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This working paper discusses strategic foresight initiatives and methodologies that support decision making and process design. It highlights case studies, international benchmarks, and best practices as well as methodological recommendations and options to promote the adoption and use of strategic foresight in government. The paper is structured in four sections, each centred on a critical action to improve decision making through strategic foresight: (i) framing strategic foresight, (ii) building its fundamental components in governments, (iii) fine-tuning foresight interventions to specific contexts, and (iv) doing concrete activities to solve specific policy challenges. Given its exploratory nature, this working paper and its proposals must be seen as contributions to the ongoing debates about the use of strategic foresight for decision making in government. The ultimate purpose of this paper is to help governments become more proactive and prospective.

Acknowledgments

Executive summary

This working paper discusses strategic foresight initiatives and methodologies that support decision making and process design. It highlights case studies, international benchmarks, and best practices as well as methodological recommendations and options to promote the adoption and use of strategic foresight in government. The paper is structured in four sections, each centred on a critical action to improve decision making through strategic foresight: (i) *framing* strategic foresight, (ii) *building* its fundamental components in governments, (iii) *fine-tuning* foresight interventions to specific contexts, and (iv) *doing* concrete activities to solve specific policy challenges. Given its exploratory nature, this working paper and its proposals must be seen as contributions to the ongoing debates about the use of strategic foresight for decision making in government. As such, rather than a definitive set of assertions, this working paper raises hypotheses to be tested, improved and, if need be, criticised.

To help governments become more proactive and prospective, strategic foresight needs to be framed through a systemic governance approach. Foresight analysis and insights of possible futures also need to be matched with concrete actions in the present. Bridging the strategic foresight impact gap – i.e. the distance separating foresight expertise and its actual implementation to target policy goals – involves mobilising and embedding strategic foresight into government functions and mechanisms. This working paper advocates for the use of systemic approaches to identify and access the elements that sustain the effective use of strategic foresight in government. At the practical level, the paper introduces prompt questions and tools for governments to use this systemic approach for purposeful interventions.

In order to build sustained and effective strategic foresight systems in governments, the Strategic Foresight Unit (SFU) of the OECD proposes a set of systemic elements, namely demand and mandate, capabilities and skills, institutional arrangements, embeddedness in policymaking, and feedback and learning loops. Sustained support and demand for strategic foresight, especially from high-level sponsors and "champions", is needed to ensure its systematic application. Fostering the adoption of foresight requires a clear definition of mandates and the allocation of responsibilities to government organisations and actors. This working paper also highlights important capabilities and skills that need to be nurtured across the whole public sector, at the level of public sector organisations, and among individual public sector managers and staff. Using examples to illustrate the diversity of strategic foresight institutionalisation processes and formats, the paper highlights the relevance of institutional arrangements, such as a strong and direct connection with the policy arena, the creation of legislation and regulatory incentives, the support to specialised agencies benefiting from explicit (and transversal) mandates, and the professionalisation of practitioners and their careers and expertise. To best respond to the needs and expectations of its users, strategic foresight also needs to incorporate learning loops, which enable the constant improvement of its approaches. Regarding its embeddedness in policymaking, the paper highlights eight functions that foresight performs for decision makers:

- Strategic foresight can help decision makers' *self-reflection*, enabling them to articulate unasked questions, debunk implicit biases and identify assumptions that sustain their daily routines.

- Foresight approaches provide useful *insights* for decision makers, creating high-quality, robust and reliable outputs to improve the impact of policymaking.

- Foresight practices, processes and products can *steward* the implementation of public policies, providing constant awareness about ongoing, unpredictable changes or long-term impacts of public policies.

- Strategic foresight helps to mobilise and mediate stakeholders' *participation and co-creation* around the exploration and debate about plausible and desirable futures.

- Engagement with futures can nurture *empathy* among stakeholders, enabling the mutual understanding of diverse points of view about the future and contributing to the establishment of common ground.

- Strategic foresight offers decision makers *scope to experiment,* including stress-test options regarding the future and probes into potential future paths and outcomes based on present-day decisions.

- Decision makers can *acquire or improve their skills*, such as their ability to account for sustainability or their agility to cope with unexpected events.

- Through its incentives to adopt longer-term, forward-looking perspectives, strategic foresight can drive decision makers' *imagination* to express and inspire possible futures and alternative narratives of uncertain and complex scenarios.

Foresight approaches work best when fine-tuned to their specific context of application. The acknowledgement of barriers as well as enablers is an important step in the design of adaptable, achievable, robust and context-adjusted strategic foresight processes and interventions. This working paper provides an extensive review of strategic foresight barriers and enablers identified in cases around the globe. The most apparent obstacles to strategic foresight adoption and use in government include short-termism and risk aversion, scarcity of specialised skills in public administration, or the existence of organisational and sectoral silos. The limited accessibility or lack of timeliness of strategic foresight products for decision makers and the underuse of evaluation instruments are also seen as hindrances. Among the enabling factors, this paper highlights the involvement and buy-in of policymakers, the credibility and reputation of strategic foresight units and practitioners, and their ability to grasp and participate in public debates. Sufficient resources, clear ownership and strong mandates for strategic foresight are necessary across institutional arrangements. High-quality expertise and pertinent skillsets, as well as pockets of talent or teams equipped to operate transversally in government, all support strategic foresight implementation. Providing policymakers with relevant, usable and accessible outputs is critical to embed strategic foresight in the policy cycle. Regular interaction with users to gather their feedback and impact assessment exercises are necessary for the continuous improvement of strategic foresight processes and practices. This working paper introduces a blueprint of critical factors for the acceptance and use of strategic foresight in government to help governments tailor strategic foresight interventions to their specificcontext.

The value of strategic foresight lies primarily in its application to decision making. Robust methodologies need to be applied through a structured process of concrete actions that ensures strategic foresight is fit-for-purpose and impactful. This working paper reviews distinct models that explore strategic foresight as an iterative and actionable approach articulated through a portfolio of methods and tools. It explores in detail the application of strategic foresight to selected priority topics: green and energy transition, and equity and social cohesion. For each of these topics, the working paper identifies and shares experiences and lessons from relevant use cases.

Finally, this working paper highlights five areas of opportunity for PlanAPP to explore in Portugal:

- Given its position in the Centre of Government, PlanAPP can promote the collaborative design of a transversal strategy for foresight in the Portuguese public administration with an associated roadmap for action, providing the direction and defining the resources required to generate stronger and effective capacities and initiatives.

- Develop a scan of the whole strategic foresight ecosystem in Portugal in order to map, in detail, its actors and their interconnections, as well as identify its specific barriers and enablers.

- Use its mission and mandate to promote concrete interventions that focus on specific projects, either domain-specific or challenge-based, applying strategic foresight approaches on the ground and oriented toward tangible outcomes.

- Upgrade ongoing initiatives to connect existing practitioners in the Government of Portugal. The creation of a foresight community of practice would increase interaction and collaboration across sectors and organisations.

- Promote exchanges with international partners, benefiting from contacts already established, to share lessons and build cross-border initiatives to match global challenges.

This working paper provides guidance for governments to further promote and disseminate strategic foresight for decision making. The paper reviews substantive knowledge and research about strategic foresight and gathers a series of international case study examples. It also offers methodological guidance and suggests actions for designing and updating strategies and interventions that integrate strategic foresight approaches. Through all these contributions, the paper sets an emerging framework for proactive and prospective governments.

Table of Contents

1. Introduction

Governments face an increasingly complex and uncertain environment when designing public policies to address emergent changes while meeting societal needs and expectations. Methodological advances and international experiences in a wide range of contexts have shown the benefits that strategic foresight can bring to public decision making. The practice of foresight is not about predicting the future and most frequently draws on collaborative approaches and participatory processes to include multiple perspectives on the future and develop plausible and possible scenarios. Strategic foresight is the ability to explore possible futures and act upon these insights in the present. As such, strategic foresight strengthens decision making and planning activities under uncertainty and enables structured responses to emerging trends and societal transformations. These approaches enable governments to better deal with long-term processes and goals by exploring futures' opportunities beyond the usual risk avoidance and resistance to change resulting from "business-as-usual" approaches. Strategic foresight, insofar as it seeks to retrieve the most out of collective intelligence, aims to be fit-for-purpose, inclusive, anticipatory, and impactful.

Numerous countries have worked to institutionalise strategic foresight in their governments in order to build resilient strategies and futures-prepared policies to confront unprecedented transformations as a result of the climate crisis, technological evolution, geopolitical tensions, and health and economic crises. Differences aside, Finland, Singapore and Canada, among other countries, all have a longstanding tradition in applying strategic foresight and futures thinking to inform policymaking processes and to navigate uncertainty. Lithuania, Spain and Portugal have built upon these examples, among other references, to define their specific approaches to strategic foresight governance. The Government of Portugal, specifically, established the Portuguese Competence Centre for Planning, Policy and Foresight in Public Administration (PlanAPP), in March 2021, to improve both the co-ordination of policies across sectors and the institutional capacity to design and steer strategies for public purposes. Among its Centre-of-Government responsibilities, PlanAPP's mandate is to promote and steer the Government's foresight capabilities and initiatives.

This working paper gathered its insights through extensive research on strategic foresight, within the project on *Strengthening Decision Making and Policy Development in Portugal* closely developed by the OECD Directorate for Public Governance (GOV) with the Portuguese Centro de Competências de Planeamento, de Políticas e de Prospetiva (PlanAPP). The Government of Portugal has sought support from the OECD Observatory of Public Sector Innovation to highlight strategic foresight best practices and capabilities in OECD member and non-member countries, drawing on international benchmarking and case studies to emphasise impact in practice. In order to develop its capacities, PlanAPP engaged in a multi-dimensional co-operative project with the OECD Directorate for Public Governance (GOV) entitled *Strengthening Decision-Making and Policy Development in Portugal*. The OECD Observatory of Public Sector Innovation (OPSI) was responsible for leading Module 3 on *Supporting Decision-Making with Strategic Foresight*, which is the focus of this working paper.

The paper is divided in four sections. Each section illustrates a critical action to strengthen decision-making through the use of strategic foresight.

The first section of the paper discusses **framing** the use of strategic foresight in government. For governments to improve their proactive and prospective natures, the use of strategic foresight must be inscribed within a broader anticipatory governance approach, which ensures that insights and visions of possible futures are matched with concrete actions in the present. Second, the working paper discusses ways of **building** strategic foresight systems, exploring the systemic elements that underpin the effective use of strategic foresight in government. In the third section, the paper introduces approaches and instruments for **fine-tuning** strategic foresight to existing opportunities and needs. For this purpose, it proceeds to discuss barriers and enablers that strategic foresight may encounter while being adapted and applied to specific contexts. Finally, this working paper presents concrete experiences of **doing** strategic foresight in specific areas, namely green and energy transition and equity and social cohesion.

Throughout the working paper, a variety of examples of practical applications of strategic foresight are displayed, both as case studies and methodological approaches. By sharing lessons learned and experiences from governments across the globe, as well as featuring diverse approaches to strategic foresight, this working paper offers benchmarks and guidelines to sustain the way forward for governments in building a competency centre in this area. Pursuing this path, the working paper concludes by suggesting areas of opportunity for PlanAPP to further improve the Government of Portugal's strategic foresight capacities.

2. Framing: paths for proactive and prospective governments

Strategic foresight approaches in government often take the form of exploration or sense-making activities about the future (Tõnurist and Hanson, 2020: 38). However, these features alone fall short of enabling government to take future-informed decisions and actions. This is known as the strategic foresight impact gap, where knowledge perceived and results generated through foresight activities are not integrated with policy action. The capacity to map the future must be transformed into action through "a collective process that aims to help set priorities, network and build common visions" (idem: 37). When effectively conducted, strategic foresight can be a critical driver to generate insight and knowledge in order to inform public sector changes. Strategic foresight can further be integrated under a comprehensive model for anticipatory innovation governance (AIG) that "emphasizes the importance of acting in the present with a future mind-set" (idem: 38). The opportunity to bridge the impact gap lies, therefore, in this mobilisation of strategic foresight under the perspective offered by anticipatory innovation governance.

This section introduces the AIG model developed as part of the OECD Observatory of Public Sector Innovation framework to capture relevant dimensions of public sector innovation. This model, which provides the analytical backbone, is referenced throughout this working paper.

2.1. Anticipatory innovation governance: Bedrock for strategic foresight use in government

Since governments have to cope with a rapidly changing world, strengthening a forward-looking perspective is essential for governments to anticipate crises and disruptions, and learn how to best navigate under these conditions. According to Tõnurist and Hanson (2020), there are five main objectives for the anticipation in the public sector:

— Decision making and planning under **uncertainty;**

— Dealing with **long-term trends;**

— Making sense of **complex, conflicting problems**;

— Responding to **novel societal and technological developments;** and

— **Risk avoidance** and the **cost of doing nothing**.

Factoring these drivers, governments can shift their attitude from reactive, which fails to address long-term systemic implications, to a proactive posture to ensure preparedness. In doing this, governments can become an active shaper and anticipator of possible futures, and explore present initiatives and policies that become catalysers for innovation. The use of risk assessment frameworks in governments around the world offer examples of how often governments have limited their approach to the calculation of potential losses and assumed a reactive stance towards the future. Albeit relevant risk registries have accounted for risks such as pandemics, climate change and energy crises, little in terms of action occurred before the risks became a reality (see Box 1). This situation partly emerges because "the concept of risk has become impoverished and one-sided", being treated as "an object which is to be managed", leading to an overestimation of losses since it is "related with assets possessed in the present, while gains lie in the

future", and even having risk-based decisions to be "narrowed to have can be calculated in monetary terms" (Nowotny, 2016: 66-67).

The OECD AIG model helps governments to bridge the impact gap between futures knowledge creation and their capacity to act in the present based on this knowledge (Tõnurist and Hanson, 2020). Bridging the impact gap requires governments to establish institutional functions and mechanisms in order to create demand for and provide the necessary mandates that allow governments to craft policy responses based on foresight interventions (Tõnurist and Hanson, 2020, Dal Borgo and Monteiro, 2022). The model can guide public administration, generate assessments to enable them to better institutionalise and embed strategic foresight, and support them in building and adapting governmental functions to facilitate organisational changes and targeted actions. This governance framework suggests that governments adopt the mechanisms of agency and authorising environment to equip themselves in order to address the impact gap (see Figure 1).

Figure 1. Mechanisms of anticipatory innovation governance
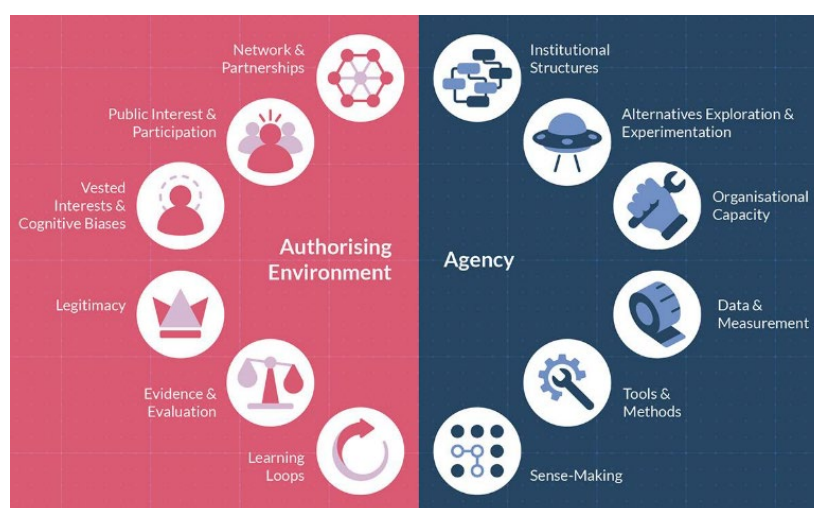
Source: (Tõnurist and Hanson, 2020)

Box 1. Future proofing probable risks with plausible scenarios

Prior to the COVID-19 pandemic, many OECD countries had already categorised pandemics as highly probable risks (OECD, 2018). However, there was very little government preparedness or action related to what a pandemic could actually look like in a plausible scenario, e.g. increased need for personal protective equipment and the impact of decreased public expenditure in healthcare (OECD, 2020a). Systems are usually not proactively prepared for these types of crises and disruptions, and even more so in relation to existential risks, i.e. risks that can threaten "the premature extinction of Earth-originating intelligent life" (Bostrom, 2013).

Without iterative processes to future proof existing risk assessments, governments struggled at the height of the pandemic to manage the systemic ripple effects of a large-scale health crisis e.g., the impact of school closures on students' mental health, digital alternatives for remote teaching, and the implications on gender equality with remote working.

Similarly, there is the case of climate change, which is repeatedly reported as a high-risk event which requires government proactivity to implement adaptive measures (IPCC, 2021). At present, ambitious priorities are indeed connected to the issue, while government-wide investment to reach those priorities are still deficient (de Coninck et al., 2018). At the same time, "climate change policy making is often dominated by efforts to minimise and control uncertainty", pushes for quantitative approaches and keeps at large the "lived realities of local people" (Mehta and Srivastava, 2020: 99).

Therefore, there is a call for approaches that embrace uncertainty, challenging top-down processes and repressive stances towards complexity while engaging with local communities (idem: 100). The importance of analysing the system as a whole – adopting systemic approaches, as this working paper sustains - is critical to understand the types of management and planning models that need to be in place for targeted investment and the attainment of goals. At another level, this option paves the way to the exploration of "practices of engagement and co-production between diverse stakeholders" to reveal "hidden and alternative perspectives" (idem: 108).

By adopting the OECD AIG model, strategic foresight can not only facilitate strategic conversations about the future, but also support governments to operationalise and systematise anticipatory information (see Box 2 for Finland's AIG assessment). Additionally, strategic foresight can be used in the context of development strategies, policy planning, thematic exploration, organisational strategic planning and cohesion creation for the whole of government. The main benefits of strategic foresight are then to identify challenges and opportunities, provide innovative solutions for different scenarios, stress-test and future proof strategies and policies, and finally to co-create shared visions (Tõnurist and Hanson, 2020). These interventions cannot be just one-shot interventions or adopt sectoral approaches. The proposal here is on the adoption of a systemic lens to strategic foresight. The following section introduces the contribution of systems approaches to the identification, understanding and shaping of strategic foresight.

Box 2. AIG assessment in Finland

Finland aims to become carbon neutral by 2035. However, the OECD assessment of the anticipatory innovation governance in the country found that there is still inadequacy in "systemic engagement with uncertainty" e.g. regulations and emissions reductions measures. Actions to address some of the issues identified in the OECD report touch upon "addressing cognitive biases of fiscal policy makers" and "building capacity at individual and institutional level" vis-à-vis "green budgeting practices that support anticipation" (OECD, 2022a; OECD, 2022c).

Finland has a long-standing history of institutionalising strategic foresight, granting it the title of having one of the most advanced foresight systems in the world. Nevertheless, the OECD report found that foresight activities in Finland are "not part of core government processes" and do "not directly contribute to strategic plans, innovation programmes and decision making in ministries" (OECD, 2022a: 91). For this, nine government functional actions were proposed by the OECD to systematically integrate AIG across the Finnish Government and enhance Finland's anticipatory capacity (Government transition function, Government planning function, Strategic steering function, Legislative function, HR function, Budgetary function, Open government function, Future and foresight function, Oversight function).

From these, two new functions were identified as necessary for the transition to a futures-oriented government administration:

- **Government Transition Function:** supports the transition of one political term to another and maintains consistency and continuity of long-term reforms, continuous and iterative learning to avoid the loss of know-how and insights in the process.
- **Government Planning Function:** looks into how governments analyse and diagnose emerging issues in order to assign these issues to those with the necessary resources and responsibilities to create demand and mandate for anticipation.

Source: Anticipatory innovation governance: towards a new way of governing in Finland

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2.2 Systems approaches for strategic foresight: Basic notions and practical applications

Governments confronted by transformations of unprecedented scale, tempo and interdependence are struggling to cope with the complexity and uncertainty that constitute the new contexts in which they are

required to act (OECD, 2017: 12). Rapid, unexpected, and transversal changes, such as the volatility or pace in the movements of persons, goods and data at the global level or the abrupt emergence and generalisation of disruptive technologies, have put traditional approaches to social problems, policymaking processes and economic regulatory development under significant strain (OECD, 2020b). Governments are, thus, compelled to embrace approaches able to cope with problems that are often more *wicked* than *complicated* (OECD, 2017: 45-49).

