if necessary, train the other public servants on using academic databases.

Phase 2

- Public servants (especially policy analysts) could be encouraged to arrange access to scientific databases through library memberships or university licenses. This is the responsibility of each line ministry.
- Ministries could invest in AI-supported literature reviews connected to key policy areas to systematically and continuously review input from major academic sources.

Phase 3

- HTM is expected to find out the cost and possibility of a centralized license enabling access to major academic databases such as Web of Science and Scopus (either for science advisers, for science advisers and a limited number of policy analysts, or all public servants) and decide upon its rationality on that basis.

Implementation timeframe: short-term

Access to academic databases can be arranged within one year.

Resource intensity: Low to moderate for Phases 1-2, moderate to high for Phase 3

Most costs for phases 1 and 2 only concern a limited number of people or are kept low by only considering publicly available resources or special arrangements with libraries. Investing in AI-supported living reviews, however, would entail spending new resources. The number of resources will depend upon the scope of ambition. Phase 3 will likely require moderate- to high-level funding and can be omitted if the related cost is unreasonably high.

Backup scenario: If the recommendation (to its maximum extent, i.e., up to phase 3) is considered unfeasible due to financial reasons, each ministry could consider ensuring access to specific high-level academic journals directly related to its work.

6.2.4.6 Improve data sharing practices and infrastructure between ministries

Description

Accessibility and quality of data play a large role in evidence-informed policymaking. At this point, there are large hurdles in the form of data literacy and data availability, as well as structural constraints (infrastructure, political will to share the data). There is also a clear gap between ministries in understanding what data are available and what data are needed for decision-making (see final country report section 5.7.2.2). Neither public service managers nor policy analysts have a systematic overview of existing data sources and different types of data. The knowledge of data quality and availability is unequally distributed across the government. There should be a clear distinction between situations where data exchange is systematic and permanent, and those where ad hoc data analysis is required. In cases where data exchange is permanent, the need for data exchange is typically accepted on a regulatory basis, with no significant issues arising. However, ad hoc data exchange, often needed for policy analysis, is much more complicated. In such cases, issues related to data protection, technical capabilities, data quality (including metadata and data descriptions), and other factors arise. Data management is a fundamental prerequisite for improving data-based decision-making (including automation, AI, and algorithms). Therefore, line ministries have a dual role here. On the one hand, they need to acknowledge the importance of data management in the context of their organization: to ensure the maintenance and reliability of their own data, make their data user-friendly, and also guide users of data. On the other hand, they also need to understand the data management ecosystem in a wider sense - who plays what role in the Estonian government system and how the specific ministry data fits in a broader data ecosystem. The roles in the broader ecosystem (especially in the case of ad hoc data exchange or the use of data which is not part of the national database system) have not been agreed upon so far, but this needs to be addressed for the improvement of the use of data for evidence-informed policymaking.

Implementation actions:

Phase 1

- The Ministry of Justice, in collaboration with Statistics Estonia, should continue the development of comprehensive data standards and data management plans to facilitate data collection, use, and sharing

between ministries and academic institutions to foster evidence-based policymaking. The roles and responsibilities in the broader data management ecosystem must be analyzed and agreed upon (including those related to ad hoc data exchange and the use of data not part of the national database system). The renewal process of Digiühiskonna Arengukava should address these issues, led by the Ministry of Justice.

- Improvement of data management practices requires the presence of highly skilled data stewards and the strengthening of existing expert data teams in line ministries (including both data stewards and policy analysts). These teams must not only possess strong technical skills in working with diverse types of data and data solutions but also critical reflection capabilities. This allows them to assess the ethical aspects, and the social opportunities, consequences, and risks associated with data collection, usage, and sharing.
- It is recommended to reinstate semi-regular inter-ministerial meetings for analysts involved in policy analysis and evaluation (so-called analysts' roundtable) to introduce best practices and develop common guidelines, methods, and approaches for day-to-day analytical work and data management.

Phase 2

- The Ministry of Justice, in collaboration with Statistics Estonia, should develop secure and fair solutions for collecting, using, and sharing data, including also non-aggregated, individualized (as best as possible anonymized and confidential) data. This includes data sharing between private, public, and academic institutions, enabling testing, critical evaluation, and safe and fair adoption of the latest data solutions (e.g., mobile phone data).

Phase 3

- Line ministries should develop further their open data strategies to make data accessible to the public in a user-friendly way with improved data visualization. This will help accelerate the decision-making process, reduce unnecessary costs and strengthen cooperation between universities, citizens and governmental institutions in creating the best solutions. These aggregated and accessible data solutions include capabilities for both historical and real-time overviews, as well as interactive elements that allow users to extract data and gain insights into key trends.

Implementation timeframe: mid-term

These actions require institutional agreements and decisions, which may take two to three years.

Resource intensity: moderate to high

Improvement of both data management and data literacy in the public service requires substantial resources and prioritization of public sector leaders.

6.2.4.7 Build foresight capacity among analysts, senior leadership and in the government system.

Description

Foresight is an important tool in evidence-informed policymaking. Still, at this point, there is a lot of unclarity across the government regarding what this term entails (see final country report section 5.5.2) and limited capabilities to apply the connected methodologies across the public sector. The key to a change is threefold: (1) capacity building; (2) integration of strategic foresight into everyday policymaking practices; and (3) demonstration and sharing of good practices.

First, training for policymakers in strategic foresight should be established, for example, by the Foresight Centre at the Parliament or the GO. Second, GO should support the development of basic foresight expertise across ministries and agencies and support the establishment of more systemic foresight processes in connection with Estonia 2035 strategic planning processes and/or the national risk assessment procedures. Third, GO should undertake the lead in producing or collecting strategic foresight on across-government topics linked to key

strategic areas of Estonia 2035 and connecting with experts across ministries and agencies (thus demonstrating the positive impacts of strategic foresight and seeding the establishment of an expert community of practice on the topic).

In national priority areas, for example, in RDI policy and R&D plans of ministries, strategic foresight should be utilized much more by the planning and/or strategy units. Furthermore, knowledge of foresight should be integrated into the job descriptions, competency models and development programs of both analysts as well as top- and mid-level public managers.