Traditional analytical tools and problem-solving methods display inconsistencies, inefficiencies and inabilities to account for the increasing complexity and uncertainty that now call for the adoption of innovative approaches in government. While confronted by these new realities, traditional approaches to decision-making appear to be insufficient and more systemic approaches are increasingly being adopted to meet the challenges of globally interconnected societies and the impacts of unanticipated events (idem: 125). The OECD report on *Systems approaches to public sector challenges* (OECD, 2017) offers an initial and exploratory work to the application of systems thinking to policymaking. Grounded in this contribution, this section highlights the common and basic notions that characterise systems' approaches, emphasising their potential application to strategic foresight.

Systemic approaches call for policymakers to embrace uncertainty and complexity, and not to repress them. They also contribute towards a more sensitive approach to policymaking, more mindful of a variety of perspectives and inputs instead of government self-centred approaches. Systemic approaches aim to understand the relevance of interdependence and co-creation among stakeholders, in contrast to traditional approaches that tend to delineate policy issues to concentrate on separate parts (or silos) instead of grasping the whole system. Under this definition, the creation of public value (OECD 2019c) defines and sustains the specificity and the purpose of public sector, bundling together the interactions among the stakeholders engaged in co-shaping the system (Mazzucato and Ryan-Collins, 2019). .

Strategic foresight recognises the complexity and uncertainty of the world we live in and place *wicked problems* at the centre of its concerns – and this orientation has called for systems-oriented or ecosystem approaches (Amanatidou and Guy, 2008; Dufva and Ahlquist, 2015). These approaches are suited to cope with processes and challenges across governance levels that involve the interaction of multiple actors (Granstrand and Holgersson, 2020; Trischler and Charles, 2019). They also point to transformations that require significant time lengths and/or that emerge suddenly as novelties and disruptions.

Despite their benefits for policymaking, both strategic foresight and systemic approaches frequently struggle with issues of legitimacy in the implementations of their outputs (OECD, 2017: 129). The application of a *systemic lens* to strategic foresight is an opportunity to improve its relevance and usefulness for policymaking, especially when this "systemic turn" (Braun and Könninger, 2018) can go beyond its sense-making abilities and uses generated knowledge to take action. The potential of aligning strategic foresight with systemic approaches can prove particularly valuable for policymakers, given its specific ability for "dealing with complex modern policy issues in a structured way" (Kimbell and Vesnic-Alujevic, 2020: 97). It would be useful nowadays to transform systemic approaches into day-to-day practice to guide decision-making and translate decisions into policy action (OECD, 2019a: 130).

To facilitate the combination of systemic approaches and strategic foresight in government, Table 1 presents key notions that define systemic approaches (Baecker, org. 2021; OECD, 2022e; Simon 2020) and attempts to re-articulate their specific implications for strategic foresight. The table then translates those implications into "prompt questions" to support governments to further explore the strategic foresight context. Finally, the table also provides methodological suggestions to support the initial adoption of strategic foresight with a systemic lens.

Table 1. Systemic lens for strategic foresight

Key notions of systemic approaches	Implications for strategic foresight	Prompt questions	Tools to start
Systemic approaches account for the uncertainty and complexity of social and political problems. These approaches sustain the need for agile, adaptive and experimental mind-sets and courses of action to keep up with the ongoing changes.	– Strategic foresight embraces uncertainty and complexity in its analysis of complex challenges. – Strategic foresight involves a cultural change to support and disseminate longer-term and forward-looking attitudes and habits among stakeholders and users. – The design and delivery of strategic foresight interventions rely on agile and adaptive strategies to navigate complex and uncertain environments. – Methods and tools to cope with uncertainty and complexity should be available to public administration. – Safe spaces to challenge assumptions and experiment with bold and unconventional ways should be provided to strategic foresight activities. – Mind-sets, capacities and skills at the individual, organisational and systemic level are required to expand actors understanding, appetite and ability to deal with the future (e.g. futures literacy).	– Are the appropriate mixes of frameworks, methods and tools to explore the uncertainty of the future being selected and used? – Are the learnings and knowledge coming from strategic foresight interventions to deal with complex challenges being circulated and communicated? – Are there initiatives to disseminate and promote forward-thinking and longer-term awareness among stakeholders? – Are agile and adaptive courses of action being adopted in strategic foresight initiatives? – Does strategic foresight benefit from the venues, resources and time required to settle safe spaces? – Does strategic foresight provide a series of initiatives to build capacities and improve the skills in the public sector?	– Using the Iceberg Model included in the Systems Innovation Toolkit (SI Network) can help to figure out the invisible streams that shape wicked problems. This tool tries to make complexity explicit by depicting it as a series of layers that sit beneath the observable realities. – For the purpose of promoting co-ordinated changes across the relevant layers of the futures research, the use of Causal Layered Analysis provides a technique to frame those layers exploring and knowing the "vertical dimension of futures studies" (Inayatullah 1998: 815).
Systemic approaches account for the multiple actors and multiple dimensions present in social and political challenges. The consideration of linear and simplified relationships between inputs and outputs is balanced in favour of attention to bidirectional and multidimensional interactions.	– Need to map stakeholders' existence, interests, perspectives and expectations about the future. – Strategic foresight should be sensitive to the convergences, conflicts and negotiations occurring at the system's level about possible and desired futures. – Even at the level of thematic projects, strategic foresight should escape lock-in in single areas, sectoral silos or intra-organisational points of view.	– Are the stakeholders in a given problem area being mapped and involved in strategic foresight activities? – Are strategic foresight activities designed to take into account the heterogeneity, differences and eventual conflicts existing among stakeholders? – Do strategic foresight initiatives allow for the emergence of contrasting visions about the future?	– The Stakeholder Mapping tool from the Visual toolbox for system innovation (Climate-KIC) can be used as a way to gather a comprehensive and systematic account on the stakeholders on a given challenge. – The need to deal with complex challenges appeal to the adoption of tools for engaging large number of stakeholders and steer improvements towards a shared vision of change. For that purpose, the use of Systems Leadership, advanced by

	– Strategic foresight must seek the mandate and legitimacy to cut across existing silos and break the ceilings in public administration. – The use of devices of mediation to generate or increase the trust between stakeholders is highly commendable.	– Are strategic foresight initiatives and results being communicated to all relevant audiences, taking into account accessibility and inclusion? – Are strategic foresight practitioners paying attention to the clarification of their mandate and the improvement of their legitimacy, especially at the level of policymakers and senior officials? – Are strategic foresight activities being carried over to promote trust and bonding among stakeholders?	the Harvard Kennedy School, provides a tool to apply individual skills for collaborative leadership, tactics of agreement building in communities, and ways to grasp insights at the level of systems.
Systemic approaches are sensitive to self-organisation, synergies and feedback loops. These approaches focus on the collaboration and co-creation involving multiple actors and components. Attention is being paid to emergence, iteration, recursive effects and path dependency.	– Strategic foresight pays attention to cross-sector and cross-organisational synergies and influences in accordance with the nature of the complex problems being addressed. – The integration of mechanisms for self-reflexivity (e.g. detection of biases and blind spots) is relevant for strategic foresight, right from the onset of its initiatives. – Feedback channels, especially for stakeholders to report back in the design, operationalisation and evaluation of its interventions, are decisive for strategic foresight interventions. – Strategic foresight promotes integrity, openness, accountability and transparency as means to leverage the participation and engagement of stakeholders. – The adoption of co-creation methodologies and of formal and informal processes of consultation, deliberation and/or participation are essential to activate and expand stakeholders' contributions. – Strategic foresight ensures that its activities and results are relevant for its users, centred on their needs and expectations.	– Are cross-sectoral and inter-organisational initiatives being adopted in strategic foresight exercises? – Does strategic foresight practitioners use self-reflexive activities to uncover and control biases and blind-spots, starting with their own? – Are the strategic foresights exercises creating structured occasions for stakeholders to provide their feedback at all stages? – Are the processes and products of strategic foresight aligned with the principles of openness, integrity, transparency and accountability? – Does strategic foresight design and implement its initiatives goals and processes taking into consideration the importance of stakeholders' interests, contributions and reactions? – Are strategic foresight exercises using collaborative and participatory methodologies all along their journey? – Does strategic foresight integrate the assessment and experiences of users regarding its activities and results?	– Using the Causal Loop Diagram from the Systems thinking: An Introductory Toolkit for Civil Servants (Government Office for Science, UK) enables the visualisation of the elements and actors that are causally interrelated in a system. – OPSI Toolkit Navigator gathers a whole set of tools to create and improve stakeholder engagement. Those instruments endorse open government principles and promote their use in innovative initiatives.

	– Strategic foresight initiatives keep track of the impact of its actions and outputs, as well as of its users' experiences and evaluation. – Strategic foresight is sensitive to emergence, avoiding to stick just to the prevalent worldviews and interpretations and expanding, while questioning, their ways to perceive and appreciate the environment. – The establishment of learning loops, curating and re-affecting the knowledge generated in its interventions is relevant for strategic foresight practitioners and teams.	– Are strategic foresight practitioners sensitive to emergent phenomena and willing to expand and adjust the concepts and methods used to monitor the progresses and consequences of their interventions? – Does strategic foresight units manage the knowledge being generated in their activities, starting with the lessons learned with their successes and failures, and upload those insights for their next iterations?	
Systemic approaches understand the holistic nature of systems and their purpose. The creation of value is accounted as expression of the fitness-to-purpose of actors and components in relation to the system as a whole.	– Strategic foresight (re)frames the goals and the design of its initiatives from a value-led perspective taken at the societal level. – For strategic foresight, challenges are defined taking into account the whole ecosystem of the problem. – Strategic foresight takes into consideration the impacts of its interventions at system level. – Strategic foresight aligns with the purpose of public sector, aiming at the creation of public value. – Prospective activities and results are neither innocuous, nor neutral: strategic foresight contributions to and impacts in public policy must be assessed against the definitions of value-led futures. – Strategic foresight has to be clear on the purpose of its interventions, highlighting the challenges and benefits that arise with discussions and actions around societal futures.	– Are strategic foresight interventions being designed with a perspective centred on societal purpose, starting with the directions set by policymakers and public sector managers that commission and consume its outputs? – Are the definitions and prioritisations of problems solely based on the perspective of single organisations or sectors or they account on the broader landscape offered by multi-actors insights and inputs? – Are strategic foresight activities and results monitored, assessed and evaluated in terms of their impacts to distinct stakeholders and, especially, to the whole system? – For its exercises and activities, is strategic foresight carrying on the relevance of multiple dimensions (political, economic, environmental, etc.) to diagnose challenges, carry on initiatives and evaluate impacts? – Are strategic foresight practitioners searching to increase the contribution and recognition of their activities to public sector's goals and purposes?	– The Value Network Mapping (VITO-Nexus, Climate-KIC) is a visual method that helps to grasp how values connect in a given system. This tool also provides insights on the system as a visual network of roles and relations. – As an approach to assess the impacts on specific stakeholders as well as transversally to the system, the use of Ouctome Harvest may be helpful. The European Union-SRSP's Programme for Economic Advancement and Community Empowerment (EU-PEACE) Evaluation suggests a multi-dimensional approach in its tool, which is designed to assess processes of change in complex contexts.

– Are strategic foresight interventions being explicit about and monitoring the value generated in accordance with their envisaged purpose(s) – as well as with the constellation of interests present in society?

For strategic foresight to become integrated and remain relevant in the public policy context, an effective ecosystem approach can define and address "a set of mutually reinforcing and reliant ingredients that together provide the type of ongoing, long-term thinking required for today's policymaking" (SOIF, 2021: 16). The School of International Futures has identified such features from an investigation conducted around the globe (see Box 3).

Box 3. Features of effective systemic foresight in Governments

The School of International Futures (SOIF) has conducted research around the globe to understand the ways governments created, adopted, and sustained their foresight ecosystems as well as identified features that support the integration of future-oriented perspectives into policymaking. From the research, which includes eight case studies (Canada, Finland, Malaysia, Netherlands, New Zealand, Singapore, the United Arab Emirates and the United States of America), SOIF identified a common set of features that support countries in adopting prospective, resilient and proactive foresight ecosystems. "These features need to be seen as mutually reinforcing and reliant ingredients that together provide the type of ongoing, long-term thinking required of today's policy-making" (SOIF, 2021: 4). These features can be described as follows:

— **Culture and behaviour:** The importance of stimulating strong connections in the ecosystem, especially with policymakers, as a way to build shared commitments and ownership.
— **Processes:** The activities that provide policymakers common guidelines from which to start strategic foresight, including the openness to stakeholder participation and available methods and tools.
— **Structures:** The importance of creating centre-of-government units to support strategic foresight, to adopt strategies to build capacity in organisations and departments, and to provide resources to all these initiatives.
— **People:** The need to have the right skills and expertise, ensuring access to talent and providing training of public servants and policymakers.

The combination of these features varies in accordance with context, interests and needs. The high-level direction, support and investment given to these features has, nonetheless, the potential to create and maintain a "healthy ecosystem" (idem: 4), i.e. an ecosystem that creates demands for strategic foresight, ensures the quality of its supply, and nurtures itself over time.

Source: Features of effective systemic foresight in governments globally

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The quest for the ingredients of effective strategic foresight has moved the OECD to identify the "key components for building a more comprehensive strategic foresight system in government and designing successful foresight interventions, drawing on best practices from around the world" (OECD, 2019b: 1). This kind of systemic approach to strategic foresight contrasts with approaches based on single-shot, one-off projects or that conceive public sector organisations as self-contained units. The next section is devoted to a brief discussion on the key elements that "enable a sustained and ongoing practice of strategic foresight and its widespread application to policy-making" (idem: 5).

3. Building: Systemic elements for effective strategic foresight

The approach to strategic foresight as a purposeful intervention highlights the necessity of its embeddedness into decision-making processes to generate value (OECD, 2021a: 3). For strategic foresight to strengthen the prospective and proactive capacities of policymaking, governments need to put in place, nurture and improve the elements required for building a comprehensive strategic foresight system, acquiring future-proof instruments to cope with complex challenges, and designing and deploying interventions using strategic foresight (OECD, 2019b).

This section explores the five elements identified as playing critical roles in ensuring that strategic foresight is able to create high-quality processes and products to embrace futures opportunities and contingencies

and to ensure that policymakers are applying those contributions to bring value to society. These elements are: demand and mandate; capabilities and skills; institutional arrangements; embeddedness in the policy cycle; and feedback and learning loops (OECD, 2019b).

For each systemic element, the analysis in the paper was shared with the Government of Portugal to improve its awareness, ability to navigate and application in practice of strategic foresight. A series of examples are used to illustrate these elements in case studies and use cases, which are intended to give direction, provide learnings, and lead PlanAPP towards identifying context-specific alternatives for Portugal.

3.1 Demand and mandate

Government leaders are vital actors to champion the demand and use of innovative methodologies that have the potential to support and improve policy analysis and decision-making processes. According to Howlett (2015) "policy analytical capacity" or supply is highly dependent on the demand to conduct robust research and analysis. Demand and supply are interdependent. Thus, for strategic foresight to be successfully undertaken, the "supply of qualified researchers" and practitioners to conduct interventions as well as the quantity - and quality - of data required for the analysis need to be made available through sustained demand – and its associated mandates. For its part, demand is understood here from a holistic perspective based on collective expectations and societal needs, and not from an atomistic perspective serving specific individuals or groups.

The adoption of foresight by government requires clear mandates and allocation of responsibilities within public sector organisations. The OECD states that "sustained demand for foresight from senior levels in government and the public service can help to ensure that the necessary institutional changes, resource allocations, and practices are put in place to enable the quality and frequency of foresight required for sound policies" (OECD, 2019b: 5). Legal instruments and regulatory oversight bodies (Renda, Castro and Hernández, 2022) are additional mechanisms to lay institutional foundations for sustained demand and legitimate practice of foresight with a whole of government approach. This is in line with principles from the OECD *Recommendation of the Council on Regulatory Policy and Governance* to strengthen "co-operation across policymaking departments and regulatory agencies as well as between national and sub-national levels of governments" (OECD, 2022b: 11).

With regards to sustained demand for foresight, Greenblott et al. (2018) provide a detailed background of the application of foresight methods in the United States Government. The authors explain that in the 1980's, the U.S. Environmental Protection Agency (EPA) offices were experimenting and exploring a variety of foresight tools, but that deficient demand caused many of the projects to be a "one-shot" activity without further iterations. Demand for more foresight work was picked up by various U.S. advisory boards in 1995, including the EPA's Science Advisory Board, which led to the requirement of institutionalising strategic foresight and aligning it with the EPA's strategic planning efforts. As such, one of the objectives of the EPA's "Strategic Foresight Pilot Project" was to increase demand by demonstrating strategic foresight usefulness to inform planning and management decisions. Two initiatives were created by EPA In order to build capabilities and communicate the usefulness of strategic foresight:

- A multidisciplinary "Lookout Panel" with representatives from EPA's headquarters to conduct horizon scanning. Findings from horizon scanning activities conducted by the panel are shared with decision makers and leaders, and reused as internal guidance material to develop EPA's strategic plan.
- An agency-wide "Strategic Foresight Community of Practice" open to all EPA staff which builds internal capacity and demand, improves foresight capabilities with the support of external experts, and improves internal and external collaborative practice.

However, research has shown that EPA still struggled with the challenge of systematically incorporating foresight in their planning and management processes. Greenblott et al. (2018) conducted semi-structured interviews with representatives of 19 US Federal agencies to explore how this challenge is addressed in government. From an institutional arrangement and resources perspective, interviewees suggested two main activities. On one side, to build in-house capacity to avoid overreliance on contractors. On the other, develop a "foresight ecosystem" to create linkages, scout foresight efforts, and build foresight support beyond organisational silos. Furthermore, government-wide communities of practice, such as the Federal Foresight Community of Interest (FFCOI), were seen as important initiatives to increase the demand and sustainability of foresight in the US Federal government.

In 2020, Spain created the *Oficina Nacional de Prospectiva y Estrategia* (National Foresight and Strategy Office). For that purpose, actions were taken to ensure an explicit leadership buy-in and putting in place a legal instrument ([Royal Decree of the 27th of January 2020](#)), This structure to ensure demand and strengthen the mandate of the Office was inspired by consolidated systems around the world, such as those in place in Singapore and Finland, where strategic foresight units are at the centre of government and close to senior decision makers (see Box 4 for details).

With the demand and mandate to undertake large scale foresight exercises and research in 2021, the Spanish National Foresight and Strategy Office published the report *España 2050: Fundamentos y propuestas para una Estrategia Nacional de Largo Plazo* (Spain 2050). This initiative aimed to improve the understanding of social, economic and environmental challenges and opportunities that the country will face in the coming decades. The report allowed the Office to generate dialogues with a large group of stakeholders and consolidate a conceptual framework for a long-term national strategy.

Furthermore, it introduced the usefulness and purposes of foresight to government and society and demonstrated academic rigor while building future scenarios. Indeed, "Spain 2050" worked towards creating a long-term vision for Spain based on empirical evidence (mostly quantitative, however, also qualitative), including the comparative analysis of the distinct realities of the 27 EU Member States. From these indicators, eight countries become points of reference for Spain to state and monitor the attainment of its 50 objectives by 2050.

Box 4. Demand and mandate in the Spanish National Foresight and Strategy Office

Established in 2020, the Spanish National Office of Foresight and Strategy leads the foresight work of the Government and co-ordinates foresight projects across ministries involving civil society. With the necessary support and leadership buy-in, the Office has been mandated to ensure that long-term analysis is recurrently undertaken across the Government and that its work is seen as a credible and relevant source of knowledge across ministries.

The Office works within and with the Government cabinet and directly reports back to the Chief of Staff and the President. The Office also works closely with the various ministries of government, enabling it to influence decision-making, policy development and incorporate long-term perspectives into strategies. The Office has the mandate to propose and send briefing reports to the President, but occasionally the President may also ask for the development of reports on specific topics of interest.

The majority of the work developed by the Office is for internal consumption and use. It has the official mandate to develop a long-term vision and incorporate strategic thinking in the President's and Ministerial Council's decision-making processes. Within flagship activities, this is achieved by delivering weekly policy briefs about diverse topics of national interest, and which are closely debated with the President.

The strategic foresight work and efforts developed are equally aimed to reach media and public opinion, and to influence internal activities of government. For example, during the first months of each year (January to August), internal work is focused on preparing deliverables and short reports for the President and Ministers in order to support decision-making. During the second part of the year (September to December), the focus is placed on activities for the general public, such as the podcast series "Build your

future" and "Dialogues of the Future", a series of roundtables that involved over 500 speakers and thousands of citizens across 17 autonomous regions of Spain.