Implementation actions

Phase 1

- GO, with the support of Foresight Centre should lead the development of a strategic foresight training program. For top managers, the development program should focus on understanding the value of strategic foresight for decision-making under uncertainty and creating a supporting organizational culture for using strategic foresight methods. For policy analysts and strategy advisors, the respective program should concentrate on strategic foresight methodologies in strategic planning and policy development.
- GO, with the support of Foresight Centre, should develop guidelines on how foresight should be included in impact analyses and strategic planning processes by line ministries. These should help line ministries implement foresight in creating development plans, e.g., using wind tunnelling and stress-testing scenarios for future-proof ideas. Foresight should focus not only on risks but also on opportunities.

Phase 2

- The mandate and responsibility to coordinate strategic foresight should be created in GO and linked to the national risk assessment and the strategic planning related to the Estonia 2035 processes.
- GO is expected to coordinate the creation of a cross-government early signal detection mechanism (for example, via horizon scanning or drivers of change process) linked to Estonia 2035 strategic areas, and the resulting signal banks should be made accessible to all government officials.
- GO could also monitor the use of good quality strategic foresight in strategy documents (e.g., during strategy reviews) linked to Estonia 2035 in line with the guidelines developed in phase 1.
- GO should coordinate the institutionalizing of public sector foresight for a stronger foresight ecosystem and knowledge exchange, including, for example, routine co-creative futures workshops to understand the meaning of scenarios for public policy alternatives (GO, ministries), creating formal and/or informal public sector foresight networks for increased collaboration and joint foresight projects.

Phase 3

- Encourage universities to create a micro-degree program and/or full degree program in strategic foresight and proactively promote such opportunities among public servants (GO, Foresight Centre).
- GO should demonstrate the usefulness of strategic foresight by leading across government strategic foresight exercises linked to Estonia 2035 (scenarios, stress-tests, etc.).

Implementation timeframe: mid-term

Resource intensity: moderate to high

Backup scenario: If this recommendation is considered unfeasible due to political or financial reasons, an alternative would be to create a network of strategic foresight producers external to the government that can

be commissioned for related work on an ad hoc basis. This scenario does not, however, ensure that strategic foresight is applied systematically in policymaking processes.

6.2.4.8 Revise procurement practices for R&D.

Description

The diagnostic Report (see final country report section 4.3.3) reveals that the existing procurement laws, skills in utilizing them, and several structural constraints (timeframe, funding, mismatched expectations) hinder knowledge transfer between universities and government institutions. Regular public tender proceedings are often unsuitable to meet the needs of both knowledge demand and supply side. Including R&D components in standard tender proceedings is very difficult because R&D quality can only be evaluated by the peer review method. R&D-related specific conditions in procurement have received little attention by policymakers so far. Although current Estonian procurement law has an R&D exception clause, it is not used by every line ministry (see final country report section 4.3.3.3). Moreover, when used, it results in a high bureaucratic burden for both ministries and researchers. Estonian R&D legislation also allows line ministries to solicit R&D advice from grant competitions. Grant competitions are conducted in collaboration with ETAG, as the government decision suggests. The involvement of ETAG also guarantees that transparent and high-quality evaluations of the applications are carried out. Line ministries have already issued several targeted grants in collaboration with ETAG via ETIS, but the first practices have been considered rather time-consuming and bureaucratic for ministries. The problem may also be that ETAG does not provide legal expertise but has to outsource it if necessary. Another key issue is the role of the various parties (line ministries, RTK) involved in preparing R&D procurements. Legal officials need more expertise on the specific conditions of R&D tenders. The entire system of R&D procurement needs an analysis and revision involving the roles of HTM, ETAG and RTK with the consideration given to potential linkages with innovation procurement (MKM/EIS). Currently there is no clear responsibility and leadership for a systematic approach for enabling and supporting R&D procurement.

Implementation actions:

Phase 1

- HTM and ETAG should lead the analysis and revision of the entire system of R&D procurement involving the roles, functions and expectations of HTM, ETAG, RTK, GO and universities with the consideration given to potential linkages between R&D procurement and innovation procurement (MKM/EIS). This should involve drawing lessons for R&D procurement from the recently published guidance on innovation procurement developed by EIS.
- Improving R&D procurement requires building up specific competence in procuring R&D by RTK, considering important differences in the preparation of R&D public procurement documentation and the evaluation of tenders. Procurement consultants in RTK should be informed or trained on when and how to use R&D exceptions so that they could advise other government institutions on this. HTM and ETAG should collaborate with RTK to strengthen its expertise in R&D procurement. The R&D clause should also be used for soliciting scientific advice through funding from structural funds.
- ETAG should continue providing services to ministries when they decide to solicit R&D advice through grants. ETAG should set a framework and provide training for line ministries for the use of grants for soliciting scientific advice. ETAG should also search for opportunities for simplifying the EIPM-related grant processes and making them less bureaucratic and faster. ETAG should collect and analyze grant-related practices of different ministries and proactively share and promote these practices among the other government units.

Implementation timeframe: medium-term

The proposed actions may require institutional changes that will likely take about two years.

Resource intensity: low to moderate

The resources needed are the human resources necessary for revising and implementing more R&D-friendly procurement practices.

Box 5: Inspiration from international good practices – R&D procurement

Netherlands

In the Netherlands, to facilitate a quick response to emerging research needs, mixed funding, in the form of a partial lump-sum, is agreed upon between certain ministries and the one independent statutory applied research organization that conducts contract research and offers specialist consulting services. This allows for funding research without going through complex procurement procedures, especially regarding one-off research needs.

Sweden

In Sweden, so-called pre-commercial procurement and innovation procurement are used when government or public organizations have a need that the market cannot solve. Still, they require development and research for suppliers to develop a new product or service. It can also be about situations the market can meet but where the procuring organization and suppliers have ideas for improvements that can lead to solutions. In addition, Sweden's public procurement allows negotiated procedures without prior publication, similar to the R&D exception clause in Estonia.

United Kingdom

In the UK, services for social, economic and market research are available to all UK central government departments, agencies and public bodies through dynamic purchasing system (DPS) on the Research & Insights Marketplace.