3.2 Capabilities and skills

The critical capabilities and skills that are needed to adopt, strengthen, and steward strategic foresight in government are considered in this working paper along with a structured display of levels: systemic capabilities, organisational capabilities, individual capabilities, and social imaginaries (see Figure 2).[1] Governments rely on, summon and engage with the capabilities and skills from these four levels in their strategic foresight activities. In this context, relevant capabilities are those that support action, create understanding of and support ways to cope with change, contributes to public sector' values, and that, guided by futures thinking, generate learnings and iteration at the individual level, the organisational level and the system at large (Dufva, Könnölä and Koivisto, 2015: 101). Distinct dimensions of value-creation are indicated for each level (Osborne et al., 2022), since capabilities and skills are aligned with specific purposes at each level.[2]

The set of capabilities and skills selected, although not exhaustive, relies on extensive surveys of actual experiences and cases from the global community of foresight practitioners and units (Tõnurist and Hanson, 2020; OECD, 2019b; OECD, 2021b; OECD, 2022a). The series of peer-to-peer meetings that OPSI organised with teams and units from distinct contexts (Finland, Flanders Germany, Lithuania, Spain) also provided extensive and first-hand insights to complement and detail those contributions.

Figure. 2. Levels of strategic foresight and their respective capabilities and skills

Systemic level	**Social imaginaries**
Strategic foresight embedded in public policy governance, adding value to society (and, in particular, to end-users). 1. Public governance standards and regulations. 2. Flexible rules and agile processes. 3. Institutionalisation, co-ordination and integration into policymaking 4. Exchanges and co-creation among multi-actors. 5. Open communication and sharing of information and knowledge.	*Strategic foresight embedded in collective representations and behaviours, adding value to culture.* 14. Beliefs and biases about the future. 15. Public valorisation of forward-looking perspectives and dispositions. 16. Futures literacy.

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[1] This working paper has a specific focus on the requirements and implications of "capabilities and skills" to the effective use of strategic foresight in Government. Henceforth, the adoption of a multi-level frame means that, for each level, capabilities and skills are emphasised with respect to their active contribution to the definition and positioning of strategic foresight in government and its value-creation purposes. Alternatively, Dufva, Könnölä and Koivisto (2015: 103) suggested a multiple layer approach that "analyses the contributions of foresight to knowledge, relations and capabilities on four layers: landscape, system, organisation and individual" (idem: 100). While departing from opposite sides (i.e. capabilities and skills used for strategic foresight vs strategic foresight contributions for knowledge, relations and capabilities), these approaches can be explored for their complementary potential.

[2] The conceptualisation and labels used here for the identification and clarification of value-creation dimensions benefited from the contributions from Osborne et al., (2022); changes were introduced in this working paper that adapt their original definitions to the particular context of strategic foresight, since those authors operated originally on the public service system. The OECD has advanced a comprehensive review of value-creation processes and mechanisms in the public sector (OECD, 2019c).

Organisational level

Strategic foresight embedded in organisations, adding value to the design and execution of its processes and interventions.

6. Leadership style and sponsorship.
7. Organisational structures and management processes.
8. Repositories and applications of tools and methods.
9. Talent attraction, training and retention.
10. Learning loops and evaluation mechanisms.

Individual level

Strategic foresight embedded in personal behaviours and mind-sets, adding value to practices.

11. Workplace design and professional empowerment.
12. Skills, practical ability and personal attitudes.
13. Rewards and incentives.

This particular scheme of levels offers a comprehensive approach to the identification and mobilisation of action-oriented and value-creating capabilities and skills for strategic foresight in government:

- At the **systemic level**, the purpose of strategic foresight is the creation of value for its end-users (e.g. policymakers), through the improvement of decision-making processes and support in the design and co-creation of public policies. Flexible rules and agile processes can be relevant here.[3] For positive outcomes to be nurtured through these capabilities and skills, strategic foresight embeds in the surrounding public governance environment.

- On the **organisational level**, capabilities and skills are embedded in public sector organisations and add value to the processes of design and execution of strategic foresight interventions. Strategic foresight can benefit from those organisational capabilities and skills that associate with the adoption of innovative methods and tools, introduce future-orientations into leadership, or adopt measures to attract, train and reward skilled specialists (e.g. specific curricula).

- At the **individual level**, capabilities and skills for strategic foresight are related both to the objective characteristics of individual workplaces and to the internalised attitudes and behaviours of public servants (see Box 5). The ability to act, learn by doing and have confidence to participate in strategic foresight is important (Dufva, Könnölä and Koivisto, 2015: 105). Also important are the attitudes and behaviours assumed by public managers and servants towards strategic foresight, i.e. their foresight styles (see Box 6).

- **Social imaginaries** permeate all the levels, while at the same time constituting a specific area in itself. "The social imaginary is not a set of 'ideas'; rather it is what enables, through making sense of, the practices of a society" (Taylor, 2003: 1). For the particular case of strategic foresight, social imaginary has a dual nature: at the same time that beliefs, biases and blind spots shape the future

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[3] The OECD *Recommendation for Agile Regulatory Governance to Harness Innovation* calls upon governments to adapt governance frameworks and regulatory approaches so that they are forward-looking. A range of options is suggested for that purpose, such as conducting horizon scanning and scenario analysis, anticipating regulatory implications, and fostering iterations for continuous learning. A case in point on proposing agile regulatory governance can be found in the United Kingdom. The Regulatory Horizons Council (RHC) provides expert advice on regulatory reform to the government by conducting horizon scanning for technological innovation and by identifying how the economy and society can benefit from new and disruptive technologies. Ultimately, the recommendations on broad priorities for regulatory reform consider the rapid and safe introduction of innovative products and services as well as the implementation of new technologies for the well-being of citizens and the environment.

perception and appreciation, strategic foresight itself may play an active, albeit limited, influence in shaping the collective representations and attitudes towards the future.

Qualified and proactive public managers and servants are critical in ensuring that strategic foresight is integrated in day-to-day practices, disseminated in its organisational culture, and become rooted in governments' core functions. These relationships are consequential to the upskilling of competencies of public managers and servants, especially strategic foresight practitioners and analysts. Strategic foresight capabilities and skills are required to be considered and embedded in governments (see Box 5). Additionally, strategic foresight capacity building in governments needs to take into account cognitive capabilities for foresight and the ways individuals' stand towards changes (see Box 6).

Box 5. Foresight skills

Building capacity in governments for strategic foresight means to recognise, sustain and steward the competencies essential for a process of transformation to happen. These competencies are associated with the level of knowledge, practical abilities or ethical principles that constitute the professional requirements of strategic foresight (Hines et al., 2017). The broad collaborative exercise promoted through the Association of Professional Futurists contributed to the proposal of its Foresight Competency Model (Hines et al., 2017: 11-12), which identifies six core competencies of foresight:

1.   **Framing**: The capacity to scope the project and its timeframe, map the critical topic in its environment, and diagnose the current conditions regarding the presence and engagement of stakeholders.

2.   **Scanning**: The competence to explore signals of change on the selected topic, gather and structure evidence, and evaluate the quality of the data.

3.   **Futuring**: The ability to question pre-conceived expectations and challenge assumptions about the future, generate alternative futures, and forecast "a baseline future" deriving from horizon scanning and trend analysis.

4.   **Visioning**: The skills of making sense of the implications of alternative futures, sustaining the definition of and commitment to a preferred future, setting specific goals and facilitating processes to create a shared vision.

5.   **Designing**: The capacity to develop prototypes, artefacts and experiences that enable the exploration of alternative futures and visions, while contributing and mediating a co-creative dynamic in the process with the stakeholders.

6.   **Adapting**: The ability to enable organisations to strategise for the future, including the definition of goals and actions required for that purpose – and to monitor and assess indicators to navigate uncertainty.

This model enables the identification of gaps and strengths, the definition of priorities and action plans, and the constant assessment and review of the developments observed in these competencies at any level (idem: 18-19). In particular, this proposal can be used to communicate needs in terms of recruitment and promotion of public servants, develop curricula and training methodologies, monitor human resources (e.g. measure performance) or guide careers (idem: 14-15).

Box 6. Styles of foresighting

The strategic foresight competency is not always applied under identical circumstances. Far from being universal and with immutable attributes, strategic foresight competencies vary in range and quality depending on their confrontation with changes and constraints that the context imposes at any moment. For this reason, the notion of foresight styles is used "to describe the variety of behaviours ensconced in our human ability to plan and visualise the future and how they react to external change" (Dian, 2003: 59).

The attitudes assumed when confronted by change influence the kind of future awareness. Making explicit the scale of reactions to change, this proposal allows for the identification of the multiple ways to imagine the future and to approach its implications for the present.

The six styles of foresighting are defined in accordance with their thinking processes, temporal orientation, activity orientation and structural orientation (idem: 63):

1.   **Futurist**: Puts the emphasis on the perspective about the future, with an ability to detect precociously the breakthroughs and trends and a propensity to share their insights about possible futures.

2.   **Activist**: Acts to assure that desired futures start being built in the present, being less inclined to just study the opportunities and threats.

3.   **Opportunist**: Shows a noteworthy ability to navigate the present and adapt constantly to keep in track with the interventions, although at the cost of adhering to short-term goals and being highly exposed to swift changes of environment.

4.   **Flexist**: Acts for the integration of new ideas, tools and solutions in the present, ensuring the mobilisation of support to enable change to happen.

5.   **Equilibrist**: Highlights the importance of balance, trying to keep initiatives or organisations running while change is occurring, even if this penchant makes them also prone to "keeping quiet" or "putting up with things".

6.   **Reactionist**: Sees change as a survival threat, while allowing to keep the bold attitudes from other styles under constant check and providing them with realistic hints.

Understanding these multiple stances towards change helps to map the reactions towards the future, and strategic foresight interventions in particular, and to act upon them with appropriate methods and strategies. Depending on each style's specific way of addressing the future, solutions can be envisaged to debunk their diverse biases and blind spots, to gather their enthusiasm or instead to control for excessive expectations, or to match action-oriented attitudes with speculative exercises. At another level, the exploration of the interaction among these styles at the scale of organisations or units, searching for the synergies that emerge from their cross-checking and cross-stimulation, can provide positive outcomes (Gary, 2009; Laan and Erwee, 2012).

3.3 Institutional arrangements

Barley and Tolbert (1997) define institutions as "shared rules and typifications that identify categories of social actors and their appropriate activities or relationships". Furthermore, the process of institutionalisation has an essential component towards setting structures and conditions for action. Therefore, institutionalising strategic foresight builds on and encourages a strong proactive element since hypothetical futures will need to be connected to government strategic agendas and policy development processes. The study conducted by Greenblott et al. (2018) highlights, among the institutional arrangements, practices such as distribution of resources and recruitment of practitioners (e.g. the use of contractor support to provide methodological expertise and contribute to the development of workshops and research).

The relevance conceded to institutionalisation is consistent with the approach adopted in the report prepared by the School of International Futures (SOIF), which sought to identify how eight countries (Canada, Finland, Malaysia, Netherlands, New Zealand, Singapore, the United Arab Emirates and the United States) integrated and sustained long-term thinking for policymaking systemically across government (see Box 3). The United Arab Emirates' Dubai Future Foundation is an example of a unit created to "institutionalise futures work and deliver initiatives around knowledge sharing, imagination, capacity building and future design" (SOIF, 2021: 68).

Additionally, most of those countries were shown to have effective and recurrent practice of foresight across government. However, some lacked a connection with the policy arena, such as Malaysia, whose

foresight activities in the President's Council of Advisors on Science and Technology and the President's Council on Jobs and Competitiveness are not yet institutionalised into a "policy-making framework". The report explains that Malaysia is seeking to address this issue with the National Policy on Science, Technology and Innovation (STI) (2021-2023) and the 10-10 Malaysian Science, Technology, Innovation and Economic (MySTIE) Framework.[4]

The report additionally introduces the role of legislation to integrate foresight into policymaking and its importance to set "requirements for long term thinking" in governments. Some examples are the Public Service Act 2020 (New Zealand), and The Well-being of Future Generations Act 2015 (Wales). Similarly, in Lithuania the Law on Strategic Governance (2020) was a driving force for institutionalising strategic foresight in the country and developing the Lithuania 2050 project (see Box 7).

In terms of successful strategic foresight institutionalisation at the centre of government, Singapore is one of the most referenced examples. The South-east Asian country has a long-standing history of building a foresight culture across society and within their public service. Choo and Fergnani (2021) specifically address this historical aspect of Singapore's institutionalisation efforts and present the five crucial factors that supported the adoption and institutionalisation of foresight practices in Singapore:

- *Institutional entrepreneurs*: the existence of committed public servants and managers who acted to embed foresight approaches in the government environment, first within the Singaporean military, subsequently in the Public Service division and, finally, at the Prime Minister's Office.

- *Elite networks*: the networks in which the institutional entrepreneurs sought leadership support and agency.

- *Professional background*: the expertise of institutional entrepreneurs surrounding military strategy, economic proficiency and policymaking experience.

- *Construct of vulnerability*: the way through which institutional entrepreneurs drew upon Singapore's geopolitical vulnerability to "legitimize the use of foresight" across government.

- *Resonance of foresight processes*: the institutionalisation of foresight should be tailored to regional needs and to the needs of those that will engage in foresight interventions. In Singapore, for example, scenario planning alone was not seen as sufficient to address and "foresee disruptive shocks", particularly to issues of geopolitical security surrounding the region. The alignment of foresight with military strategy and information technologies was useful for Singapore to "understand the impact of uncertainties" and be "able to prepare for the occurrence of catastrophic events" (Choo and Fergnani, 2021).

Box 7. Institutional arrangements in Lithuania's Government Strategic Analysis Centre

The Government Strategic Analysis Centre (STRATA) is a dedicated Lithuanian unit responsible for carrying out strategic foresight activities and projects. From a whole of government perspective, STRATA was created in 2019 to strengthen evidence informed decision-making mechanisms (OECD, 2021a). In 2020, the Reform of Planning and Budgeting created the Law on Strategic Governance, which defined a

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[4] The 10-10 Malaysian Science, Technology, Innovation and Economic (MySTIE) Framework "aims to generate shared economic prosperity across the diverse ecosystems in the country and shift Malaysia up the global innovation chain" (Academy of Sciences Malaysia, 2020: 9). The framework is derived from a flagship initiative called *Envisioning Malaysia 2050*, which identified and integrated 10 key socio-economic drivers with 10 global leading science and technology drivers. The systematic and ecosystem approach of the framework works to incorporate collaborative partnerships in order to ensure future-proof sustainable development. Future-proofing through regular foresight activities is one of the main steps towards guaranteeing a resilient STIE ecosystem (Academy of Sciences Malaysia, 2020)

new model of planning system documents vis-à-vis national and regional planning processes, stakeholders in the strategic governance system, and management principles. Seeking to facilitate the implementation of the Law on Strategic Governance, the Strategic Governance Methodology was approved in 2021. The legal basis of the Law on Strategic Governance was a driving force to implement and institutionalise strategic foresight in the government of Lithuania.

STRATA is at the centre of the whole process of Lithuania's national strategic agenda and is aiming to become an "evidence informed policy-making competence centre". The core activities cover ex-ante and ex-post evaluation, evidence and development, and strategic foresight. Together with the OECD, STRATA concluded a project on "evidence based policy-making and evaluation at the centre of government". One of the recommendations of the report discusses precisely the institutionalised strategic planning system in Lithuania and, in particular, the lack of a futures/foresight perspective. The Law on Strategic Governance requires STRATA to ensure that its strategic foresight activities inform and support parliamentary and governmental strategic agendas, documents and action plans. STRATA was planned as an evidence provider for decision making processes. Furthermore, in terms of usefulness, strategic foresight was intentionally combined with governmental strategic planning activities and methods.

Lithuania 2050

Out of these governmental strategic planning activities, STRATA in collaboration with the Office of the Government began to develop the project "Lithuania 2050", which aims to "set out the vision for the long-term state progress, state development guidelines, and the desired impact indicators reflecting changes in the social economic and environmental state of play". Lithuania 2050 is a planning document at the strategic level which comprises state strategies, national agendas, national progress plan and Comprehensive Plan of the Territory of the Republic of Lithuania. This project is one of the top-level strategy documents for the country and owned by the Prime Minister. STRATA plays a decisive role in the whole process and, for the first time, the centre is concomitantly building its internal capacity with strategic foresight. STRATA is currently engaging with experts from Vilnius University, the Office of the Government, the OECD Observatory of Public Sector Innovation, the European Commission Joint Research Centre, national and international experts and other stakeholder groups.

Source: *OECD peer to peer meeting* and Roadmap for the State Progress Strategy 'Lithuania 2050'

3.4 Embeddedness in policy cycle: Functions of strategic foresight for decision-making

Strategic foresight, which in this context is seen as "a systematic approach to looking beyond current expectations and taking into account a variety of plausible future developments in order to identify implications for policies today" (OECD, 2019b: 2), can increase policymakers' "preparedness for the inevitable surprises" while at the same time "reduce [their] likelihood of being blindsided by events and dilemmas" (Fuerth, 2012: 10). Strategic foresight aims to improve decision-making in practice and strengthen proactive and prospective capacities of governments (OECD, 2019b: 1).

This relationship can build upon the elective affinities that may exist between strategic foresight and policymaking. There is an underlying consonance that contributes to make strategic foresight especially suitable for policymaking purposes: public policies point to desired outcomes, define paths to be trailed along its implementation, and converge to produce impacts in the future. Too often, policymakers are pressed by immediate or short-term priorities and do not have an explicit account of the future horizons of public policies. Similarly, behaviours such as the adhesion to projections based on past records and wishful thinking about the future contribute to biased approaches to futures. On its side, strategic foresight can become a linguistic and methodological bubble that isolates its experts or disconnects its initiatives from public policy timings and priorities.

As a way to bridge gaps and divisions between policymaking and strategic foresight, strategic foresight practitioners can build their case by addressing decision-making needs, opportunities and purposes, defining its goals and formats from the standpoint of strategic foresight users. Applying this user-centric

perspective means highlighting the functions that strategic foresight can accomplish for decision-makers.[5] From here, crafting a comprehensive set of functions can convey not only the future-orientation that strategic foresight endorses, but also point to its potential applications to define and support present-day activities and processes for policymakers (Fuerth, 2012: 13).

This working paper therefore lists a set of eight functions that strategic foresight can play for decision-making. The intention is to help both strategic foresight practitioners and policymakers to identify opportunities for their mutual collaborations and to activate the benefits of strategic foresight for decision-making purposes. For each strategic foresight function, this working paper identifies potential uses for decision-makers and shares concrete examples of cases and tools.

I.   Self-reflexive function: Exploration, unveiling and (self-)reflexivity about the surrounding context.

Strategic foresight can help decision-makers to verbalise unasked questions, debunk implicit biases and make visible the assumptions that sustain their tacit sense of reality. Offering a structured process to conceive and visualise alternative paths to the existing situation, strategic foresight thereupon unveils the taken-for-granted blend of beliefs and unquestioned premises that surrounds decision-making in government (Fuerth, 2012: 15). Besides, strategic foresight helps to detect emerging trends and weak signals, picks up points of orientation for present decisions and improves the awareness about contingencies that are still emerging on the horizon (idem: 10). Against the assumptions about an already given and predetermined future, strategic foresight enables the exploration of desirable futures and hence "highlights the opportunity of shaping our futures" (Havas et al., 2010: 92). Through this function, strategic foresight can bring potential benefits for policymakers:

- Awareness on biases and assumptions regarding the future.

- Articulation of unasked questions about the current ways of designing and applying public policies.

- Detection of emerging trends and weak signs dissolved in the surrounding environment.

- Broadening of the time horizon to include futures contingencies.

- Exploration of alternative futures besides the projection of linear and pre-defined paths.

- Re-assessment and re-alignment of existing policies and, in general, re-framing of the terms and methodologies used to conceive and debate the future (see Box 8).

Box 8. Prospective hindsight: bringing and embedding self-reflexion into strategic foresight

Strategic foresight projects can integrate self-reflexive exercises to provide an increased awareness on implicit biases and potential impacts, and stimulate the resilience of projects and teams in the face of the upcoming challenges and barriers.

The use of prospective hindsight techniques, such as the project *premortem*, can bring self-reflection and its benefits to the context of strategic foresight projects. A *premortem* exercise is conducted before the project starts, asking participants to assume that the project in question has failed and to generate plausible

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[5] Under a systemic perspective, the notion of function distinguishes "the central processes that contribute to the overall system goal of developing, diffusing and utilizing new products and processes" (Bergek, 2019: 200). This notion is based upon the "commonalities" identified across existing and diverse systems approaches and scales, namely at the national or sectoral levels, as contributing to the systems' outcomes (idem: 204). Under this definition, the notion of function does not subscribe to any normative or prescriptive approach to "functionalism", which idealises – in all senses of the expression – continuity, stability, consent and cohesion at the level of the system, equates existence with necessity (or virtue) or associates conformity with positive significations (Afshar, 2021).

reasons for that consequence (Klein, 2007). The exercise ensures that the collective intelligence of all participants is brought to the fore, gathering insights and perspectives beyond those of the project owner or leader.

The exploratory nature of the exercise, timing of its application and inclusiveness towards diverse points of view, help to identify potential problems in advance and act preventively in accordance with that knowledge. This exercise can also promote the adjustment to realistic expectations (either controlling for unsubstantiated hopes or instead mitigating risk aversion by treating risks as manageable features) and the sensitisation of participants to identify and act promptly on early signals of trouble (or opportunity).

II.   Insightful function: Gather information and generate insights to inform policies

Strategic foresight enables the creation of high-quality, robust and reliable outputs to improve its impact on policymaking (Johnston, 2012). Strategic foresight gathers a wide range of insights through the engagement of target groups and diverse stakeholders, the adoption of systematic and structured methodologies for its activities, and the aggregation of diverse sources of knowledge. Strategic foresight supplies policymaking with intelligence and creativity, guides the direction of policymaking efforts, and introduces a longer-range and forward-looking nature to decision-making (see Box 9). For policymakers, this function ensures their access to important advantages:

- Adjust and balance short-term perspectives with long-term vision.

- Identify practical ways to cope with uncertainty and complexity.

- Seize opportunities and explore alternatives – and not only manage risks and minimise deviations from pre-set targets.

- Means to identify emerging signs surrounding new needs, new demands and new possibilities.

- Improvement of current alert systems and their function to detect surprise events and unanticipated consequences.

- Build future preparedness to explore opportunities that will provide present benefits and advantages.

Box 9. Scenarios for the future of public sector in Slovenia

The Slovenian Ministry of Public Administration sought to make sense of and develop actions to respond to the complex and uncertain challenges "associated with the changing nature of work and an ageing population". In collaboration with OPSI on the project *The Future of Public Sector Talent Management in Slovenia*, four alternative future scenarios were co-created. These scenarios addressed specific opportunities and challenges that each possible future could affect Slovene society and, notably, the management of talent in the public sector:

–   **Higher Flyers**: an accelerated, globalised digital world where talent is mobile and delocalised, with economic inequalities permeating societies.

–   **Closer cultivators**: natural hazards disrupt networks of goods, services and persons at the global level and lead society to reassess the importance of well-being, valuing local communities and value chains as well as "human touch" in public services.

–   **Free thinkers**: the use of algorithms and artificial intelligence plays an increasingly important role in decision-making, causing ethical debates to arise and resulting in the valorisation of expertise.

–   **Better neighbours**: the fluxes of persons across borders and the growing integration in the European Union stimulate an increase in regional co-operation and push for more transparency and trust.

From these scenarios, the project team was able to develop potential actionable solutions to answer to those contingencies. This scenario building approach was intended to be useful to test assumptions and

limits of knowledge about the future and to strengthen the capacity of the Slovenian government to act in a proactive way to cope with those future contingencies. By opening multiple ways forward, this prospective approach enables the Slovene government to not only better understand its environment, but also to contribute to a more future-fit public administration.

III.   Stewarding function: Support the definition and facilitate the implementation of policies

Strategic foresight can inform the design of innovation-oriented and forward-looking actions and strategies in public policy, namely using the insights and direction generated to advance policymaking or re-frame our perceptions about the future e.g., to catalyse socio-technical transitional processes in countries (see Box 10). Additionally, strategic foresight can support decision-makers in taking decisions with a strategic scope, providing them with the means to produce decisions with more appropriate, more flexible and more robust understandings of the future (Coates, 1985). Through the stewarding function, strategic foresight can facilitate the implementation of public policies by:

- Providing new knowledge and direction to re-assess and re-align current policies.

- Supporting decision-making with robust, flexible and appropriate understanding of the future.

- Supporting policymakers in initiating action with the provision of justification and direction from desirable futures.

- Easing the implementation of policies in virtue of strategic foresight's capacity to mobilise public engagement and gain expert-backed support to produce insights.

- Stewarding the application of policies through the provision of a systemic understanding of their consequences, anticipating enabling factors or potential blockages, and steering or updating policy orientations in accordance with a rapidly changing environment in order to focus on desired purposes and outcomes.

Box 10. Transition design in Latin America

The purpose behind the transition design approach is to address complex, "wicked" problems (such as technological transformation, inequalities and social cohesion, or climate change) through "collective stakeholder intelligence" and collaboration, and by co-creating shared visions towards sustainable and desirable futures (Irwin, 2018). The approach supports the design and application of consequential transitions, i.e. intentionally designed to produce changes while reshaping existing systems, through exercises to re-frame the present and envision the future. Additionally, it seeks to design interventions that address the multiple levels and scales at which complex challenges unfold uninterruptedly.

"Transition design" encourages stakeholders to adopt mind-sets and postures that challenge "the dominant socio-technical, economic and political paradigms" (idem: 983) by counterbalancing periods of activity and intervention with "intervals of observation and reflection in order to understand how the system has responded to the perturbation" (idem: 983). The whole approach is based on a comprehensive mapping of systemic interdependencies and connexions and the inclusive engagement and intense collaboration among stakeholders (e.g. co-creation of desirable futures).

Still in its nascent state, the approach has already been tested in diverse contexts. A group of practitioners and interlocutors have led interventions adopting this approach in three Latin American contexts: Guadalajara, Mexico; Monterrey, Mexico; and Maldonado, Uruguay (Juri et al 2021). These case studies demonstrate how different methods can be used for this "practice-oriented perspective aimed at catalysing societal transitional processes towards sustainable futures" (idem: 1).

Along with the challenges and opportunities that the concept of "pluriversal futures" entails (idem: 6), the case studies provided useful insights for the application of the approach:

— First, the importance of meeting the participants and stakeholders within their own contexts, which

legitimises and encourages them to express their knowledge or concerns under their own terms.

— Second, acknowledge that if the heterogeneity of participants is inadequate there is a risk of creating "echo chambers". However, the inclusion of "divergent voices" presents challenges and raises questions about the management of diversity and power dynamics (idem: 5).

— Third, the need for stated values in order to adapt transition design "to fit local circumstances". The approach should recognise the uniqueness of values that are specific to each local circumstance and contexts.

— Fourth, more than just producing knowledge out of its interventions, transition design is oriented towards "collaboration for action", building purposeful practices, and ensuring learnings exchange and "cross-pollination" among participants (idem: 6).

IV.   Participatory function: Stimulate participation and collaboration in policymaking

The modalities of co-creation and participation that strategic foresight can use for policymaking bring potential benefits given their ability to mobilise and co-ordinate with stakeholders across diverse sectors (Eriksson and Weber, 2008). Through foresight exercises, in the Spanish Basque Country, public deliberations were proposed to support the design of public policies (see Box 11). For those benefits to be achieved, strategic foresight activities must assume, from the onset, a participatory and collaborative approach to complex challenges, questioning the exclusive or predominance of a narrow government agenda in policymaking (Kononenko, 2021). Endorsing openness, transparency and accountability, this function of strategic foresight provides governments with opportunities to improve decision-making by:

- Promoting cross-sectoral and cross-organisational dialogues to deal with societal challenges.

- Creating collaborative and participatory processes to define plausible and desirable futures.

- Adopting a user-centric perspective instead of a sole government approach to challenges.

- Connecting diverse stakeholders, bringing multiple perspectives, and increasing mutual trust on shared but also disputed interests about possible futures.

- Promoting the conditions for joint action based on co-creation and on sustainable, significant and broadly-supported policy goals.

- Improving the legitimacy of decision-makers by turning transparency and accountability an integral part of decision-making.

Box 11. Building the future in Gipuzkoa (Spain)

The Provincial Council of Gipuzkoa developed a programme entitled *Building the Future* (*Etorkizuna Eraikiz*) to promote and improve the open and collaborative governance in the region. The programme incorporates public deliberation for the design of public policies, ensuring the inclusiveness and effectiveness of this participation. This resulted in active participation and empowerment of citizens with the organisation of foresight exercises based on co-creation and co-design, and with an experimental approach to projects.

The programme is based on two types of initiatives. The first initiative, *Gipuzkoa Taldean,* seeks to identify the demographic, economic and social challenges that the territory could face in the future. The second initiative, *GipuzkoaLAB*, is a prospective exercise to create pilot projects that offer answers to current needs and also provides a shared understanding about the economic, social and political future of the territory. So far, this initiative has engaged more than 25.000 citizens at different levels, as well as more than 380 companies, and the four universities situated in the Basque Country. The projects themselves have been designed and developed by more than 3.000 people, including public servants and managers.

V.   Empathic function: Nurture openness and shared vision among stakeholders

The empathic function of strategic foresight can improve policymaking at different levels: overcome tunnel-vision and compartmentalised concerns; stimulate the sense of co-ownership and the commitment to the decisions and results obtained; and avoid dead-locks and lock-ins in entrenched, partial or unilateral attitudes (Hekkert et al., 2007: 420). Strategic foresight requires inclusive discussions and open debates among stakeholders in order to map and understand differences and similarities in their points of view, to bring explicit awareness on possible gains and losses, and to enable the creation of common ground or coalitions. In Germany, principles of civic engagement were used to address the adoption and impact of technologies in rural areas (see Box 12). In practical terms, this function encourages the creation or strengthening of forums to bring together stakeholders and stimulate mutual empathy. This supports decision-makers at the following levels:

- Provides awareness and permits structured discussions about the asymmetries and disagreements between stakeholders through inclusive and constructive methodologies.

- Provides salience to points of view and stakeholders that can potentially be ignored or marginalised.

- Promotes the sense of co-ownership and reciprocal commitment among stakeholders regarding policy decisions.

- Deploys mediated and networked modes to approach the future and act in the present.

- Generates a shared understanding of the tensions and similarities among stakeholders and, thereby, sustains broader alignments and consensual agreements regarding common futures.

Box 12. Foresight in the rural areas in Germany

The *Social Foresight Lab* embodies an innovative participatory approach to address complex challenges, such as demographic change, that impact rural areas in Germany and considers the adoption of technology to cope with these challenges. Seen as a collaborative space for stakeholders to meet and interact, this initiative gathers knowledge on societal challenges, identifying needs from the point of view of these societal actors (Schrot and Schraudner, 2019: 156). As a consequence of the engagement of multiple stakeholders in its early stages and the experimentation of potential solutions in real-life settings with citizens, this initiative helps to design strategies that adopt and adapt technological innovations for the purpose of regional development.

The Social Foresight Lab allowed citizens to experiment with future solutions e.g., introducing prototypes of potential social and technological developments to their local contexts with respect to mobility, working and living. The on-site research and the citizen-centred experimentation allowed for the identification of needs to be harnessed and for the identification of challenges that the future may bring to these rural areas (idem: 158). The experimentation with technological innovations involving end-users, the creation and expansion of innovation networks at the local level, and the promotion of mutual learnings were also identified as major contributions coming out of this initiative.

VI. Experimental function: Stress-test, simulate and experiment policies

Strategic foresight offers decision-makers ways to stress-test their options or plans regarding the future, simulate possible paths and outcomes of present-day decisions, and promote resilience and robustness of policies (Fuerth, 2012: 12; Fernandes and Heflich, 2021). The creation of safe spaces to simulate the consequences of futures scenarios or policies allows policymakers to gather new insights and signals, explore possible responses and reactions, refrain from risk aversion and gain confidence about their visions and proposals for the future.

At the same time, the experiential dimension of strategic foresight, in itself, creates an opportunity to engage policymakers and stakeholders and familiarise them with future possibilities and scenarios that

may look abstract or obscure (see Box 13). This experiential contact with futures helps participants to connect with possible realities and events, engaging them in living environments and exposing them to multi-sensory experiences (Candy and Kornet, 2019). Therefore, strategic foresight enables decision-makers to:

- Stress-test alternative options of public policies against different scenarios or trends.

- Experiment with decision-making and its possible consequences under controlled circumstances, adopting fast, agile procedures and keeping activities at relatively low costs and risks.

- Simulate paths and outcomes arising from decisions in the present, and derive learnings to adapt actions in good time.

- Provide experiential contact with futures, ensuring that stakeholders learn about strategic foresight from practice. Receive suggestions and feedback from the experiments to provide stimuli and increase the visibility of potential threats and benefits of structural and often invisible changes.

Box 13. Futures literacy labs

Futures literacy labs are designed to enable citizens to express their expectations about the future, articulating the principles that guide their assumptions on a given topic, and to create alternative framings, ensuring that futures can be re-imagined and re-perceived. In sum, futures literacy labs "expose why and how people use-the-future" (Miller, 2017: 97). This approach goes through a three phase journey:

– **Revealing**: The first phase of the approach consists in revealing expectations and hopes and the implicit assumptions about the future of a specific area or topic.

– **Reframing**: The second phase asks participants "to let go of extrapolation of the past into the future" (idem: 104) and encourages them to conceive imaginative futures, serving as a "sandbox" to imagine new futures through a structured process.

– **Rethinking**: The third and final phase invites participants to contrast and compare the results from the previous phases with the goal of providing insights into "both why and what the future can be used for" (idem: 105).

Grasping the similarities and differences of their distinct ways to create and deal with the future, participants "begin to see the box for their imagination created by deterministic uses of the future, and start to imagine what it would be like to be able to invent different anticipatory assumptions, including ones where the reasons for 'using-the-future' might be different" (idem: 105). With this, participants are able to see the signs of potential futures already existing in the present (Raleigh et al., 2018: 5).

VII. *Up-skilling function: Promote the acquisition of new skills among decision-makers*

Strategic foresight can generate new and improved skills among decision-makers. Through its reiterated use, strategic foresight shields decision-makers from common constrains in their daily contexts i.e., counterbalances the exposure to urgencies and short-time pressures, prevents tunnel-vision in their strategies, and helps them to pre-emptively identify and act proactively on changes (Boston, 2014: 15). Furthermore, strategic foresight expands the motivations of policymakers to include (new) motives, such as sustainability or intergenerational solidarity, enhances their dexterity and flexibility to conceive and handle multiple futures, and provides incentives for them to "think outside the box" (Havas et al., 2010: 92). In Canada, strategic foresight upskilling is a core initiative within the governmental unit Policy Horizons, providing public servants introductory modules on foresight practice as well as advanced modules with innovative approaches to support policy development (see Box 14). Capacity building on innovative approaches is also taking place in Flanders, Belgium, where innovation and technology development have become a driving force for strategic foresight upskilling (see Box 15). Altogether, the upskilling function of strategic foresight offers policymakers access to a set of advantages:

- Promotion of futures literacy and enhancement of foresight culture as a result of access to tools and techniques.
- Acquisition of skills and attitudes that sustain proactive, forward-looking and long-range policymaking.
- Widening of curiosity, sustainability, flexibility and far-ranging considerations in decision-making.

Box 14. Scaling learnings in Canada

Policy Horizons Canada is a unit of the federal Canadian Government that conducts strategic foresight on transversal challenges and emerging trends. Currently, the focus is on three major areas: *economic futures*, s*ocial futures* and g*overnance futures*. The goal is to provide useful information and advice for public sector organisations and servants to prepare in the present for consequences arising out of the future. In addition to the design of the *Horizons Foresight Method* for decision makers to prepare for uncertainty and complexity in specific contexts of policymaking, Policy Horizons Canada has adopted collaborative approaches to build and improve a collective model of their foresight system.

In the domain of upskilling, the unit provides scaffolding and training activities to help public servants and departments to develop their foresight capacity and skills. In June 2017, Canada started a training programme, *Canada Beyond 150,* designed to provide forward-looking skills and achieve positive cultural shifts in the public service. This 10-month programme was designed to introduce new public servants to innovative approaches to policymaking. The initiative convened public servants from all over the country and from distinct government departments to participate in a professional development programme designed to support leadership and skills.

Profiting from the open and permanent access granted by its digital platform, Policy Horizons Canada maintains learning materials available to introduce public servants and managers to strategic foresight. The platform also offers a series of training modules and a set of tutorial videos as learning resources on strategic foresight.

Box 15. Innovation and digital technologies as a driving force for strategic foresight upskilling in Flanders

The Strategic Insights and Analysis Unit is a new team within the Chancellery and Foreign Office of Flanders, in Belgium. It supports the Flemish Prime Minister in evidence informed policymaking for recovery and resilience, and foreign policy.

This unit has been proactive in improving their capacity with existing methodologies such as the Scenario Exploration System (SES) from the European Commission's Joint Research Centre (JRC). Innovation and digital technologies are among the main drivers for their strategic foresight upskilling. Digital scanning and interaction tools have been deemed useful to support their work in activities for scenario development and analysis, to map mental models and for information-gathering. Before developing future scenarios and creating a debate surrounding the scenarios, the unit highlights the importance of information-gathering and data collection. For instance, horizon scanning is a well-known methodology and practice that is recurrently used for their foresight activities. Nevertheless, the unit faced challenges in distinguishing relevant signals from noise. To address this issue, they are focusing their capacity building activities on learning how technologies, such as machine learning and artificial intelligence, can help the horizon scanning and information-gathering processes.

The Chancellery and Foreign Office is responsible for the Government of Flanders' international relations. It co-ordinates the international and European activities of Flanders and therefore takes the lead in Flanders' relations with foreign governments, the European Union and international organisations. With a network of diplomats and international offices (Denmark, Germany, Netherlands, France, United Kingdom, Italy, Austria, South Africa and United Sates of America), the department is building key partnerships that support their capacity building processes in evidence informed policymaking. The unit's mission is to create

and work with these formal and informal networks in and out of government. Through these partnerships they are able to keep up-to-date on country experiences and learn about strategic foresight best practices. To strengthen this collaboration, they are developing a digital version of a scenario exploration tool to enable virtual engagement sessions with a focus on foresight and strategic conversations.

Source: *OECD peer to peer meeting*

VIII.   Expressive function: Drive the imagination and expand horizons for policymaking

Strategic foresight increases the interest of longer-term changes, provides activities and processes to access and tangibilise possible scenarios, and creates alternative images of the future to expand the boundaries of the imagination – such as with doomsday scenarios that appeal for urgent action in the present (see Box 16). Strategic foresight can inspire change through its processes and products, namely offering future-oriented concepts and artefacts, creating a language for articulating the future or making the case for daring and bold decisions (Calof and Smith, 2010: 33). Through these creative experiences, strategic foresight engages in a "transformational process" that changes or expands the "mental maps" of its participants (Bingley, 2014: 20). As such, the expressive function of strategic foresight, which drives policymakers' imagination and sparks the expression of creativity, harbours a series of potential benefits to policymakers:

- Ability to express and communicate expectations and aspirations from multiple stakeholders, which hitherto lay unconscious, implicit or silent.

- New ways to address the public about rare events, unconventional ideas or abstract dynamics, using accessible and appealing ways such as storytelling or dramatisation.

- Mobilise support or create debate around (un)desirable images of the future, by discussing arguments and dealing with emotions.

- Improve the reputation of decision-making through the adoption of prospective, collaborative and reliable methodologies to cope with societal challenges.

- Organise and popularise discussions about the responsibility and sustainability of future scenarios by ensuring higher levels of engagement from participants, by unleashing their imagination and by spurring unprecedented suggestions.

Box 16. Science fiction to explore innovation and anticipate changes in France

In 2019, the French Ministry of Defence, through its *Agence de l'innovation de défense*, created the *Red Team*, a group of science fiction writers and illustrators to conceive and explore scenarios for the future of armed conflicts and to uncover the blind spots and invisible blockages that impair the ability to imagine other situations than those presently existing in handbook examples. The saturation of technologies and the accelerated application of science in the military arena, combined with the inertia of conventional procedures there, mean that established routines are unfit to grasp these innovations and called for the inclusion of unexpected surprises in the debate about the French defence capacity. On the other hand, a *Blue Team*, composed of military personnel, has the mission to keep those scenarios plausible and actionable for military purposes. In late June 2022, the second series of scenarios was shared with the public.

The use of science fiction to bring future-orientation to the military is not new. Both the American and the Canadian armies have used science fiction authors to outline scenarios and explore the possibilities of future challenges (Speyerl, 2019). Currently, in France, science fiction is used as a tool to promote the access to alternative spheres of reality and to anticipate technological, economic or environmental transformations that hold potential for future conflicts in the horizon of 2030 – 2060. Storytelling also communicates with a sensitivity that touches wider audiences, enabling people to resonate with it in ways that go beyond abstract definitions or conceptual models.