(see annex 4.1 for more details on these case studies)

6.2.5 Increase the capacity and incentives of the scientific community to provide policy-relevant research

<u>Actions</u>	<u>Responsibility</u>
	<i>Lead actors</i> <i>Involved actors</i>
6.2.5.1 Encourage working contacts between knowledge suppliers, ministries and ETAG	Universities, Rectors Conference, line ministries, SA network, ETAG
6.2.5.2 Reward policy advice at universities	Universities, Rectors Conference, HTM
6.2.5.3 Educate researchers and university managers on policy advice	Universities, ETAG

6.2.5.1 *Encourage working contacts between knowledge producers, ministries and ETAG*

Description

The decisive factor in achieving an effective system of evidence-informed policymaking is to enhance working contacts between the demand side (ministries), the supply side (including the Academy of Sciences, universities, other research institutions, and think tanks) and the intermediators (Academy of Science, ETAG, Foresight Centre (FC)). While several actions from the side of ministries to reach this general objective were covered in recommendation 3.3.4, this recommendation and related actions focus on “building the bridge” from the perspective of knowledge producers. Therefore, these actions are mutually interlinked.

Numerous science for policy activities, developed over the years by universities, the Academy of Sciences, ETAG, FC and think tanks exist (see final country report sections 5.4.2.2 and 5.4.2.3). It is advisable to have these activities continued and developed further. The universities and the intermediators are encouraged to share their practices on how to provide evidence-informed input and have an impact on policymaking with each other.

Mobility between academia and the public sector is a very efficient way to transfer knowledge and create a common understanding of policy issues. However, such mobility only happens on a case-by-case basis, and systemic measures to foster increased mobility are lacking. The barriers hindering mobility between academia and the public sector can be lowered using different measures, including mobility support schemes (see final country report section 5.3.3.3).

In addition, universities are advised to use their resources to provide thematically policy-relevant courses/programs to public servants, as well as training on policy making.

Implementation actions

Phase 1

- It is reasonable for the Rectors Conference to discuss EIPM matters and exchange best practices at regular meetings (e.g., bi-annual) to drive their adoption across all universities.
- The Rectors Conference can organize a special workshop on the role of universities in EIPM and their cooperation with the other stakeholders, discussing EIPM with the SA network, HTM, ETAG, university leaders, international experts, and researchers with extensive experience in policy advice.
- The annual ETAG Science for Policy conference at Riigikogu could be used to discuss evidence-informed policymaking more clearly. ETAG has much experience running this format in cooperation with HTM, GO, universities, and the Academy of Sciences. One of the forthcoming conferences can be dedicated specifically to this topic.
- Examine the suitable mobility schemes (for example, but not limited to the introduction of short-term mobility grants between the public sector and academia, reintegration grants for researchers who have

spent considerable time in the public sector, the use of sabbaticals for giving policy advice, part-time assignment of researchers in the public sector, pairing schemes, the employment of visiting scholars in ministries) and their implementation possibilities in Estonia. Relevant examples from the practices of foreign universities can be analyzed. ETAG could take the lead by initiating this action in cooperation with universities, HTM and the SA network.

Phase 2

- Develop/redesign the current mobility schemes between academia and the public sector (e.g., SEKMO) based on the findings of analysis conducted in phase 1.
- After consultation with government actors, the universities may consider creating policy-relevant courses, micro-degree(s) and/or Master's program(s) targeted to working public servants.
- Increase the share of knowledge transfer PhD students (teadmussiirdedoktorant, ettevõtlusdoktorant, tööstusdoktorant), and facilitate public servants to get enrolled in knowledge transfer PhD studies.

Implementation timeframe: medium-term

Coordinating the activities and instating mobility schemes and policy-relevant courses/programs may take two to three years.

Resource intensity: medium

Additional resources are needed to implement mobility grants and establish policy-relevant courses/programs. The R&D funds of line ministries could support short-term mobility from academia to ministries as line ministries can allocate some of their analytical work to researchers.

6.2.5.2 Reward policy advice at universities

Description

Traditionally, academic staff performance is measured by their research and teaching excellence. Even if the "community service" is mentioned in the researchers' progress report evaluation criteria, this aspect has little impact on the overall performance evaluations. Therefore, incentives to engage in science for policy activities as part of "community service" are not explicit in the Estonian academic community, and researchers are not duly rewarded (see final country report section 5.4.1.2). More recently, universities have started to develop frameworks and career models to incentivize their academic staff to give policy advice. However, the practices differ largely between universities and between different disciplines. The Rectors' Conference has also discussed how to measure this inherently variable aspect of activity in a researcher's performance. It is recommended that the universities keep this topic in their focus and achieve a common understanding of how to reach more rigorous definitions of key criteria and metrics in the policy advice activities and how to include this aspect in the performance assessment practices of the universities.

Implementation actions

Phase 1

- The Rectors Conference, in cooperation with HTM and ETAG, can organize a workshop on incentivizing the policy advice of researchers and sharing the best practices at Estonian universities. International peers could be invited to introduce their practices.
- It is recommended that a common framework of criteria and metrics for evaluating the societal impact (including policy advice) of researchers across the universities be developed by the universities in collaboration with the Rectors Conference. At the same time, it should be kept in mind that not all researchers should and could be involved in providing policy advice. This framework should be kept as simple as possible, minimizing administrative workload for universities/researchers.

- Individual universities may establish internal awards for the “best policy advice” for researchers being involved in policy advice (similarly to “best publication” or “best teaching staff” awards). These awards could be decided upon together with representatives from government institutions and be promoted in the national media.
- The Government Office and HTM may consider establishing an annual Science for Policy award for a person who has contributed significantly to the EIPM. Candidates for the award can be nominated by governmental institutions and discussed by TAI KK. This award may attract much public attention and promote the notion of policy advice in the research community and to a wider audience.
- ETAG can disseminate the lessons learnt from the involvement in the COARA coalition and work towards including universities, especially since relevant working groups exist in COARA, e.g., one on reforming academic career assessment.

Phase 2

- It is advisable that a common framework for rewarding science for policy activities be agreed upon and implemented in the internal regulations covering academic careers at the universities.

Implementation timeframe: short – to long term.

The workshop and discussions can be initiated in short term. Developing and agreeing on the criteria and metrics may need several years. Learning from the initiated practices may become visible after several years.