However, these initiatives are easily on the verge of becoming purely aspirational exercises, especially since associated actions tend to take a long time to occur. The use of fiction in foresight also has the risk that these scenarios can be perceived as predictions, inducing wrong prioritisations and unreasonable expectations. According to Eveleth (2019), this idea that science fiction may be predictive is simply a myth – and "toxic".

While these functions are being presented separately, the purposes of policymakers and their day-to-day activities can potentially appeal to aggregate distinct functions at the same time. Strategic foresight functions to policymaking are likely to be activated and prioritised in accordance with the existing conditions of feasibility, effectiveness and desirability present in each context (Boston, 2014: 16). At another level, the exploration of specific functions can depend on the purposes endorsed by policymakers and the policy goals subscribed at each time.

Ultimately, the potential impacts of all these strategic foresight functions on decision-makers entail changing the general "aspects of the decision context and choice architecture" in governments (Boston, 2014: 15). For this reason, strategic foresight has the chance to become a game-changer thanks to the interplay and combined effects from these eight functions, which all together convey the potential re-structuring of policymaking (Da Costa, 2008; Calof and Smith, 2010). Under these conditions, strategic foresight exercises would become the "collective design of a theory of change" (Bingley, 2014: 20).

3.5 Feedback and learning loops

Strategic foresight comprises an iterative process to reassess, revalidate, and reframe insights, scenarios and strategies. Reasons for creating learning loops during strategic foresight interventions are diverse, although there is a major interest in contributing to the self-questioning, responsiveness, and continuous improvement of such initiatives (Visnawath et al, 2019; Visser and Van der Togt 2016). As such, significant benefits arise out of the purpose and need to build and refine plausible scenarios that integrate stakeholder's experiences or challenge their assumptions in order to provide robust and useful support for government initiatives. Plausibility, in this sense, entails this exploration of stakeholders' feedback to improve and stress-test the scenarios, and is "expected to be the result of social interaction processes and deliberations between actors" (Scheele, 2020: 3). Feedback and learning loops help foresight users to explore "the consequences of alternative future developments and in testing policies and strategies" (Scheele, 2020: 3). Furthermore, feedback and learning loops provide opportunities to achieve a common ground among distinct stakeholders on a specific topic and ensure that an inclusive vision of the future is developed and consolidated during the process. In sum, feedback and learning loops ensure the responsiveness of strategic foresight processes and practices in relation to changes in the surrounding environment, consequences and tensions arising in the implementation context, and the multiple (and at times diverging) needs and actions of its users (and stakeholders).

In his seminal book *The Art of the Long View,* Peter Schwartz (1991) describes and provides suggestions on ways to "hunt and gather" information that is essential for building scenarios and incorporating a diversity of world-views. He poses the question: "Why do scenarios work?''. According to Schwartz, one of the reasons is "because people recognize the truth in a description of future events. The story resonates in some ways with what they already know, and then leads them from that resonance to reperceive the world" (Schwartz, 1991: 60). This is an example of the potential and responsibility that foresight producers and users have in ensuring iterations throughout the whole scenario-building process. Such iterations enable them to identify "aha-moments", reveal ingrained assumptions and mental models, and ensure that the future scenarios are plausible and as inclusive and democratic as possible. Examples from Lithuania and Spain in their large-scale foresight projects, namely Lithuania 2050 and Spain 2050, demonstrate the importance that these countries have given to thorough iterations with citizen and expert consultations. Such consultations are considered crucial approaches for inclusivity and opportunities to deliver rigorous and integral findings to support either state development guidelines or to improve the understanding of social, economic and environmental challenges (see Boxes 17 and 18).

As part of a social process (Ramírez and Wilkinson, 2016; Rowland and Spaniol, 2017), strategic foresight is a sense-making and co-producing intervention with steps and outputs that require continuous reassessments and refinements. For this process to be achieved, the Flemish Strategic Insights and Analysis Unit uses its international networks and collaborations with external experts and governments to take stock of best practices and strengthen learning loops in policymaking (see Box 19). Within these iterative activities, strategic foresight interventions can provide options to work with system maps and storytelling as means to refine and make sense of a complex logic of events in order to aim for effective actions and long-term transformations.

Box 17. Learning loops in the Government Strategic Analysis Centre (Lithuania)

The Government Strategic Analysis Centre (STRATA) ensures iterations through every step of its strategic foresight activities. For instance, in the project Lithuania 2050 (see Figure 3) civic and stakeholder engagement was present from the outset. The project included feedback and learning loops with citizens' assembly, open discussions with society for shared visions, public consultations and expert surveys, and revision of strategic drafts with Parliament.

Below is the methodological framework applied by the Lithuania 2050 project. Through each stage it is possible to identify feedbacks and learning loops to improve and refine the process, namely desk research, sense-making workshops, citizen consultations, citizens' assembly, and public consultations prior to the development of a national strategy draft and action plans. Each strategy draft document, developed at the end of the scenario process, is discussed with the Parliament. From this document, action plans are subsequently put in place and STRATA presents their interim results from Lithuania 2050 to the State Progress Council, placed within the Special Advisory Commission to the Prime Minister. This council meets every quarter and recently STRATA presented to the council an interim report on the scenario workshops.

Figure 3. Methodological framework for the Lithuania 2050 project

Source: *STRATA and OECD peer to peer meeting*

Box 18. Learning loops in the National Foresight and Strategy Office (Spain)

The diverse projects undertaken by the Spanish National Foresight and Strategy Office ensure the inclusion of inputs from experts, academics, private-public institutions, and citizens. For example, the report "Spain 2050" took over a year to be iteratively prepared with stakeholders, including a citizen

consultation process and with more than forty workshops. These iterative processes and learning loops guaranteed the integrity and rigor of the work for government and society.

A perceived key success of "Spain 2050" was its ability to build awareness among political actors. The Presidency sent a hard copy of the report to more than 300 high-ranking officials of the national, autonomous and local governments of the country in order to incentivise the incorporation of the findings and insights into their day-to-day work and strategic planning. As an example, the current legislative agenda in Spain has incorporated similar approaches to the ones outlined in the report "Spain 2050". The Office attributes this outcome to their successful iterative process of co-creation with all the cabinet offices and experts.

Among other activities that promote the inclusion of broader perspectives through cycles of policymaking, the Office has been working on a project called "Dialogues of the Future". This initiative aims to be co-created through round tables and citizen participation with the 17 Spanish autonomous regions.

Source: *OECD peer to peer meeting*

Box 19. Learning loops in the Strategic Insights and Analysis Unit (Flanders, Belgium)

Networked with colleagues and experts around the world, the Flemish Strategic Insights and Analysis Unit strongly believes in organisational learning loops to conduct strategic foresight activities. The unit recognises the need to take strategic foresight out of a narrow circle and engage more external experts and stakeholders in the effort to strengthen the focus on effective long-term transformations. Furthermore, the Strategic Insights and Analysis Unit believes that a collaboration with other governments, including knowledge transfer of strategic foresight insights and evidence-based anticipatory policymaking practices, is an encouraging prospect to strengthen learning loops in policymaking.

The strategic foresight methods used by the Unit include more than just looking at the long-term. By bringing together individuals with diverse backgrounds, foresight processes may facilitate trans-disciplinary practice, acquisition and diffusion of knowledge, consensus building, extended peer review and development of strategic alternatives. For example, scenarios can act as heuristic tools for making tacit ideas about the future explicit. Their value as an aid to policymaking lies in their ability to assimilate the mental models, including biases, values and beliefs of individuals into commonly held narratives that can help to reorient collective action. Learning can also be described from the perspective of the organisation as a whole. Hence, the Strategic Insights and Analysis Unit can act as an organisational foresight catalyst enabling more agile learning in times of uncertainty and crisis.

Source: *OECD peer to peer meeting*

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4. Fine-tuning: Strategic foresight acceptance and use in government

The proliferation of strategic foresight studies and activities around the globe seems to suggest its increasing acceptance and relevance for public policy (OECD, 2021b). Nevertheless, it is easily observable that this greater foresight dissemination does not guarantee that its insights and resources are going to be used by policymakers – or that impactful uses in decision-making are appearing at all times (Boston, 2014: 18). Governments are not lacking "useful foresight" as much as they lack "the use of foresight" (OECD, 2021d: 15). Here, again, emerges the "impact gap" that separates theoretical constructs, policy intentions and latent capacities from their actual adoption, operationalisation and implementation into policymaking (Tõnurist and Hanson, 2020: 111).

This section covers the most salient barriers and enablers of strategic foresight initiatives and practices from around the globe that relevant research has mapped and analysed to date. First, this section presents a synoptic view of the barriers, resistances and shortcomings regarding each of the five systemic elements of effective strategic foresight in government (demand and mandate; capabilities and skills; institutional arrangements; embeddedness in policy cycle; and feedback and learning loops). Second, the enabling and enhancing factors, which can be optimistically designated as "success factors", are covered for all the

systemic elements. For both barriers and enablers, the working paper identifies possible actions for PlanAPP to consider for the Portuguese context.

Finally, the section proposes an integrated blueprint that can be used to explore the acceptance and use of strategic foresight in government. The goal is to establish an initial and basic awareness on the logics of the acceptance and use of strategic foresight in government, setting a methodological instrument that can orient the examination of the Portuguese context and generate useful insights to inform options and actions for PlanAPP's journey. In doing so, this blueprint can be applied and tested in Portugal in order to determine gradual adjustments and improvements required to embrace the specificity of its public sector.

4.1. Barriers and shortcomings

Strategic foresight is confronted with barriers and shortcomings that permeate its systemic elements (see Table 4). Barriers are not universal across countries as strategic foresight limitations are the result of the interaction between context-specific "demand" and "supply" (SOIF, 2021). From an extensive compilation of studies, this working paper identifies the most notorious barriers and shortcomings from the systemic elements for strategic foresight in government:

- In the **demand and mandate** element, the combination of deep-entrenched characteristics of policymaking culture, such as short-termism or risk aversion, creates an adverse environment for strategic foresight. This cultural substrate in policymaking also contributes to the distance resulting from the "cultural disconnections between established policy communities and foresight experts" (Dreyer and Stang, 2013: 25). In the case of the U.S., the absence of a central strategic foresight office has contributed to a cultural disconnection between policy and foresight. A "whole of government mechanism for strategic foresight" in the U.S. could bring a holistic "attention to the future" and shift the demand from short-term advantages to long-term needs in public administration (Scoblic, 2021). Webb (2019) provides another example surrounding science and technology public policy in this country. According to the author, in the U.S. there is an "abundance of technical experts" and agencies that work independently with strategic foresight. Nevertheless, this supply lacks central co-ordination to create systemic demand and mandate in order to "leverage science and technology to spur economic development" (2019: 2).

- In the element of **capabilities and skills**, strategic foresight has its impact especially limited by the scarcity of specialised skills in public administration and, in general, by the limitations of futures literacy in government. The absence of continuous and accessible training to public officials and senior leaders in government contributes to perpetuate this situation. This concern was expressed by the Strategic Insights and Analysis Unit from Flanders during a peer-to-peer meeting organised by the OECD. The unit encountered difficulty in scouting for employees with "foresight profiles" and with the necessary foresight skills. This has required the unit to provide in-house training and upskilling activities.

- The existence of organisational and sectoral silos and the co-ordination challenges that arise in these circumstances are relevant barriers at the level of **institutional arrangements**. More specifically, the absence of strong ownership and in-house capacity to lead and execute strategic foresight within government also constitutes an important barrier. Rules and procedures that ignore or red-tape the use of strategic foresight knowledge and activities, the restricted access to resources, or the episodic allocation to one-shot, discontinued projects altogether mitigate its acceptance and adoption. In Germany, the study on the institutionalisation of strategic foresight as a process and method in the German Federal Government (2021) found that administrative bureaucracy can entail barriers and have a negative impact on the usefulness of strategic foresight to effectively support policy development. One of the challenges underlined in the study is related to "silo thinking" which hinders knowledge exchange between different units. The features of silo thinking within bureaucratic institutions pertain to "selective perception", i.e., each administrative

unit is unaware of issues beyond its realm of specialisation and responsibility, and to "negative co-ordination", i.e., isolated decisions are made within units that demonstrate low appreciation to continuous co-operation.

- The lack of timeliness, relevance, acceptability and accessibility of strategic foresight exercises and products to policymaking processes create severe limitations to its **embeddedness into policymaking** (Georghiou and Keenan, 2006; Jacobs, 2002). This situation is aggravated by the absence or limited engagement of stakeholders, starting with decision-makers, which at the same time compromises the legitimacy and effectiveness of strategic foresight activities and outputs. In order to achieve and update energy transition targets in Italy, the Ministry for Ecological Transition acknowledges the relevance of reviewing foresight data and engaging with scenario exercises. However, according to the OECD (2021c), the vision of the National Agenda for Sustainable Development is "unclear to what extent this vision is widely shared and understood across government Ministries and the broader public, or to what extent its development has been informed by a strategic foresight approach to account for future uncertainties" (idem: 22). The isolation of knowledge acquired from strategic foresight initiatives is due to the fact that there is apparent absence of "horizontal foresight work as well as regular foresight practices held between and across ministries" (OECD, 2021c: 22).

- In the **feedback and learning loops** element, the underuse or ineffectiveness of evaluation mechanisms make it difficult to conduct impact assessments of strategic foresight (Amanatidou and Guy, 2008). The absence of feedback channels is a barrier to properly monitor and steer interventions. Strategic foresight practitioners and units that do not have established learning loops are constrained in the use of the available learnings and results to improve the replication of their activities. In the report *Towards a Strategic Foresight System in Ireland*, the OECD (OECD, 2021d) identified "pockets of excellence" in the Irish foresight system such as scenario planning for National Risk Assessment and horizon scanning in the Department of Agriculture, Food, and the Marine (DAFM). However, there have been shortcomings in connecting the policymaking and strategic planning processes with strategic foresight. Arguably, one of the reasons for this impact gap is not having established learning loops which consequently leads to foresight interventions becoming a one-off project and not disseminated to a broader audience for reassessments. As such, foresight activities in Ireland are perceived "to be a 'side of the desk activity' which makes it difficult to translate to challenges and opportunities into strategic plans or actions" (OECD, 2021d: 26).

For all the mapped barriers and shortcomings, Table 2 provides a series of suggestions and offers practical options to answer those hindrances. Barriers and shortcomings require purposeful, creative, adequate and contextualised actions to fine-tune strategic foresight. "Suggested actions" should not be read as solutions or recipes for success, but rather as hints that point to the need to assume a contextualised approach to strategic foresight.

Table 2 Barriers and shortcomings to strategic foresight acceptance and use in government

	Barriers and shortcomings	Suggested actions
Demand and mandate	– **Interest and awareness**: low level of interest and lack of awareness about strategic foresight among policymakers. – **Senior support and sponsorship**: lack of senior support and sponsorship to conduct strategic foresight initiatives. – **Public policy culture**: short-termism and casuistic approaches in daily decision-making, combined with culture of risk aversion and uncertainty avoidance. – **Cultural disconnections**: cultural disconnections and language barriers between policymakers and the strategic foresight community. – **Opacity**: hidden agendas and vested interests that dissuade the adoption of inclusive, collaborative and prospective exercises in government areas. – **Expectations**: unrealistic expectations about strategic foresight. – **Biases against expert approaches**: activities perceived as speculative and primarily academic exercises. – **Status quo**: resistances against strategic foresight approaches and implications that run against established conventions and procedures. – **Proximity dilemma**: limited involvement of policymakers into the strategic foresight processes or, the other way around, a proximity that compromises the autonomy of strategic foresight. – **Reputation**: Strategic foresight products and results are missing acceptability and reputation. – **Mandate**: absence of mandate and authority to promote strategic foresight exercises or disseminate its results.	– Tailor messages and communication initiatives to promote strategic foresight among its target audience. – Search, identify and commit "champions" at the top-level of decision-making. – Stress the potential of strategic foresight to allow for longer-term and forward-looking perspectives that prevents lock-in and tunnel-vision in decision-making. – Promote the contacts and the conversations occurring in events or forums organised to gather together policymakers and strategic foresight practitioners. – Support the creation of intermediaries and facilitators that can bridge both communities, supporting its mutual translation and, ultimately, the creation of shared understandings (or vocabularies). – Highlight the opportunities that lay ahead with the adoption of strategic foresight approaches – and the value brought to policymaking and, at the general level, society. – Keep the balance between involvement and detachment with policymakers that preserves independence while allowing for collaboration to happen. – Invest on the quality of products, since the legitimacy also depends on their accuracy, trustworthiness and usefulness for policymakers. – Promote transparency and accountability on the purposes, goals and values that orient strategic foresight initiatives. – Strategic foresight is not a universal panacea, so keep the promises made regarding strategic foresight at realistic levels, avoiding pitches that generate inflated expectations and potential disappointments.
Capabilities and skills	– **Shortage of expertise**: scarcity of specialised skills in all its forms (institutionalised in units or roles, objectified in tools and reports, embodied in abilities and attitudes). – **Training**: rudimentary or inaccessible training options and channels for strategic foresight. – **Futures literacy**: futures literacy is scant or underdeveloped among public servants and policymakers.	– Hire public servants with specialised knowledge and skills in strategic foresight and related domains. – Tailor and update training courses and contents to be available and accessible for public servants and policymakers. – Organise initiatives especially designed to familiarise policymakers and public managers with future thinking and associated tools, giving them the opportunity to experience and absorb competencies.

	– **Funding and assets**: Mitigated or inexistent funding and assets to support strategic foresight. – **Tools and methods**: absence of open repositories and sustained spread of their use.	– Ensure that the message passes that strategic foresight requires committed and sufficient resources to be allocated – and is not a hobby that can occur in spare time or with budget leftovers.
Institutional arrangements	– **Dis-co-ordination**: strategic foresight is diluted and uncoordinated across public administration. – **Silos**: administrative and sectoral silos prevent the articulation across government areas to deal with complex challenges. – **In-house capacity**: unstable or weak in-house capacity to produce in a timely manner robust contributions to turn strategic foresight tangible for decision-makers. – **Resilience, sustainability and stability**: the high exposure to changes of leadership or personnel and to incidents at the political level undermines the resilience and sustainability of strategic foresight. Stable support should be ensured for the required time scope and resist sudden or constant changes in strategic direction. – **Safe spaces**: restricted support or access to safe spaces that have the autonomy and settings to challenge assumptions and matter-of-factness or to test and incubate strategic foresight activities. – **Sharing of information**: difficulties to share, disseminate and, eventually, mainstream strategic foresight experiences, results and learnings. – **Regulations**: existing legal regulations and administrative procedures inhibit the appropriation and implementation of the results from strategic foresight exercises.	– Promote the creation of strategic foresight dedicated unit(s) with the resources and mandate to champion and leverage foresight activities across government. – Place a unit at the centre of government endowed with the mandate to operate, integrate and co-ordinate initiatives across organisations and sectors. – Offer a permanent point of contact (or focal point) for decision-makers to ask for strategic foresight, granting those teams or units with the capacity and resources to act. – Allow the creation of protected spaces – insulated from immediate needs or pressing deliveries – that can act as test-beds or experimentation labs. – Open the dialogue and/or create meeting points to existing units or teams that, albeit dispersed in government and/or restricted to their specific sectors, already adopt or engage with strategic foresight approaches and activities. – Promote networking and clustering among strategic foresight practitioners. – Prompt the identification and up-tuning of regulations that inhibit the use of strategic foresight or ignore its applications on appropriate occasions. – Provide sustained support to strategic foresight, creating programs that encompass multiple projects and ensure the co-ordination along the time from one initiative to the other.
Embeddedness in policymaking	– **Policy priorities**: disconnection of strategic foresight from policy agendas, which amounts of loss of relevance and applicability. – **High-level engagement**: policymakers stay (or are kept) outside of strategic foresight exercises, which limits the understanding of and engagement in the exercises and impairs the transference of insights to the policymaking processes. – **Timing**: misalignment between the stages of strategic foresight processes and the policy cycle, in particular on moments of important decisions (e.g. elections calendar or creation of transversal strategies). – **Scope**: strategic foresight initiatives assume a scope and a time-frame that is estranged from decision-making pace and regulations.	– Promote the adequate arrangements so agendas can be synchronised and touchpoints emerge between policymaking and strategic foresight projects. – Promote the reiterated encounter and continued dialogue with policymakers to include them in the definition of topical interventions or paths of exploration for strategic foresight. – Ensure that policymakers are involved in the design and co-creation of strategic foresight, deciding upon its selection in accordance with the stage and relevance of the activities in question. – Keeping track of the pressures generated in such events, use policymaking's critical moments to leverage the relevance and visibility of strategic foresight practices and products.