Resource intensity: Low.

Costs are related to relatively moderate additional administrative workload for analyses and discussions

6.2.5.3 Educate researchers and university managers on policy advice

Description

Researchers are generally interested in providing policy advice but very often need more skills to do it. They often need to acquire their skills through slow and inefficient learning by doing. Many researchers need more understanding of how government works and how and in which stage of the policy process their input could be used.

Several formats aimed at increasing policy-relevant skills have been recently revised by university leaders and researchers (see final country report section 5.5.3.1) These formats should be actively used and widened, e.g., by adding peer-to-peer training courses, pairing politicians/public servants and researchers, S4P courses in PhD programs, creating micro degree programs on EIPM, open doors initiatives, etc.

Implementation actions

Phase 1

- In cooperation with ETAG and HTM, the universities are encouraged to design a plan for regular training of researchers using the JRC Training-of-Trainers program participants.
- Universities should work to introduce Science for Policy as an elective course in all PhD and master's programs. In addition to covering the basics of the policy process, policy analysis and evaluation, these courses should also cover science communication. More seasoned researchers could also attend the same courses. Universities are encouraged to collaborate and share resources to develop the course.
- The Rectors' Conference may organize an outing for the universities' leadership to meet their peers and discuss the role and opportunities of universities getting involved in policy advice. Such a discussion could also involve international university leaders, experts and/or top public servants.

Implementation timeframe: medium- term

Designing the training plan can be done within a year, introducing the study programs or modules may take longer, and implementing the training courses for researchers may take 2-3 years.

Resource intensity: low to medium

The costs are related to training activities and creating a limited number of courses.

6.2.6 Conclusions

The recommendations in this roadmap can be broken down into four priority areas.

The first area addresses the need to strengthen whole-of-government evidence-informed policymaking (recommendation 6.2.2). It encompasses recommendations that call for reform and re-imagining of TAI KK, the need to establish cross-ministerial research interests and cross-ministerial research funding program, reinforcement of the use of a centralized research database, and the need to bring matters of EIPM to the high policymaking level.

The second area (recommendation 6.2.3) highlights the need to strengthen the role of science advisers across the government and cover the need to adopt a unified job profile across the ministries, encourage more interaction between science and strategic advisers, elevate the existing science adviser network, and create scientific advisory bodies in the line ministries.

The third area identifies the need to increase the capacity of line ministries to absorb evidence-informed advice (recommendation 6.2.4). It calls for more recognition of academic degrees in the current service and in hiring decisions, more training and capacity building for EIPM and foresight practices amongst analysts and top civil servants, the creation of better bridges between knowledge suppliers and providers, improvement of data sharing and storing practices, and the revision of procurement practices.

The last area (recommendation 6.2.5) is directed at the knowledge suppliers to increase the capacity and incentives of the scientific community to provide policy-relevant research. It revolves around encouraging more contact between the knowledge and demand side, rewarding policy advice at universities and educating researchers and university managers on policy advice.

7 References

- EC (2023), R&I Foresight in Government: A Handbook for Policymakers, Final Report. European Commission, Directorate General for Research and Innovation <https://op.europa.eu/en/publication-detail/-/publication/875850ec-68c2-11ee-9220-01aa75ed71a1/language-en/format-PDF/source-294303501>.
- ERR (2021), Esimest aastat ülikoolide poolt pakutavad mikroraadid on populaarsed, 16.09.2021, <https://arhiiv.err.ee/audio/vaata/uudised-esimest-aastat-ulikoolide-poolt-pakutavad-mikroraadid-on-populaarsed>.
- Espenberg, S. et al. Ühtekuuluvuspoliitika fondide rakenduskava 2014–2020 ettevõtlus- ja innovatsioonitoetuste tulemuslikkuse hindamine, Tartu Ülikool, Tallinna Tehnikaülikool, 2020, www.rtk.ee/media/676/download
- ETAG (2020), Estonian Research 2022, <https://doi.org/10.23673/tead/002>
- ETAG (2023), Eesti teadlaste arv, palk ja hariduslik jaotus. Andmetabelid 01.12.2023 seisuga, <https://www.etag.ee/tegevused/uuringud-ja-statistika/statistika/eesti-teadlased/>.
- Hollanders, H., Es-Sadki, N. and Khalilova, A. European Innovation Scoreboard 2023 – Country profile Estonia, European Commission Directorate-General for Research and Innovation, Brussels, 2023, https://ec.europa.eu/assets/rtd/eis/2023/ec_rtd_eis-country-profile-ee.pdf
- Klasche, B. Dealing with Global Crises. A Relational Approach to Studying and Governing Wicked Problems. Tallinn University Dissertations of Social Sciences 146, 2021.
- Lutsar, I. 2022. The coronavirus crisis and research funding, pp 113-114. In Raudvere, K. (ed) Estonian Research 2022, Estonian Research Council, 2022.
- Massaro, M., Dumay, J. and Garlatti, A. (2015), "Public sector knowledge management: a structured literature review", Journal of Knowledge Management, Vol. 19 No. 3, pp. 530-558, <https://doi.org/10.1108/JKM-11-2014-0466>.
- Ministry of Justice, 2014. First years of systematic regulatory impact assessment in Estonia – Lessons learnt. Available at: https://www.just.ee/sites/www.just.ee/files/jum_ettekanne_18.09.2014_oma.pptx, accessed 04/09/2023.
- OECD (2022), Tackling Policy Challenges Through Public Sector Innovation: A Strategic Portfolio Approach, OECD Public Governance Reviews, OECD Publishing, Paris, <https://doi.org/10.1787/052b06b7-en>
- OECD (2023), Strengthening Policy Development in the Public Sector in Ireland, OECD Public Governance Reviews, OECD Publishing, Paris, <https://doi.org/10.1787/6724d155-en>.
- Raudvere, K. (Ed.) Estonian Research 2022. Estonian Research Council, 2022. Available at: https://www.etag.ee/wp-content/uploads/2022/01/Estonian_Research_2022.pdf, accessed 04/09/2023.
- Rutiku, S. 2022. Competitive research and development funding instruments, pp 25-30. In : Raudvere, K. (ed) Estonian Research 2022, Estonian Research Council, 2022.
- Schwendinger, F., Topp, L. and Kovacs, V., Competences for Policymaking, EUR 31115 EN, Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-53454-9, doi:10.2760/642121, JRC129623.
- Selg, P., Klasche, B., Nõgisto J. Wicked problems and sociology: building a missing bridge through processual relationalism. International Review of Sociology. 2022: DOI: 10.1080/03906701.2022.2035909
- Selg, P., Sootla, G., Klasche, B. A Relational Approach to Governing Wicked Problems. From Governance Failure to Failure Governance. Palgrave MacMillan, 2023.
- Sørensen, E. and Torfing, J. Theories of Democratic Network Governance, Palgrave MacMillan, 2007.
- Tamm, M. and Realo, A. Kuidas ehitada teadmispõhist riiki ehk Ühe skandaali märkmeid. Sirp, 18.08.2023, <https://sirp.ee/s1-artiklid/c21-teadus/kuidas-ehitada-teadmispohist-riiki-ehk-uhe-skandaali-markmeid/>