	– **Stakeholders participation**: limited engagement and restricted diversity in the stakeholders profiles involved in strategic foresight, which compromises commitment, legitimacy and robustness. – **Focus on users**: products and practices are not made into formats and styles that are consumable by policymakers.	– Tailor as much as possible the extension and scope of strategic foresight interventions, adjusting its goals and outputs accordingly, to match the needs and deadlines of policy priorities and policymakers needs. – Promote the inclusion, engagement and participation of multiple stakeholders, paying a special attention to actors that may have their voice marginalised or omitted. – Study and adopt formats and channels to address strategic foresight results that match the requirements of clarity, simplicity and relevance of policymakers (e.g. besides the report format, create executive summaries and visual cues to convey the contents).
Feedback and learning loops	– **Isolation**: scattered initiatives and units that isolate foresight practitioners and prevent exchanges of learnings among them. – **Discontinuity of activity**: occasional and discontinued strategic foresight interventions that do not consolidate or transmit learnings in incremental ways. – **Data**: restricted access to data and information to sustain strategic foresight exercises. – **Restricted dissemination across government**: limitations in the disclosure and dissemination of the processes and products of strategic foresight across government or, at least, to all of its potential beneficiaries and users. – **Monitoring and evaluation**: feeble procedures and mechanisms to monitor and evaluate the impacts of strategic foresight. – **Feedback channels**: strategic foresight activities and initiatives miss the opportunity to capture participants' feedback and inputs. – **Public communication**: strategic foresight motivations and results are not shared with wider audiences, keeping the knowledge limited to expert communities and preventing public debates to take place with citizenry.	– Promote peer learning among strategic foresight practitioners within government. – Enable ways to keep track and provide visibility to strategic foresight activities and products across government. – Promote the creation of institutional memory about the interventions and the openness of those repositories of knowledge. – Push for the access and use of relevant data and information to create strategic foresight, including the possibility to contact key informers and use the strategic plans envisioned by public organisations as starting points. – Explore alternatives procedures and methods to assess and account for the impacts of strategic foresight – and make their inclusion in the activities a highly recommended practice of design and execution. – Pay attention to ways to communicate for a wider audience the activities and results of strategic foresight, adopting an adequate and accessible language and insisting on visually appealing features. – Provide and communicate evidence of effectiveness using diverse channels and formats (e.g. storytelling). – Open channels and forums to gather the feedback from stakeholders beyond the circle of policymakers.

Sources: OECD elaboration based upon an extensive collection of research (OECD 2019b, 2021b, 2021d, 2022a, 2022c; SOIF, 2021; Dreyer and Stang, 2013; Georghiou and Keenan, 2006; Jacobs 2002; Amanatidou and Guy, 2008; Tõnurist and Hanson, 2020; Boston, 2014)

4.2 Enablers and enhancers

Experiences and learnings from around the globe, including insights collected during the peer-to-peer meetings with strategic foresight units, provide strong cues about the enablers and enhancers for strategic foresight use and adoption in governments. The enablers and enhancers are grouped in the five systemic elements for strategic foresight use in government:

- Within **demand and mandate**, the following set of enablers and enhancers is particularly salient: *i)* the involvement and buy-in of policymakers who provide leadership support to strategic foresight (Fobe and Brans, 2011); *ii)* the credibility and reputation attributed to the professional profile of strategic foresight (Bütschi and Nentwitch, 2002); and *iii)* the ability of foresight practitioners and units to benefit from the timing of public debates and capture themes and concerns that can act as triggers for interventions. Following protests in 2019, the German Federal Chancellery and the Ministry of Agriculture used that timing to invite representatives to participate in a summit on the fitness-for-future of agriculture. From this initiative, the Commission of Future of Agriculture (Germany) was born. The Commission is responsible for addressing the concerns of associations and organisations in the agriculture sector and gathering social actors and experts to discuss the transformation strategy for sustainable agriculture, balancing economical goals and climate protection. Among its activities, a [scenario process](#) which engaged distinct groups from society, agriculture and politics supported the development of a shared roadmap for 2030 (Warnke et al., 2022: 4). These results were included in the final report containing proposals and lines of action for the transformation process that was delivered, on July 6 2021, to the German Chancellery, together with a collective vision for the future of agriculture.

- Within **capabilities and skills**, strategic foresight can enrich approaches and methodologies available for decision-making, highlighting its unique contribution and specific value in comparison with existing strategy and planning processes in government (Calof and Smith, 2010: 38). The existence, attraction and upgrading of strategic foresight skills as well as initiatives to nurture its practice in multidisciplinary teams, are positive components. Furthermore, quality requirements in terms of robustness, agility and flexibility are also highlighted as enablers. The Center 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 Center predominantly disseminates the toolkit via workshops and courses for public officials called *FutureCraft*. These workshops generate new skills and share methodological resources across government.

- Among **institutional arrangements**, enablers include the existence of clearly stated ownership and responsibility over strategic foresight and the assigned mandate to commission and guide strategic foresight initiatives (Cox et al., 2015). Enablers can also consist in the creation of "institutions of foresight" or "purpose-built organisational niches" (Slaughter, 1999). An important enhancer can be the increasing professionalisation of strategic foresight, meaning "both standardisation of foresight methods and better application of foresight to specific, but not overly narrow, policy problems" (Dreyer and Stang, 2013: 26). Networks and coupling devices that can weave relationships across government (Calof and Smith, 2010: 33) are important for the circulation of knowledge, tools and foresight practitioners (Leitner et al., 2019: 37). Finland has embedded in its institutional architecture a systematic process to define, apply and assess the use of futures approaches for policymaking. During each electoral period, the Government is required to submit to Parliament a *Report on the Future*, discussing long-term challenges and opportunities for the country. Ministries are required to engage in joint foresight activities through representatives and to disseminate foresight information in order to convene experts to prepare ministry-specific future reviews once per electoral term. The *Government Foresight Group* serves as an advisory body during the preparation of this *Report on the Future*. The *Parliamentary Committee for the Future* not only has the power to discuss and approve the *Report on the Future*, but also uses it to highlight the strategic priorities for the next political

cycle. Sitra, which is an independent agency in both financial and political terms, reports to Parliament and provides the Government with insights on innovation priorities. All along the process, the *National Foresight Network*, which is co-ordinated by the Prime Minister's Office and Sitra, connects with stakeholders from the scientific community, private sector and other foresight actors.

- With respect to strategic foresight **embeddedness in the policy cycle** relevant enablers and enhancers appear as: *i)* the responsiveness by policymakers to the provision of relevant, acceptable and accessible outputs (Frau, 2019: 65); *ii)* the user-centricity of strategic foresight activities and outputs, i.e., its ability to answer to the contextual needs of users or beneficiaries; *iii)* the capacity to integrate and co-ordinate with the policy cycle and across the government, exploring occasions to provide timely and usable contributions to policymakers in specific touchpoints (Bütschi and Nentwitch, 2002). As an example of this, the creation of the *Well-being of Future Generations Act*, in Wales, requires public institutions to clarify and reflect on the long-term impact of policy decisions and account for their intergenerational fairness. The *Act* is based on seven legally-binding common purposes that public bodies – from national government to local government – are expected to adopt for the definition of their goals and use to measure the progress of their initiatives. Public bodies must publicly state why their objectives contribute to achieve those goals, publish an annual report showing their progress, and respond to the Future Generations Commissioner, whose role is "to act as a guardian for the interests of future generation in Wales" (Welsh Government, 2015: 12).

- Finally, the creation of **feedback loops** with participants and users of strategic foresight, including tangible and/or intermediate results (Conway, 2001:11), is valuable. This constant interaction with stakeholders and users builds up both the cumulative improvement of the interventions and its legitimacy and visibility to large audiences. The documentation, monitoring and impact-assessment of strategic foresight interventions amounts to a critical enhancer of its societal and political relevance (Amanatidou and Guy, 2008). In 2019, Nesta created the guide *Our futures: by the people, for the people*, exploring the uses of mass involvement and participatory techniques in exploring or shaping potential futures (Nesta, 2019a). For decision-makers in particular, the guide helps to understand the incorporation of these approaches to engage stakeholders and citizens into diagnosing changes and creating shared images of a desired future. These approaches, moving beyond traditional public engagement techniques and expert-based consultations, use stakeholders' and citizens' inputs and feedback to improve decision-making, (re)build trust and accountability, and spread social awareness on the opportunities and challenges of building sustainable futures.

As in the previous section, Table 3 presents the enablers and enhancers for strategic foresight, including a set of suggested actions to consider while deciding upon any contextual intervention.

Table 3. Enablers and enhancers to strategic foresight acceptance and use in government

	Enablers and enhancers	Suggested actions
Demand and mandate	– **Timing**: strategic foresight grasps opportune occasions and emerging discussions in the political arena – but with caution to not be captured by the political rhetoric or polarisation. – **Triggers**: existence of debates or themes in the public sphere that appeal to the engagement with future challenges and approaches. – **Sponsors**: buy-in from top-level decision-makers and, under the right conditions, enforcement of the use of strategic foresight. – **Legitimacy**: stakeholder support and acceptance of strategic foresight as legitimate policymaking feature. – **Value**: sustained defence and wide perception of the specificity of strategic foresight in comparison with other formats of policymaking support – and the comparative advantages of strategic foresight units or teams in relation with alternative, or even competing, sources of advice. – **Senior leaders' engagement**: involvement of policymakers in the design, delivery and assessment of strategic foresight processes and products. – **Reputation**: processes and products, as well as its producers (i.e. strategic foresight practitioners), are credible, existing a positive reputation associated with this professional competence. – **Professionalisation**: professionalisation of foresight activities, associated with the recognition and systematisation of the specificity of the expertise and its community (e.g. creation of credentials, specific and reserved positions, and/or ethical or deontological codes). – **Narrative:** build a narrative that addresses the benefits and requirements for strategic foresight to produce impacts and appeals to the necessary mandate to act, turning the approach relevant and understandable to policymakers.	– Screen public debates and moods to grasp early opportunities to pitch strategic foresight. – Use the perceived needs coming from the public sphere related with future challenges or scenarios as occasions to leverage strategic foresight. – Focus on clearly identified end-users, beneficiaries or "clients" and their needs. – Define a specific strategy to communicate with policymakers and to engage them continuously in defining priorities, objectives and requirements for strategic foresight interventions. – Search for high-level buy-in but also for the inscription of strategic foresight exercises and expertise as visible touchpoints – and mandatory, if adequate – in decision-making processes. – Clarify the specific contribution and added value of strategic foresight in comparison with other approaches and providers of advice to policymaking. – Ensure nonstop alignment of expectations with users and stakeholders regarding the results and impacts of strategic foresight. – Engage with opinion leaders in government affairs to clarify and promote strategic foresight approaches. – Find "champions" among policymakers, who endorse and push forward the use of its approaches and methods. – Promote the recognition and rewarding of strategic foresight as a relevant capability for public administration. – Defend the creation and appreciation of jobs terms of reference and professional certificates for strategic foresight, if that can sustain the robustness and empowerment of present and prospective practitioners. – Develop a storyline that highlights the unique and inimitable contributions of strategic foresight to the portfolio of approaches and methodologies in government.
Capabilities and skills	– **Methods and tools**: right methods and tools are available, accessible and adequate for each specific exercise. – **Expertise**: pools of specialised skills in strategic foresight are available and regenerate across time.	– Share the references or create repositories of methods and tools that are open and accessible to public servants and decision-makers. – Provide guidance and support to select the most appropriate methods and tools, ensuring that methodological combos are tailored for each project. – Define the attraction, retention and reward of strategic foresight practitioners and holders of complementary skills.

- **Futures literacy**: generalised level of significant futures literacy across government, or at least anchored in specific teams or units distributed in government.
- **Training**: structured and available training in strategic foresight approaches and methodologies.
- **Skills mixes**: existence of the appropriate skills mixes available in public administration – and, specifically, in the teams applying strategic foresight.
- **Quality of processes and products**: robustness of contents, usability of formats, and relevance of topic coverage.
- **Translation and mediation abilities**: strategic foresight practitioners have skills and attitudes that highlight their role as mediators or facilitators and capacity to translate distinct idioms (e.g. policy questions to strategic foresight exercises, and vice-versa).
- **Financial support**: there are sufficient, consistent and long-term funding to strategic foresight activities and organisations.

- Plan and deploy series of initiatives to improve the future literacy at distinct levels of maturity, starting with the constant on boarding of new practitioners and users.
- Define and contribute strategic foresight contents and tools to curricula, including in government schools and training programs.
- Define and apply guidelines and criteria that assure the quality of processes and products, not the least in terms of ethical and integrity requirements.
- Promote the adoption of skills and attitudes that can be used to mediate, facilitate and assume an independent position with regard to stakeholders' conflicts and disputes.
- Assume an explicit, transparent and accountable definition of budgetary requirements and other resources allocation needs to strategic foresight.

Institutional arrangements

- **Neat ownership**: well-defined ownership, commissioning and mandate regarding the execution and implementation of strategic foresight in government.
- **Transversal mandate and connectivity**: existence of connections across government organisations and sectors to discuss and act on complex challenges.
- **Transparency and accountability**: openness of policymakers and public sector managers regarding the processes, products and knowledge generated by strategic foresight.
- **Co-creation**: practices of co-operation at the national and international level, eventually connecting with partners from the quadruple helix (citizens and civil society organisations, scientific system, private sector, government).
- **Rewards and incentives**: the reputation and credibility of its products and processes, as well as its practitioners, is rewarded and incentivised in public sector.
- **Protected areas:** spaces and occasions that enable the exploration and experimentation with strategic foresight activities and methods.
- **Sharing platforms and channels**: diffusion of strategic foresight knowledge, tools and practices across government.

- Push for a clear definition of ownership and mandates for practitioners and their units to hold the commissions of strategic foresight in governments.
- Build and sustain units and teams that can deliver relevant and robust strategic foresight exercises – and ensure they are protected against urgent pressures, abusive interferences and disturbing requests to disengage with strategic foresight.
- Provide incentives and rewards to high-quality processes, products and practices, as well as to practitioners with proven record on promoting valuable interventions.
- Nurture the creation and expansion of communities of practice for practitioners to debate, exchange and collaborate around policy issues and tackle common challenges.
- Open safe spaces that can grant policymakers, stakeholders and actors to engage with strategic foresight, contact with its activities and products and experience its potential benefits.
- Develop and support networks to circulate knowledge and promote contact among public servants, policymakers and foresight practitioners.
- Promote an ecosystem mapping of the strategic foresight capabilities in government (and beyond its institutional boundaries) and define guidelines for mutually beneficial relationships among those actors.
- Provide a co-ordinating and/or stewarding role in the ecosystem to a authorised and empowered centre-of-government unit.

	– **Distributed and synergetic management**: strong co-operation and exchanges – as opposed to negative competition and dis-co-ordination – among units or teams that apply strategic foresight. – **Scalability and reliable partners**: the strategic foresight ecosystem has reliable partners in and outside of the government (universities and R&D units, civil society, private sector) to create partnerships and scale the capacity.	– Promote and incentivise spaces for collaboration and joint activities among strategic foresight partners across government boundaries, ideally engaging the quadruple helix.
Embeddedness in policymaking	– **Sensitivity for policy issues**: pertinence of the topical areas and thematic focuses selected by strategic foresight practitioners and units to answer the priorities and needs of policymakers. – **Synchronisation of agendas**: integration, or at least alignment, with policy cycle and policy agenda. – **Identification of touchpoints**: relevance of touchpoints that co-ordinate the strategic foresight process with the policy cycle, even if such turning points should be controlled for their possible tensions (e.g. elections). – **High-level tandems**: direct, open and stable connections with high-level decision-makers to exchange information bidirectionally. – **Stakeholder engagement**: involvement of major stakeholders for the co-creation of activities and outcomes. – **Tune-up in cultural frames**: create shared ground and identify common denominators to keep tuning-up the culture and in particular the language of policymakers and strategic foresight practitioners. – **Open government**: transparency, integrity, openness and accountability of the processes and products to its participants and, in general, stakeholders (citizens, to start with).	– Provide outputs that are geared towards the priorities and purposes of the end-users, or beneficiaries, of strategic foresight interventions at the level of policymaking. – Prove responsive to the needs, inputs and questions that came from stakeholders, in particular clarifying the purposes and uses ascribed to the initiatives. – Search and consolidate – with the help of regulation or legislation – explicit occasions to co-ordinate strategic foresight exercises and products with turning points of the policy cycle or agenda. – Support the harmonisation of vocabularies, value-sets and time horizons between experts and policymakers, or at least search for a language understandable or translatable by both sides. – Engage policymakers in the discussion and definition – since the pre-design phase – of the areas, purposes, focus and timings of strategic foresight activities. – Ensure clarity and ongoing communication about the project management, so policymakers (or beneficiaries) can keep track of its progresses (and obstacles). – Assure that relevant stakeholders are engaged throughout the strategic foresight processes, including its evaluation and iteration. – Ensure tlexibility and openness to deal with multiple stakeholders and their attitudes and behaviours, since those can change all along the process. – Assure that all the stakeholders involved in the process have access to accessible outputs on the results of the exercise, even if they are not the direct users of the final products.
Feedback and learning loops	– **Iterative interventions**: promote an iterative logic to deploy and manage interventions, ensuring that lessons are learned, assimilated and tested again in the next iteration.	– Adopt methodologies that support learning loops from intervention to intervention, gathering inputs and reactions to move forward and improve the initiatives. – Establish programmes that enable strategic foresight interventions to avoid being one-off projects.

- **Wide and tailored communication**: communication strategy to promote the involvement, disseminate results and ask the feedback from diverse participants and wide audiences.
- **Monitoring instruments**: mechanisms to document and monitor the development of interventions and, after its delivery and implementation, to gather users' and participants' feedback.
- **Impact assessment**: specific attention to the assessment or measurement of impacts from strategic foresight activities and outcomes.
- **Fine-tune expectations and resilient partnerships**: strategic foresight can take time to unfold and to create impact, so is necessary to keep expectations realistic and engagement active (e.g. through permanent spaces for encounters and share intermediate results with partners).
- **Knowledge management**: knowledge originated from strategic foresight interventions and outputs is recorded, curated and displayed for the whole community.

- Design and format messages to address specific audiences and ensure inclusiveness.
- Openness, transparency and accountability to the public, in particular participants and stakeholders, regarding the processes and the products of strategic foresight.
- Select and adopt from the onset mechanisms to document and monitor the progress of strategic foresight interventions.
- Gather evidence and learnings from strategic foresight interventions across governments and stimulate the exchange of data and information.
- Provide tangible evidence of progress throughout the project and ask for feedback at intermediate stages in order to keep stakeholders engaged and prove valuable.

Sources: OECD elaboration based upon an extensive collection of research (OECD 2019b, 2021b, 2021d, 2022a, 2022c; Fobe and Brans, 2011; Bütschi and Nentwitch, 2002; Calof and Smith, 2010; Cox et al., 2015; Rhisiart et al., 2016; Slaughter, 1999. Dreyer and Stang, 2013; Leitner et al., 2019; Frau, 2019; Conway, 2001; Amanatidou and Guy, 2008).

4.3 Strategic foresight acceptance and use in government: a high-level blueprint for governments

The acknowledgement of barriers and enablers is a step to support the design of adaptable, achievable, robust and context-adjusted strategic foresight processes and interventions[6]. Based on the convergencies recognised between the series of identified barriers and enablers, this section presents a high-level outline that integrates the most critical drivers that mediate the potential for governments to adopt strategic foresight, especially for decision-making purposes.

These drivers, organised in accordance with the systemic elements of strategic foresight that the OECD adopts, define a blueprint for the design of achievable, robust and context-adjusted processes and interventions for government purposes. Figure 4 introduces this blueprint as an initial and tentative proposal requiring to be tested and iterated in context.

Figure 4. Blueprint for the acceptance and use of strategic foresight in government

Systemic elements	Drivers
Demand and mandate	**Leadership buy-in**: mandate and sponsorship from policymakers
	Public interest: timing and relevance of public debates about the future and future threats and opportunities
	Reputation and legitimacy: authority and trust conceded to strategic foresight as policy approach and professionalised activity
	Innovation culture: public sector culture and its distance to strategic foresight in terms of thought-, action- and time-frames
Capabilities and skills	**Pool of expertise**: availability and reliability of skills
	Quality of provision: robustness and relevance of strategic foresight processes and products
	Futures literacy
	Resource allocation: support to and sustainability of strategic foresight (e.g. budget)
	Methods and tools: circulation and appropriation of methodological portfolios
Institutional arrangements	**Administrative architecture in government**: supportive regulations and organisational /cross-sectoral co-ordination.
	Safe spaces: support to iterative, agile and experimental processes and activities
	Ownership and institutional encasing: well-defined mission attributions and centre of government units
	Networks and mediation roles
Embeddedness in policy cycle	**Touchpoints**: integration and co-ordination with the policy cycle
	User-centric orientation: responsiveness, relevance, acceptability and accessibility of strategic foresight to policymakers

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[6] For public policies in particular, the important *corpus* of literature about the diffusion, circulation and adoption of novelties could prove valuable to understand the transfer of innovative approaches, methods and techniques. For instance, the research oriented to gather "knowledge about how policies, administrative arrangements, institutions, and ideas in one political setting (past or present) is used in the development of policies, administrative arrangements, institutions, and ideas in another political setting" (Dolowitz and Marsh, 2000: 5).

	Openness and participation: stakeholders' engagement and adhesion to transparency, integrity and accountability principles
Feedback and learning loops	**Knowledge management**: documenting, monitoring and steering interventions based on knowledge
	Monitoring activities and impact assessment
	Feedback channels: participants and stakeholders provide their inputs and reactions
	Targeted communication and active dissemination to relevant audiences

As a checkbox, this blueprint aims to provide strategic foresight practitioners and decision-makers with a sense of the existing gaps and strengths to establish and promote strategic foresight in government. Furthermore, this blueprint can help to define and steer the actions to leverage strategic foresight, offering guidance to select optimal points to act upon and improve strategic foresight adoption and application in government.

Measuring and assessing the impact of strategic foresight is a challenge and initiatives have been providing alternatives to address this gap (see Boxes 20 and 21). As such, this blueprint can also be used in practice as an audit instrument to provide guidance to assess strategic foresight acceptance and use. "If not a blueprint from which to build", it can, at least, provide "a place to start" (Hines, 2003: 20).

Box 20. Impact assessment of strategic foresight

The difficulties of assessing the impact of strategic foresight have been extensively documented and reflected upon (Tõnurist and Hanson, 2020). The impact assessment of strategic foresight has not only been lacking in terms of "evaluations frameworks", but also in terms of the initiatives taken to evaluate its concrete interventions (Bingley 2014: 19). Most assessments rely on "self-evaluation" and its evaluation mechanisms are "largely internal, conducted by members of the project team" (idem: 19). The evidence provided, for instance on the use and usefulness of strategic foresight, is also "largely anecdotal" (idem: 20). This situation increases the pressure to provide evidence on the value and/or the impacts brought by strategic foresight to policymaking through its processes and products (idem: 19). Especially decision-makers are "mindful of accountability" in this respect (Smith, 2012).

Among the ongoing attempts to answer this call, there is an insistence on evaluation of the initial goals of strategic foresight, staying at "the scale and nature of direct, anticipated impacts", which are "mainly associated with the foresight process itself" (Amanatidou and Guy, 2008: 539). The creation of stable and methodical methodologies that adopt a systemic lens to grasp strategic foresight impact enables the expansion of the evaluation exercises to account for the broader environment, the indirect or deferred impacts, and the variations of impact across the diverse system elements or areas. At the level of the strategic foresight system, the creation of a "common impact assessment model" highlights specific areas that deserve special attention in evaluation exercises (idem: 549-551):

– **Actors**: existence of non-fragmented institutions, creation of mutual interests and common goals, generation of interdependence, definition of specific clients.

– **Processes**: managing of expectations, openness and transparency, inclusiveness (in particular, with early public engagement), dissemination and media coverage.

– **Inputs / outputs**: the quality, relevance and timing of the changes in the government related to strategic foresight initiatives and interventions.

– **Objectives**: definition of clear, non-divergent objectives, well-grounded logic of intervention, clear focus of the intervention.

Such an approach, aware of the elements of the strategic foresight system and their mutual relationships, can "facilitate the identification of good practices irrespective of their specific objectives and levels of implementation, as well as facilitating the benchmarking and co-ordination of policies for socio-economic development" (idem: 540). However, there is the need to continue the improvement of the approaches to

assess impacts through tests and iterations in distinct contexts, and to refine evaluation mechanisms to the impact areas, namely through the identification of "area-specific criteria and factors" (idem: 555).

Box 21. Measuring impact

The creation of instruments to measure the impact of strategic foresight offers indications against which to assess the progresses and result of interventions, or to establish benchmarks to demonstrate and position strategic foresight in terms of decision-making impacts (Smith, 2012). Deriving from the initial contributions of Jon Calof, Ron Johnston and Jack Smith, a proposal was made to measure strategic foresight impacts for government sponsors using nine sets of measures, in a total of 54 indicators (Smith, 2012):

– **Key roles and clients impacted**: a total of five measures, corresponding to the roles played or performed by strategic foresight (e.g. "awareness raising") towards a series of "typical clients" (e.g. policy leaders").

– **Foresight benefits**: twelve indicators, mapping the perceived benefits of strategic foresight (e.g. "generating national strategy").

– **Critical success factors**: eight measures, "especially relevant for foresight designers and planners", such as "focus on a clearly identified client" or "nurture direct links to senior policy makers".

– **Meta measures**: comprising six indicators that focus on the "learning process" developed by strategic foresight and its impacts on the "readiness, resilience and preparedness skills" (among others, "training and develop skills").

– **Pre-policy measures**: gathering seven measures that acknowledge that strategic foresight acts as "a key tool for risk assessment and the management of uncertainty".

– **Categories to measure policy support**: aspects such as "stakeholder engagement and characterisation" or "advice for policy champions", in a total of eight measures, cover the alignment with policy cycle at the stages of pre-policy and policy implementation mostly.

– **(Post-)policy implementation**: eight measures, including the "communication channels" or the "media attraction and messaging", to encompass the follow-up of strategic foresight interventions.

This instrument enables the capture of the multidimensionality of strategic foresight impacts and the development of straightforward and concise ways to communicate those impacts. Notwithstanding, the need to search for adaptions of the instruments comes as a necessity, since the policy cycle against which it was designed is highly sensitive to contextual dynamics.

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5. Doing: Strategic foresight as a structured process to cope with policy challenges

This section introduces the adoption and application of strategic foresight as a structured process to translate futures orientations into practices at the level of government. Strategic foresight processes consist in the series of stages or steps of purposeful actions designed and taken that interweaves with portfolios of innovation methods and tools (e.g. Hines and Zindato, 2016). However, this process is not to be seen as rigid and linear: in reality, its concrete activities include iterative loops and intersections between stages.

Defining strategic foresight interventions as structured processes with associated portfolios points to the exploration of its potential for decision-making purposes, "linking policy design literature with research in design and futures" (Kimbel and Vesnic-Alujevic, 2020: 97). The chapter explores strategic foresight interventions in two specific thematic areas – *green & energy transition*, and *equity & social cohesion* – that PlanAPP has identified as priorities for this project. The suggested perspective of strategic foresight as a practical process with methodological portfolios can be used to design and deliver practical interventions in these policy areas, building on top of the experiences and learnings shared in this chapter.

5.1 Strategic foresight as a process with portfolio

This paper sees strategic foresight initiatives as specific, gradual, and articulated contributions to the dynamics and outcomes of its entire system. Having adopted a *systemic lens* to "map the dynamics of the system, explore the ways in which the relationships between system components affect its functioning, and ascertain which interventions can lead to better results" (OECD, 2019a: 145). This processual perspective enables the identification of stages, steps or phases as basic components of the design and implementation of strategic foresight initiatives. More than a unidimensional and linear sequence, these steps define the types of activities and tools that can be applied when designing and deploying a purposeful strategic foresight intervention. The definition of strategic foresight as a (design) process, whose steps are combined with specific methods and strategies, has been explored and sustained in models that provide strategic foresight with a sense of direction, intentionality or purpose to value, and actionability.

Strategic foresight can be defined as an iterative and heuristic process to guide action and craft answers adapted to the challenges or problems at hand, thus engaging in value creation for systemic purposes. This definition explores and builds on the methodology of design approaches. Research on the "dialogue space" between scenario planning and design thinking has been expanding (Chermak and Coons, 2015). Practice settings are already organised to explore "the intersection of design and futures [to] produce artefacts, applications and interactions created to provoke dialogue in an accessible manner" (Kelliher and Byrne, 2015: 36). Process and portfolio are closely interwoven in strategic foresight to generate and apply purposeful and impactful interventions in governments. While not aiming at being exhaustive, this paper revisits three influential models configuring strategic foresight as a process with portfolio to illustrate, by way of their mutual correspondences, the coherence of such definition:

— Steps of the foresight process (Popper, 2008).

— Phases of strategic foresight process (Saritas, 2013).

— Strategic foresight stages for strategy development (Conway 2014).

For Rafael Popper, the major goal for such an approach is to understand "the fundamental attributes of foresight methods and their linkages to the core phases of a foresight process, together with the identification of possible patterns in the selection of methods" (2008: 62). For this author, strategic foresight seen as a systematic process comprises five interconnected and complementary phases: (i) *pre-foresight*, to scope the objectives and activities of the exercise; (ii) *recruitment*, that is the mobilisation and engagement of key players; (iii) *generation of new knowledge* through exploration, analysis and anticipation of possible futures; (iv) *action*, or shaping the future through strategic planning; and, finally, (v) *renewal*, with the use of evaluation to assure learnings (idem: 67).

The whole process entails a "methods mix", with each step being closely tied to methodological approaches that are selected for their relevance to its specific activities and objectives (see Figure 5). This methodological proposal introduces a relative co-ordination between the "fundamental elements and conditions influencing the foresight process" and the selection of specific methods at any point (idem: 64). Method choices are determined by the "needs" arising from the strategic foresight process (idem: 64), and not by the intrinsic qualities of methods, either in terms of their nature, defined along the qualitative and quantitative spectrum, or their capabilities to gather and process evidence, expertise, interaction or creativity (idem: 83).

Figure 5. Strategic foresight process: steps and methodologies
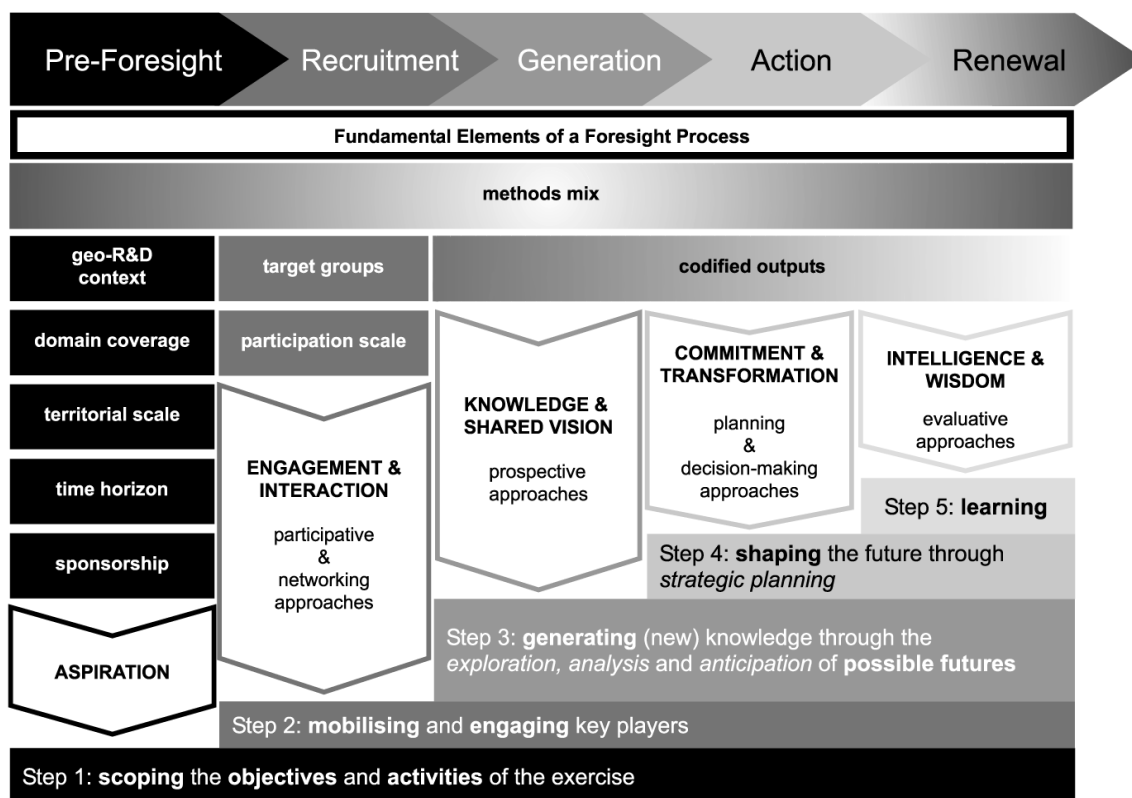
Source: Popper, 2008.

Ozcan Saritas sees the design of strategic foresight activities as "a creative process that will be engaged in designing a future system to fulfil goals and expectations" (2013: 84). Under a systemic approach, this process comprises seven basic phases, all of them covering specific activities and related methods (see Figure 6). The phases are: (i) *intelligence phase*, which comprises scoping, surveying and scanning activities; (ii) *imagination phase*, with creative and diverging activities; (iii) *integration phase*, with ordering and converging activities; (iv) *interpretation phase*, focused on strategy definition; (v) *intervention phase*, oriented to action; (vi) *impact phase*, dedicated to evaluation; and (vii) *interaction phase*, consisting of interactive and participative activities. This final phase is transversal to the whole exercise of strategic foresight (idem: 102). On what pertains to the use of methods, "the selection and integration of methods are done under the guidance of the phases with a close interaction with the context, where the foresight activity takes place and is expected to improve" (idem: 101).

Figure 6. Phases of strategic foresight process: functions, activities, methods

Phases	INTELLIGENCE	IMAGINATION	INTEGRATION	INTERPRETATION	INTERVENTION	IMPACT
Functions	Scoping / surveying	Creative phase	Ordering phase	Strategy phase	Action phase	Evaluation phase
Activities	Survey, scan, evidence	Concept model, visions, scenarios	Priorities, analysis, negotiations	Agendas, strategies	Plans, policies, actions	Review, revision, renewal
Divergent Methods (more open, creative)	Horizon scanning	Scenario stories / images	Backcasting	SWOT analysis	Communication planning	Interview
	Social Network Analysis	Gaming	Delphi	Strategic planning	R&D planning	Policy review
	Knowledge / research map	Visioning	Success scenarios	Roadmapping	Operational research	Impact indicator development
	Literature review	Agent –based modelling	Multi-criteria analysis	Cross-impact analysis	Action planning	Policy impact assessment
Convergent methods (more specific, quantitative)	STI policy analysis	Scenario modelling	Risk assessment	Logic framework	Critical / key technologies	Survey
	Text/data mining & patent analysis	System dynamics	Cost-benefit analysis	Linear programming	Priority lists	Bibliometric analysis
INTERACTION	Panels, workshops, conferences, training courses, dissemination, awareness raising, surveys, interviews					

Source: Saritas, 2013

Finally, the "structured and integrated process for using foresight in strategy development" developed by Maree Conway includes a sequence of "four separate, distinct but interdependent stages each with its own approach and methods" (2014: 5, 12). This approach "helps to identify and separate out the stages that precede decision making about possible strategic options and preferred futures", ascribing to each foresight stage distinct "types of methods" (idem: 15). This approach proposes the development of relative co-ordination between the stages of the strategic foresight process with the selection of methods and strategies mobilised during the exercises (see Figure 7). This portfolio of methods and tools, which results from "the combination of input, analysis, interpretation and prospection methods", has the potential to "enable organisations to craft futures ready strategy" (idem: 15).

Figure 7. Stages of strategic foresight
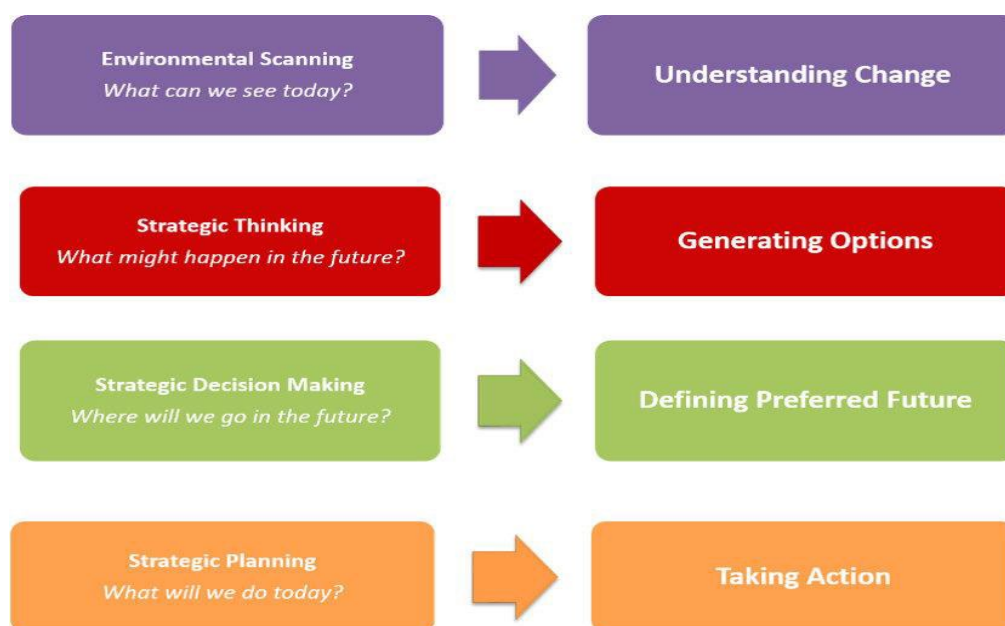
Source: Conway, 2014

These three models thus explore the definition of strategic foresight as a design-process articulated with innovation portfolios – or, in other words, see strategic foresight appealing to a portfolio approach that encompasses strategies and methods covering all the stages, steps or phases that define its value-creation process.

Fundamentally, these approaches are dependent upon the specific challenges and opportunities found in the context of embedment, which calls for the importance of adapting and adjusting the process's stages and methodological portfolios each time a strategic foresight intervention or initiative is designed and implemented. The coupling of design processes and the heuristic tools that accompany the application of strategic foresight subsequently has the potential to not only "pluralize and problematize understandings of issues and uncertainties" (Kimbel and Vesnic-Alujevic 2020: 99), but also to encourage the translation of those activities into pertinent contributions for policymaking purposes. Particularly, as useful and usable inputs to decision-makers (idem: 103).

In the next section, we are using this definition of strategic foresight as a process structured along stages of activities – each of them connected to a selection of methods and tools – to cope with the policy areas that PlanAPP has selected as key project priorities. Dealing with these policy priorities from the standpoint of strategic foresight entails the exploration of both the strategic foresight processes and the portfolios of methods and tools adopted in other latitudes to push the process forward.

5.2 Policy priorities for strategic foresight in Portugal

PlanAPP has identified the g*reen and energy transition* and e*quity and social cohesion* as the two policy priorities to be featured in this working paper. These themes are aligned with social and political priorities of the future of Portugal and Europe (see Box 22), raising a significant need for them to be explored and addressed with methods and approaches that value proactive and prospective processes. The importance of acting in favour of these policy priorities for the future of Portugal gives PlanAPP the mission to explore innovative approaches and forward-thinking methodologies that can make sense of their complex nature. Forward-thinking insights brought by PlanAPP can support the Portuguese Government to reframe

national strategic agendas that benefit the Portuguese society as a whole. The tools and insights that strategic foresight uses to deal with complex and uncertain issues can provide useful complementary or corrective insights to existing approaches to policymaking advice.

Box 22. Portugal's particular perceptions on the Future of Europe

The special editions of the Eurobarometer on the Future of Europe provide the opportunity to explore the differences in public opinion among European Union Member States. Singling out Portuguese public opinion, the last published edition (January 2022) provides insights into the unique aspects of local reality that strategic foresight interventions would need to take into consideration:

— Related to the main challenges for the European Union, 65% of Portuguese respondents point to "social inequalities" (in contrast with 36% at the European level) and 51% to "unemployment" (against 32%). On these topics of social inequalities and unemployment, Portuguese respondents show the highest percentages in comparison to the results of the other European Union members.
— On the other hand, Portuguese respondents showed relatively less concern for "environmental issues and climate change" (20% against 32%) or "migration issues" (17% in contrast to 31%).
— The Portuguese perceptions on the global challenges affecting the European Union further differ in that Portuguese respondents rate "risks related to health" (66%) much higher than European respondents overall (34%).