Tõnuri, P. and A. Hanson (2020), "Anticipatory innovation governance: Shaping the future through proactive policy making", OECD Working Papers on Public Governance, No. 44, OECD Publishing, Paris, <https://doi.org/10.1787/cce14d80-en>.

Turu-uuringute AS (2024), Eesti elanikud usaldavad kõige rohkem siseturvalisust tagavaid institutsioone, 13.02.2024 – <https://turu-uuringute.eu/eesti-elanikud-usaldavad-koige-rohkem-siseturvalisust-tagavaid-institutsioone/>

UNDP (2018), Foresight manual. Empowered futures for the 2030 agenda – https://www.undp.org/sites/g/files/zskgke326/files/publications/UNDP_ForesightManual_2018.pdf.

8 Annexes

8.1 Annex 1: Respondent organisations diagnosis phase (combining questionnaire and interviews)

In alphabetical order:

- Academy of Sciences
- Chancellor of Justice Office
- Estonian Research Council
- Estonian University of Life Sciences
- Foresight Centre
- Government Office
- Innovation Team
- Ministry of Climate / Ministry of Environment*
- Ministry of Economic Affairs and Communications
- Ministry of Education and Research
- Ministry of Finance
- Ministry of Justice
- Ministry of Rural Affairs
- Ministry of Social Affairs
- National Audit Office
- Rector's Conference
- Statistics Estonia
- Tallinn University
- Tallinn University of Technology
- Tartu University
- Parliament of Estonia
- Universities Estonia (Rectors' Conference)

*Ministry of Environment was reorganised to Ministry of Climate during the data collection period, which resulted with some confusion of filling the questionnaire

For some organisations different respondents from different units were interviewed.

8.2 Annex 2: Methodology diagnosis phase

Desk Research

Desk research was conducted between Q1/2023 and Q3/2023 and worked as the foundation for creating the surveys and interview questions. The content of the documents was also used to write this report. The collected data ranged from the notes from the kick-off event in March 2023, organisational websites, related presentation slides and memos, as well as national strategies and policy frameworks. Preparing the questionnaire included consultations with stakeholders in form of meetings and written communication.

Questionnaires

In June 2023, online questionnaires were sent out to potential informants (ministries, government office, agencies, and universities). The questionnaire had a general section A, sent to every respondent, and a specialized section B asking different questions for staff of the government office, ETAG, line ministries, and research performing organisations. The questionnaires consisted of scaling questions or open questions that could be answered using free text.

With the questionnaire 36 answers were collected (for detailed breakdown see Figure 1), and all stakeholders of the research and development landscape were represented, amongst them 23 for describing only positions of the department/unit of the respondent and 11 describing the position of the whole organization, assuming that the respondent did some prior data collection inside their institution. All respondents hold a higher education degree, 53% of respondents held a Ph.D., 42% masters' and 6% bachelor's degrees. The average work experience in their current organization was 8 years (min 0.5 years, max 43 years).

Since a statistical analysis cannot be performed due to the small size of the sample, the answers to the questionnaire have been treated as a qualitative data set. Above all, the answers given as free comments were most helpful and have been used in the report.

Interviews

Three experts conducted 17 semi-structured individual and group interviews with 25 key actors (Annex 1) during July and August 2023 in Tallinn and Tartu. For most of the interviews, at least two experts were present, for some only one. The first ten interviews were observed and supported by JRC and OECD officials. The interviews were conducted mostly in English, some cases in Estonian. In case the respondent had also filled out the questionnaire, some interview questions were related to specifically given answers. All interviews were recorded with the permission of the respondents. Recordings were transcribed using MS Word built-in transcriber (English) or automatic transcriber by TalTech²⁰ (Estonian). Automatic transcripts were then manually edited and anonymized. A safe electronic channel for document sharing was provided by European Commission.

Interviewees openly discussed different topics and shared their honest opinions. This report is a consolidated work consisting of the interview and questionnaire response. It does not reflect the opinion of each respondent individually but is a product of the analysis of the expert team. While conducting the interviews, a certain narrative emerged that is reflected in this report. We listened to radical positions in both directions – “everything is excellent” or “nothing works”, therefore, some stakeholders might not be represented. We view the respondents and interviewees as co-creators of this report. They are the knowledge bearers and experts. Based on this, the report was peer-reviewed by the main beneficiaries and the respondents. All errors, however, are the responsibility of the expert team.

8.3 Annex 3: Public information on the science advisers at ministries

Information was collected from ETAG website in July 2023.

Organisation	Name	Position name	Structure	Unit reports to
Estonian Government Board	Katrin Kiisler	Adviser	Strategy unit	Deputy Strategy Director
Ministry of Education and Research	Laura Kirss	Scientific adviser	Strategic planning and communications department	Secretary General
Ministry of Defence	Kairi Talves		No public information on the website	
Ministry of Climate	Raili Allmäe Andro Truuverk	Adviser	Budget and strategy department	Deputy Secretary
Ministry of Rural Affairs	Liis Sipelgas	Adviser	Research and development department	Deputy Secretary for Fisheries Policy and Foreign Affairs
Ministry of Economic Affairs and Communications	Külliki Tafel-Viia	Head of knowledge transfer	Strategy department	Secretary General
Ministry of Finance	Reelika Vahopski	Adviser	Strategy and finance department	Secretary General
Ministry of Interior	Kristiina Kütt Krystiine Liiv	Research Adviser	Strategy and development department	Undersecretary for Assets
Foreign Ministry	Erle Rikmann		No public information on the website	
Ministry of Social Affairs	Mari Teesalu Marion Pajumets	Scientific adviser	Department of analysis and statistics	Deputy Secretary of Innovation
Ministry of Culture	Viivian Jõemets	Adviser (Research and Development)	Strategic planning and innovation department	Secretary General

8.4 Annex 4: Selection of Strategic Foresight methods

Method	Description	Uses
Horizon scanning	Systematic monitoring and examination of a broad range of data sources about the phenomenon about which one aims to gain foresight, in order to identify perspectives and trends to identify premature signs of potential upcoming developments, as well as how they may affect the future.	Analytical
Environmental scanning	Systematic monitoring of an environment (in the abstract sense) in order to recognize in advance opportunities and threats and thus being able to intervene promptly.	Analytical
The Delphi method	Method where an expert panel fills out questionnaires with their forecasts on a topic in two or more rounds that are then anonymously summarized to experts together with the reasons for their judgments, and the experts are encouraged to revise their earlier answers in light of these replies.	Strategic
Expert panels	Methods to elicit knowledge from experts. Expert panels are typically groups of 12-20 individuals who are given 3-18 months to deliberate upon the future of a given topic.	Consultative
Expert consultation	Engagement of experts by means of interviews, a short workshop or a small survey connected to a particular technology or projected impact. The consultation aims to determine expert expectations regarding possible, plausible or likely future developments connected to the phenomenon.	Consultative
Participatory foresight	A method usually used in normative foresight analysis, in which citizens state their visions and preferences for particular futures and provide comments on scenarios and solutions presented by experts.	Creativity, consultative
Causal layered analysis	Method to deconstruct conventional thinking to produce a shared view of possible future outcomes that can break existing paradigms of thinking and operating achieved by group discussions, sharing of diverse perspectives, and surfacing contrasting world views and underpinning myths.	Creativity
Scenarios	Scenarios are 'stories' illustrating visions of possible futures or aspects of possible future. Scenarios are constructed by starting with the present and past and projecting into the future and usually presented in a range of possible futures.	Strategic
Backcasting	Normative scenario method that analyse how events could develop from the present into an imagined future.	Prescriptive
Wild Cards and Weak Signals (Wi-We)	Carried out in small (usually expert) groups, the method allows considering alternative interpretations of an issue's evolution to gauge its potential impact. Wild Cards are situations/events with perceived low probability of occurrence but potentially high impact if they were to occur. Weak Signals are unclear observables warning us about the probability of future events (including Wild Cards).	Creativity
Narratives	Narratives are stories or "storied ways of knowing" about how the future may evolve.	Creativity, prescriptive
Visioning	Creation of a preferred future that imaginatively captures values and ideals.	Prescriptive
Science fictioning	Method that creates stories, fictional narratives, that assume that possible events, which have not yet materialised have taken place, usually at some point in the future, and elaborates on the consequences of this.	Creativity, prescriptive
Trend analysis, extrapolations/ Megatrends	Identification of general tendencies or directions evident from past events and increasing or decreasing in strength of frequency of observation.	Analytical, simulation
Relevance tree/Logic charts	Relevance tree or logic chart are methods where the topic is approached in a hierarchical way. E.g. relevance tree is an analytic technique in which a broad topic is subdivided into increasingly smaller subtopics, thereby showing an increasing number of paths to the objective.	Prescriptive
Vulnerability mapping	Mapping the vulnerabilities as probabilities that a social, ecological, or physical reference unit will suffer harm in the case of a certain event.	Analytical, diagnostic
(Technology) Road mapping	Planning technique that defines a sequence of objectives, future developments and future alternatives for decision making. Usually set in a collaborative foresight process in which a broad set of strategies and plans is developed to reach a common goal.	Strategic

Course of action analysis	Method developed to assess the costs, impacts and risks associated with alternative action plans. Each plan is assigned with values and metrics that measure all the possible developments. These are then compared and confronted in order to obtain assessments based on the set of priority-reflecting decision-making rules.	Strategic, prescriptive
Cross impact/structural analysis	Methods for predicting the probability for an event to occur which based on its potential interactions with other events. To each hypothetical, which pertains to a set, is then assigned an initial probability; these conditional probabilities are determined using a matrix to consider their potential interactions.	Analytical, strategic
Future Wheel	A structured brainstorming technique, which uses a wheel-and-spoke like graphical arrangement to analyse and take into account primary and secondary impacts surrounding a central or hypothetical trend. The futures wheel seeks to develop the consequences of today's issue on the longer-term future.	Creativity
Gaming	In foresight practises refers to a structured exercise for stress-testing decisions in a complex environment, which is simulated on the basis of a scenario.	Creativity
Historical Analogy	Method that uses the dynamics of past events to comprehend the underlying dynamics of present and future events.	Creativity
Implications Wheels	Structured brainstorming technique that gathers second, third and fourth order events around a central trend or hypothetical event and uses probabilities to assess their potential repercussions.	Creativity
Issues-analysis	Process that systematically “unpacks” questions, dilemmas and cross-cutting implications that arise from tendencies, hypothetical future events and alternative political choices.	Diagnostic, strategic
Morphological Analysis	Method used to structure and investigating groups of relationships contained in multidimensional and non-quantifiable problem spaces.	Analytical, prescriptive
Robust decision-making	Method for connecting short-term policy interventions to different types of long-term futures. In cases of deep uncertainty, the methods use models not as predictors but as generators of cases exploring assumptions and outcomes.	Strategic
Adaption pathways	Adaptation pathways are a sequencing set of possible actions based on alternative external, uncertain developments over time using the concept of ‘tipping points’. Adaption pathway proposes a sequence of potential action following a particular tipping point.	Strategic
Simulation/ Modelling	Quantitative method designed to understand a system's interactions using prototypes, computer programs or other more or less simplistic representations of real systems. Simulations are used to analyse the behaviour of a system when asking ‘what-if’ questions about the real system and aid in the design of real systems.	Modelling, simulations
State of the Future Index	An index measures a 10-year outlook for the future. It is based on key variables and forecasts that collectively suggest which kind of trajectory the future may pursue.	Diagnostic, radar
STEEP Implication Analysis	Methodology for systematically assessing the social (S), technological (T), economic (E), environmental (E) and political (P) aspects and issues (in relation to problem analysis) of a trend, event, decision or policy	Diagnostic, analytical
SWOT analysis	Method for examining and assigning weight to internal factors - forces (S) and weaknesses (W) and external factors - opportunities (O) and threats (T) - to strategically coordinate resources and capacities with the environment.	Diagnostic

Source: Tönurist, P. and A. Hanson (2020)

8.3

8.4

8.5 Annex 5: International examples of best practices related to proposed actions of the roadmap

The descriptions of the practices are referred to by the numbers of recommendations.

6.2.1.2 Establish common areas of research interest

Spain (ES)

In ES, the [Oficina C](#), which reports to the **Directorate of Studies, Analyses and Publications** of the General Secretariat of Congress. The Office follows a 4-year strategic plan while regularly informing the Bureau of the Congress of Deputies of the state of knowledge on a number of topics. In terms of science advice processes, Office C has established the so-called [Method C](#) for gathering scientific-technical evidence on different topics of interest to the members of the Parliament. The formulation of research needs is based on a 4-step process.

- Based on a preselection carried out by Oficina C and an Advisory Committee, gathering institutional representatives selected by organisations and entities of the Spanish science and development community, the Bureau of the Congress selects the list of '**Topics C**' for the reports to be produced.
- Under the coordination of a **Scientific and Technological Evidence Officer**, different teams work on a Report C, while at the same time working together with other Officers in cross-cutting and methodology sharing processes. Each 'Report C' summarise available scientific evidence on a given topic, situating it in the Spanish socio-political-economic context. The drafting process includes:
 - a literature review phase;
 - an interview phase (with researchers, scientists, and experts on the given topic).
- Reports C are then reviewed at different levels before their publication:
 - internal review in Oficina C conducts an internal review to analyse the reports' content, format, and references;
 - two rounds of external review by scientists, researchers, and the experts consulted during the interview phase
- All Reports C are translated into English and published, then disseminated and communicated to the general public, as well as through the so-called **Dialogues C**, closed-door meetings to present the Reports C to staff from the Congress of Deputies who may be interested.

Finland (FI)

[Phenomenon maps](#) are co-created evidence syntheses on emerging complex policy issues, hence creating a base for the systematic operationalisation of research needs. There are four main steps in the process:

- phenomenon roundtable, bringing together key experts from the research community, the government, the third and fourth sectors as well as the business world;
- knowledge mapping, through the assessment of existing studies making visible the type of research that has been done on the phenomenon as well as the thematic gaps;
- tailored synthesis, producing concise overviews of varying levels of systematicity to meet the more specific information needs identified at the desktop stage;
- dissemination, in close collaboration with key stakeholders leveraging their impact networks. The content is collated and communicated in various different formats, and stakeholder workshops are organised for the purposes of interpreting the results and identifying policy pathways.

6.2.1.3 Establish a cross-ministerial research funding program

Finland (FI)

Strategic Research funding in Finland. Finland has worked out a model for funding of strategically important research which has demonstrated the proof of time over the last ten years.

Since 2014, strategic research in the remit of the Strategic Research Council (SRC), established under the Research Council of Finland (<https://www.aka.fi/en/strategic-research/>). SRC provides funding for long-term, solution-oriented, multidisciplinary research. SRC-funded research promotes an active and ongoing collaboration between knowledge producers and knowledge users. The annual research budget of SRC is approximately 55 million euro. Each year, the SRC prepares a proposal on key strategic research themes and priorities to be approved by the Finnish Government, in the person of the State Secretary. The Government determines the research needs and decides on the final themes, which the SRC then formulates into research programmes, running for 3–6 years. For an example The Finnish Government has decided the two major themes of strategic research programmes to be launched in 2025: Economy and welfare in an era of strategic competition and Skills, labour supply and migration in future Finland. The cross-cutting priority for these programmes is artificial intelligence.

6.2.2.1 Develop a job profile for science advisors and raise their position in the ministerial hierarchy

United Kingdom (UK)

In the UK, the first cross-government Chief Scientific Adviser (CSA) was appointed in 1964 and since 2002, additional science advisers have been appointed to every government department in the UK. Currently, the UK has a Government Chief Scientific Adviser with over 20 Departmental CSAs who are also supported in each department by science officials. Their role is to actively provide advice to ministers and promote evidence-informed policymaking, discuss and facilitate implementation of policy on science, technology, engineering and mathematics including the support of design of the Areas of Research Interest and facilitate communication between government and key stakeholders on particular high profile STEM-related issues and those posing new challenges for government. They all work as a formal network supported by the Government Office for Science (GOS) that promotes inter-ministerial coordination and offers weekly meetings with CSAs to discuss departmental science priorities and policy topics of relevance to the provision of evidence.

Of interest, a [Guidance for CSA and their supporting teams of CSA Officials](#) offers information on the role, responsibilities, codes of conduct, and how the network is embedded in the wider UK science-for-policy ecosystem. Lastly, CSAs tend to be mid to senior-level career academics or industry professionals who are seconded or hired in a full-time or part-time basis.

6.2.3.4 Create better bridges between ministries and knowledge providers

Inspiration on mobility schemes

European Union (EU)

An example of mobility schemes at the EU level to foster policymakers' S4P skills is the [Policy Leader Fellowship \(PLF\)](#) organised by the School of Transnational Governance (STG) of the European University Institute (EUI). The PLF is a residential program designed for mid-career professionals. During a five or ten-month period, fellows engage in crafting policy recommendations and strategies addressing transnational challenges, drawing upon interaction with faculty and researchers and engaging in a mutual learning process.

United Kingdom (UK)

A relevant case in the UK, is the UK Research and Innovation's (UKRI) [Policy Internships](#) scheme, which is designed to give doctoral students the chance to contribute to the policymaking process and to understand how research evidence can inform policy decisions. Interns are placed within a host organization for three months.

Another relevant scheme is the Royal Society's [Pairing Scheme](#), which each year allows scientists to collaborate with UK parliamentarians and civil servants, learning about each other's work. Participants can gain an insight into how research findings can help inform policy making, hence learning hands-on how they can get involved

and how to make an impact. The pairing scheme starts with a 'Week in Westminster,' during which selected scientists hear from invited speakers, taking part in events and workshops, as well as spending time 'shadowing' their pair. The MP, peer or civil servant will then be invited to a reciprocal visit at the scienti

United States (US)

In the US, one of the main mobility schemes at the science-policy interface is the [Science & Technology Policy Fellowships](#) (STPF) of the American Association for the Advancement of Science (AAAS), which allows scientists and engineers to learn first-hand about policymaking while contributing their knowledge and analytical skills to the policymaking. Fellows are assigned for one year to either executive, legislative or judicial branches of the US federal government in Washington. The programme is run by the AAAS, which recruits prospective fellows, host offices, and sponsoring societies, provides preliminary training to the fellows about federal government operation, manages the selection and placement processes and the professional development and networking program.

Germany (DE)

A good example of mobility scheme at the science-policy interface is the [Mercator Science-Policy Fellowship](#), organized by the Stiftung Mercator in collaboration with research institutions and government bodies. Fellows include policy professionals from ministries and agencies, members of parliament, staff of NGOs and journalists. The fellowship programme is structured around face-to-face meetings between the fellows and academic researchers. The fellows provide lists of topics they are interested in; each fellow receives a tailor-made schedule of face-to-face meetings with relevant academics where they can ask questions, engage in debates on policy questions or become acquainted with new topics.

6.2.3.8 Revise procurement practices for R&D

Netherlands (NL)

To facilitate a quick response to emerging research need is, in NL there are examples of **mixed funding**, in the form of a partial lump-sum, agreed between certain ministries and the [Netherlands Organisation for Applied Scientific Research \(TNO\)](#), an independent statutory research organization that conducts contract research, offers specialist consulting services. This allows to fund research without the need to go through complex procurement procedures, especially when it comes to one-off research needs. Both the Ministries of Justice and Security and the Ministry of Defence have an agreement of this sort with TNO, which favour quick and targeted supply of knowledge, as the continuous nature of such collaboration allows knowledge suppliers to be always up to speed with policy developments.

Sweden (SE)

In SE there are two main procurement instruments that are tailored for R&D. A first one is the so-called **pre-commercial procurement** (PCP, [förkommersiell upphandling](#) in Swedish), which is used specifically to produce R&D services. PCP was first introduced by the European Commission in 2007 as a form of innovative demand-side-driven approach to innovation, which is becoming increasingly popular across Europe (example of successful cases can be found [here](#))

Pre-commercial procurement is not part of procurement legislation but follows the EU principles of procurement law: (e.g. equal treatment, transparency). It implies suppliers applying to participate in research and development work, where the development of concepts and ideas takes place in several different phases, at the end of which the joint development work is evaluated and the procuring organisation can either award a contract to move on to the next phase or cancel the process. In practice, the contracting authority or entity invests in **creating a market** in a specific area that can meet the needs in the longer term. After the process is completed, the procuring organisation can proceed and procure a ready-made solution in accordance with procurement legislation.

A second innovative method is the so-called innovation procurement ([innovationsupphandling](#)) which can be used when government or public organisations have a need that cannot be solved by the market but requires

development and research for suppliers to develop a new product or service. It can also be about situations that can be met by the market, but where the procuring organisation and suppliers have ideas for improvements that can lead to developed solutions. Innovation procurement however takes longer and require more resources than a procurement where the product/service is already available on the market, and it requires substantial preparation and sometimes extensive pre-study studies. It is also unavoidable that one or more people in the organisation will be affected when something new and innovative is implemented.

The National Agency for Public Procurement has been building capacity on this aspect also in the context of the EU [Procure2Innovate project](#).

Furthermore, the SE [public procurement law](#) provides that for research procurement public contracting authorities may use a **negotiated procedure** without prior publication, similar to the R&D exception clause in EE, when it concerns supplies purely for the purpose of research, experimentation, study or development, on condition that:

- the awarded contract does not include production in quantities that aim to establish commercial viability or to recover research and development costs, and
- the award of the contract does not affect later competitive procurement intended particularly for such purposes.

In such negotiated procedure without prior publication a ministry may choose to approach one or more suppliers directly and invite them to negotiate.

United Kingdom (UK)

In the UK context, services for social, economic and market research available to all UK central government departments, agencies and public bodies, through a dynamic purchasing system (DPS) on the [Research & Insights Marketplace](#). This DPS provides access to all procurements run by Crown Commercial Service, so that institutional buyers can procure social, economic and market research, as well as behavioural insights services for projects of all sizes and values. Research and Insights offers a list of suppliers through a filtering system, which allows contracting authorities to select specific areas of work. Service suppliers can apply to join this DPS at any time throughout the life of the agreement (with an initial period of four years).

6.2.4.2 Reward policy advice at universities

Coalition for Advancing Research Assessment (CoARA)

CoARA (<http://coara.eu>) was formally established in 2022. It has pushed an agreement on Reforming Research Assessment that sets a shared direction of changes in assessment practices for research, researchers and research performing organisations, with the overarching goal to maximise the quality and impact of research. The Agreement includes the principles, commitments and timeframe for reforms and lays out the principles for a Coalition of organisations willing to work together in implementing the changes. The vision is that the assessment of research, researchers and research organisations recognizes the diverse outputs, practices and activities that maximise the quality and impact of research. In the neighbouring countries, eg, in Finland and Sweden, most of the research performing and research funding organizations have signed the agreement. Estonia is lagging clearly behind, only ETAG and Estonian Young Academy of Scientists have joined this initiative.

8.6 Annex 6: Contributors

Grateful thanks are extended to the following persons for their invaluable input to the project at various stages in the form of numerous activities - responding to the questionnaires, sharing information and opinions via individual or group interviews, discussing the intermediate results in the focus group meetings and workshops and commenting on the draft reports.

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