Source: https://ec.europa.eu/commission/presscorner/detail/en/IP_22_447

5.2.1 Green and Energy Transition

The Intergovernmental Panel on Climate Change (IPCC) warns that "each of the last four decades has been successively warmer than any decade that preceded it since 1850" (IPCC, 2021: 5). What has recurrently been perceived as a long-term issue is increasingly becoming an immediate concern for society and a political duty for urgent present action from governments. As set by the Paris Agreement, 196 parties committed to a long-term goal to limit global warming below 2 degrees Celsius in order to avoid doomsday scenarios of catastrophic events that affect the livelihood of populations. The aim of the agreement is to "strengthen the global response to the threat of climate change" and to set sound policies, action plans and frameworks to reduce CO_2 emissions and limit the rise of global temperature (UNFCCC, 2018).

International organisations and agencies, such as the IPCC and the International Energy Agency (IEA), usually rely on stochastic processes and mathematical models to project the impact of climate change and track the progress of energy transitions around the world. These are essential studies for governments to become aware of the necessary measures for action and adaptation to confront a warming planet and the risks this will entail to human existence. However, uncertainties are difficult to predict and limit the capacity of government future-preparedness for unexpected events. To navigate uncertainty, more qualitative approaches such as strategic foresight are increasingly utilised. These approaches provide methods and tools with which governments can apply and constantly perceive, understand and act upon the future as it emerges in the present (OECD, 2021d).

Due to increasing uncertainties regarding the impact of climate change, the IPCC, the IEA and the World Energy Council (see Box 23) have aligned their quantitative analyses, which set indicators for an energy transition and project the impact of climate change, with qualitative approaches such as future scenarios and narratives. Moreover, the co-creation of future scenarios with stakeholders can support policymakers in their decision-making processes as these have the potential to take stock of collective intelligence and provide governments a systemic overview of societal, organisational and individual needs to effectively implement energy transition. Nevertheless, the application of foresight methodologies needs to be tailored for specific needs. For this, the International Renewable Energy Agency (IRENA) has explored the use of long-term energy scenarios (LTES) surrounding the complex nature of energy systems and the context of energy transitions in order to provide recommendations for policymakers on how to best apply LTES. Also

tailored for climate policymaking, the OECD Strategic Foresight for Successful Net-Zero Transitions Toolkit has been developed "to examine factors that could enhance or limit the ability of countries and organisations to meet their net-zero greenhouse gas emissions ambitions" (OECD 2023: 67). Both the IRENA long-term energy scenarios and the OECD five-step strategic foresight process for climate policymaking provide examples of the use of this technique to guide Governments (see Box 24).

Among the concrete cases that illustrate applications of strategic foresight specifically on this thematic area, this working paper highlights the following set of initiatives:

- **Germany:** The Federal Ministry for Economic Affairs and Climate Action has recurrently included strategic foresight methods and tools in its projects to "assess different possibilities of transforming Germany's energy supply in a way that helps meet the targets set out in the Federal Government's energy strategy, placing a particular focus on the costs that these different possibilities would have" (Energy Forecasts and Scenarios). Some examples are featured in the reports Electricity 2030, which identifies 12 long term trends that should help transition to a low-cost electricity supply system, and The Energy of the Future, which monitors and tracks the attainment of energy transition goals.

- **United Kingdom:** The UK Government Office for Science is currently working on a project to develop possible scenarios and pathways on achieving a net zero society. The project "aims to support the resilience of government net zero policies by understanding how different social and behavioural changes will affect our path to net zero" (UK Government Office for Science 2021).

- **Finland:** Finland has a long tradition of applying strategic foresight for different fields across Government. In 2009, the Prime Minister's Office commissioned a Government Foresight report on *Long-Term Climate and Energy Policy: Towards a Low-Carbon Finland.* Through a participatory approach, the report assessed pathways, targets and measures towards a low carbon Finland. The future scenarios developed in the report supported Finland in setting targets to reduce emissions by at least 80% by 2050. This would be accomplished by improving policies in energy efficiency (e.g., stricter building and efficiency standards), low carbon technologies, renewable energy (e.g., bioenergy), efficient vehicle technology for transport, and in agriculture (e.g., changes in consumption patterns).

- **Joint Research Centre, European Commission:** The Joint Research Centre (JRC), the European Commission's science and knowledge hub, used a strategic foresight exercise to explore "how the green and digital transitions can reinforce each other" (i.e. "twin transitions") until 2050. It analysed the interconnections and interdependencies between digitalisation and green transitions and "how digital technologies can contribute to fighting climate change and environmental degradation" (Muench et al. 2022). The results of the study provide key requirements to manage the green and digital transition for a sustainable and fair future. These requirements are assigned to STEEP categories (Social, Technological, Environmental, Economic and Political) and cover issues of ensuring a just transition, ensuring privacy and ethical use of technology, the implementation of innovation infrastructure, the creation of enabling markets and the implementation of adequate standards.

Box 23. World Energy Scenarios

Since 2016, the World Energy Council (WEC) works to "help its members better navigate the global energy transition" by developing *World Energy Scenarios*. As the green and energy transition is guided and affected by a variety of factors and driving forces, strategic foresight provides contextual knowledge and means to build an inclusive strategic agenda.

In 2019, the WEC's report *The Future of Nuclear: Diverse Harmonies in the Energy Transition* introduced three possible and plausible pathways for Europe's energy transition based on the interplay of four critical

uncertainties: pace of innovation and productivity gains; international governance and geopolitical changes; priority given to climate change and connected issues; and policy tools in action.

The methodology incorporated a four-step process of *scoping* and horizon scanning (desk research and interviews with energy leaders), *testing* (global nuclear workshops with experts), *building* (developing nuclear narratives), and *iterating* (between global narratives and quantification/modelling approaches).

The narratives below are plausible depictions of the future and these storylines were enriched with quantitative modelling e.g., Global Multi-Regional MARKAL model (GMM).

— **Modern Jazz:** "represents a 'digitally disruptive', innovative and globally market-driven world in which gains are increasingly privatised".
— **Unfinished Symphony**: "a world in which more 'intelligent' and sustainable economic growth models emerge as the world aspires to a low-carbon and more renewable energy future".
— **Hard Rock:** "explores the consequences of inward-looking national security priorities that contribute to weaker and unsustainable global economic growth."

Four ways were envisaged and proposed for governments to effectively deal with these scenarios through strategic foresight:

— Clarify strategic choices and identify new and better options for action.
— Stress-test existing strategies and policies for the energy transition in Europe.
— Translate preferred futures or visions to reality and into actionable policies.
— Help businesses anticipate the impact of emerging technologies and redesign their business models.

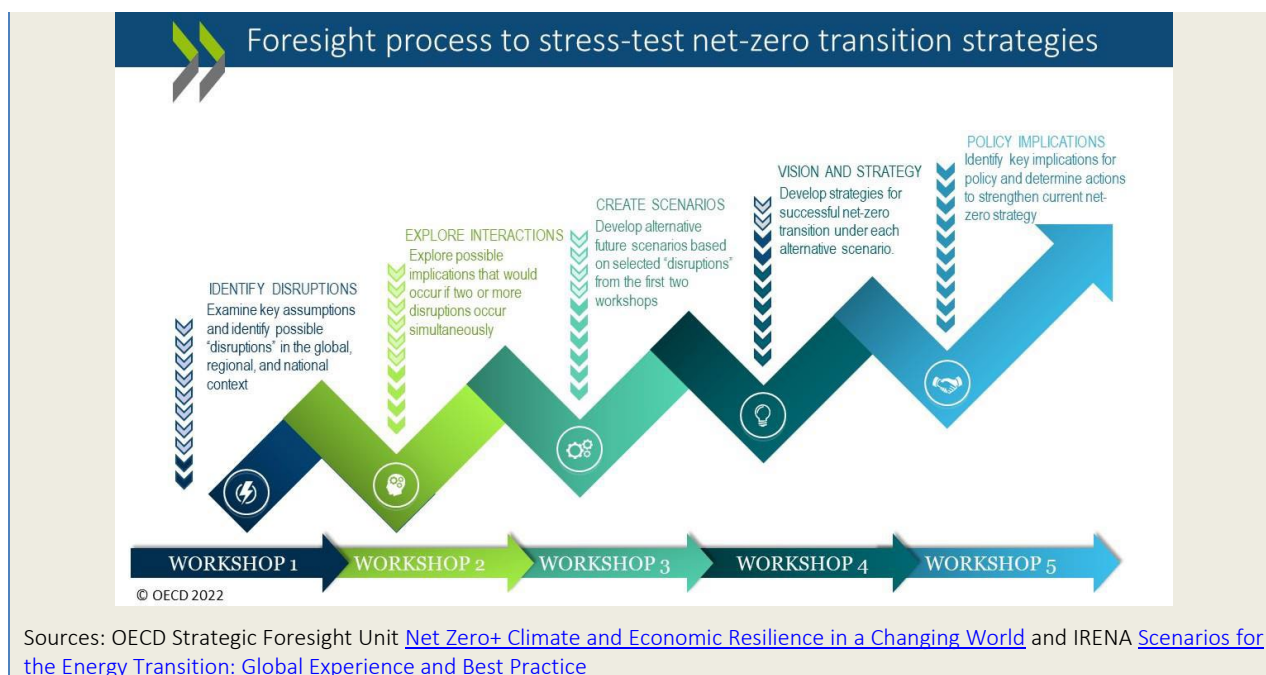Source: World Energy Council: World Energy Scenarios.

Box 24. Improving scenario development to guide government to a clean energy transition

The International Renewable Energy Agency (IRENA) is an intergovernmental organisation that works to support countries on their efforts to ensure a clean energy transition. The report "Scenarios for the Energy Transition: Global Experience and Best Practices" explored the use of long-term energy scenarios (LTES) across different countries. It aims to provide recommendations for policymakers on how to best apply LTES.

This approach was proposed to strengthen scenario development through the establishment of a strong governance structure and expand the boundaries of scenarios, i.e., facilitate better co-ordination across different government institutions, promote participatory processes, and account for innovation in the energy sector. Secondly, findings emphasise the need to clarify the purpose of scenario-building and which type of method best fits the purpose of the intervention e.g., backcasting, exploratory, or building consensus. Additionally, due to the complexity of energy systems and the context of energy transitions, transparency and effective communication will be key factors. Governments undertaking LTES will need to engage openly with important actors and utilise relevant data with which policymakers can use to test the plausibility of the scenarios. Finally, identifying and supporting capacity building approaches is essential for successful insourcing from an internal dedicated team, and for outsourcing, which would require "absorptive capacity within government" (IRENA 2020: 12) to make sense and correctly interpret results that are externally received.

Alternatively, the OECD recommends applying a five-step strategic foresight process to climate policymaking by which countries can strengthen systemic resilience (see Figure 8). The foresight process can be applied at multiple levels of government, crossing diverse mandates, and is aimed to stress-test net zero strategies as these can be "vulnerable to a wide variety of disruptions across sectors" (OECD 2023: 68).

Figure 8. OECD five-step strategic process for successful net-zero transitions

Foresight process to stress-test net-zero transition strategies

IDENTIFY DISRUPTIONS
Examine key assumptions and identify possible "disruptions" in the global, regional, and national context

EXPLORE INTERACTIONS
Explore possible implications that would occur if two or more disruptions occur simultaneously

CREATE SCENARIOS
Develop alternative future scenarios based on selected "disruptions" from the first two workshops

VISION AND STRATEGY
Develop strategies for successful net-zero transition under each alternative scenario.

POLICY IMPLICATIONS
Identify key implications for policy and determine actions to strengthen current net-zero strategy

WORKSHOP 1   WORKSHOP 2   WORKSHOP 3   WORKSHOP 4   WORKSHOP 5

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Sources: OECD Strategic Foresight Unit Net Zero+ Climate and Economic Resilience in a Changing World and IRENA Scenarios for the Energy Transition: Global Experience and Best Practice

5.2.2 Equity and social cohesion

The structure of inequality is based on historical components of wealth between social groups "and on the various systems of economic, social, moral, and political justification that have been invoked to defend or condemn those disparities" (Piketty 2014: 19). As the *The World Inequality Report* (2022) emphasises, the current distribution of wealth and inequality may be considered as a political choice (idem: 11).

Following the COVID-19 pandemic and with Russia's war of aggression against Ukraine affecting food security (FAO 2022), this concentration of wealth is not diminishing, as "the richest 10% of the global population currently takes 52% of global income" (World Inequality Report 2022). Responsible political decisions and coherent policymaking are crucial to ensure fair redistribution of wealth. In the *OECD Main Findings from the 2020 Risks that Matter Survey* (2021e), 62,7% of respondents from OECD countries support government intervention to reduce income differences and provide necessary social benefits. Additionally, the COVID-19 pandemic sheds light on social disparities in the labour market in Europe and in OECD countries with gender divide and injustice with ethnic minorities (OECD, 2022d; Eurofound 2022).

In order to promote equitable arrangements and social cohesion, it is important for governments to acknowledge the need to manage and reframe their strategic agendas by capturing and balancing stakeholders' perspectives and interests (see Ahlquist and Rhisiart 2015: 103). Otherwise, particular perspectives and interests can shape futures and impose priorities that may challenge ethical principles of justice, fairness and equal rights, at the risk of further increasing inequalities or marginalising sections of society (Ramírez and Wilkinson 2016).

Strategic foresight can put in place the appropriate safeguards towards managing vested interests and dominant powers through participatory processes, expert consultations, stakeholder engagements and iterative reassessment of findings (see Box 25). However, processes to engage a variety of stakeholders from diverse backgrounds and hierarchical levels to tackle issues such as equity and social cohesion can encounter numerous barriers and challenges. Each actor has specific worldviews and may have distinct, potentially conflictive definitions of "justice" and "fairness". Furthermore, each stakeholder can be guided by specific strategic agendas, cultural backgrounds and ideologies (Ramírez and Wilkinson 2016).

Through strategic foresight, specifically in participatory interventions, mental models can become more evident (Woolley 2021). Within these social processes, there are mechanisms and activities that can help

assess and amplify collective intelligence (Nesta, 2019b), in order to address complex issues and build common a ground among stakeholders. As highlighted in the third section of this paper, the self-reflective and the participatory functions of strategic foresight are intimately related to the usefulness and purpose of strategic foresight to address societal challenges, such as equity and social cohesion. "Purpose" implying here the need to determine congruency of strategic foresight interventions from beginning to end in order to develop a successful output of the foresight intervention (Gordon 2020).

Strategic foresight has been frequently used to challenge ingrained assumptions related to social transformation and equity (see Boxes 26 and 27). This working paper highlights a selection of examples that show a purpose to identify pathways for a desired future in which the perspectives of actors across the whole system are taken into account:

- **Australia:** Through a strategic foresight and collaborative process, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) developed the Australian National Outlook 2019 to explore "national significant issues, risks and opportunities to identify how Australia's long-term prosperity can be secured" (CSIRO 2019: 1). In the report, Australia acknowledges that although the country has prospered during the last three decades, there is an increasing uncertain future towards the year 2060. This uncertainty is driven by six challenges *(Rise of Asia, Technological change, Climate change and environment, Demographics, Trust, and Social Cohesion)*. Using the evidence surrounding the six challenges, participants of the National Outlook foresight process explored two contrasting scenarios: (i) *Outlook Vision,* in which Australia is proactive and is able to achieve its full potential, and (ii) *Slow Decline,* in which Australia fails to address global and national issues.

  - *Outlook Vision* assumes that inclusive institutions exist to encourage civic participation and improve living standards of the Australian population. This outcome is achieved by continuous improvement and adaptation of the educational system, implementation of sound policies for social inclusion, and by rebuilding trust in institutions.

  - On the other hand, in *Slow Decline,* Australia faces a growing social divide "exacerbated by poorer educational outcomes and a failure to regain trust in public and private institutions" (CSIRO 2019: 23). With the help of these scenarios, the Australian National Outlook aims to generate further discussions and guide planning initiatives to take actions across five key areas: industry, urban, energy, land and culture.

- **South Africa:** The 1991 Mont Fleur Scenarios, in South Africa, is considered one of the most notable scenario planning interventions. Its aim was to address the future of a society transitioning from apartheid to a multiracial and inclusive society with the participation of a diverse group of actors (among others, actors from left and right-wing political parties, activists, academics, business actors, and actors from diverse ethnic and racial backgrounds). The scenario planning intervention questioned "What will South Africa look like in the year 2002?" from a social, economic and political perspective. It focused on stimulating a debate with the diverse group of stakeholders on how to shape the next 10 years of South African society. The Mont Fleur Scenarios noted the importance of two features that connect and build common ground among stakeholders:

  - *Informal networks*: the creation of informal networks that would ultimately impact formal agreements towards equal rights and democracy; and

  - *Common language*: The contribution "to the establishment of a common vocabulary" facilitated conversations that were before unacceptable in the political and social realms. This common language reframed the positioning of some political parties and their interventions to the ongoing constitutional negotiations.

- **Brazil:** A more recent example is Brazil's use of future scenarios in the project Brasil 2035, developed to contribute to achieving equity and social cohesion (IPEA 2017). The *Instituto de Pesquisa Econômica Aplicada* (IPEA) is a Brazilian federal institute with a mission to improve

public policies for national development – namely through economic, social and public management research, diagnosis and analysis of economic structural issues, and mid- to long-term foresight studies. The latter mandate of IPEA on foresight studies has been useful to support the design of forward-looking policies and strategies for a solidary, free and just Brazilian society.

Box 25. A framework to tackle intergenerational fairness in Portugal

Together with the Calouste Gulbenkian Foundation, the School of International Futures (SOIF) has worked on the topic of intergenerational fairness in order to make sure that the future is decolonised from those that tend to dictate and pull the future in particular directions. This project developed a framework to support the assessment of public policies and their impacts on future generations, proposing a five-stage process:

1. **Diagnostic**: identifies and scans for key information about a specific policy and how it can have a negative or unfair impact by analysing short-, medium- and long-term issues.

2. **Impact:** this stage relies on quantitative and qualitative analysis "to explore chains of intended and intended impacts on generations over time".

3. **Scenarios:** here, the assessments are stress-tested and wind-tunnelled against a number of alternative futures in order to ensure that the policies are resilient and robust.

4. **Process:** this stage questions if policies consider issues of intergenerational fairness, if they iteratively include inputs from diverse actors, and "if the process itself created unfairness".

5. **Conclusions:** the final stage aims to communicate the findings and disseminate the analysed information for policymakers.

Source: Calouste Gulbenkian Foundation

Box 26. Using Causal Layered Analysis as a foresight tool for socio-economic equity in Singapore

The Centre for Strategic Futures (CSF) used the methodology Causal Layered Analysis (CLA) to explore the socio-economic aspirations of Singaporeans. Through this exercise, 13 participants from the private and public sectors participated in a half-day workshop to discuss these aspirations in three areas:

1. A society with diverse definitions of success: revealing aspirations related to the importance and strength of family, the aid and capacity to take care of the disadvantaged, in a society where government and people have a more collaborative relationship i.e., based on respect, sincerity and empathy.
2. A Singapore with a more fulfilling pace of life: where participants envisioned a country that is affordable to live in, has a greater sense of togetherness, and the importance of values within society to guide attitudes, actions and aspirations.
3. A Singapore with a strong vibrant economy in order to ensure social well-being: introducing the importance of ageing with dignity, a need for a strong national identity, and a competent and trustworthy government.

Since the methodology aims to explore four levels (litany, systemic, worldview and myth/metaphor), the workshop was divided into two parts to unearth the current situation and reveal future states surrounding socio-economic aspirations (namely, Singapore 2030). With findings from the workshops, the CSF focused on transforming future narratives as a means to shape current public policies for a more egalitarian society.

CSF underlined the usefulness and potential of CLA as a public policy foresight tool. The first benefit it can grant to policymakers is that it unpacks and reframes the present mental models of "human experience" and provides in-depth insights about the future. Especially on the topic of mental models, CLA reveals "patterns of shared experiences" and shed light on the "psychology of the future". The second benefit of CLA is its capacity to systemically challenge "prevailing orthodoxy in public policy". Finally, as a participatory methodology it can be a useful complementary tool for other foresight methodologies such as scenario planning.

Source: Centre for Strategic Futures

Box 27. IMAJINE scenarios to reduce inequality and promote justice

The IMAJINE project (*Integrative Mechanisms for Addressing Spatial Justice and Territorial Inequalities*) applied scenario planning as the primary methodology to look at the future of territorial inequality and spatial justice in Europe. These scenarios were used to stretch perceptions and challenge assumptions of a wide range of stakeholders and policymakers within the European Commission's Directorate-General for Regional and Urban Policy. Setting its time horizon in 2048, the scenario building process questioned "how inequality and injustice might be understood tomorrow".

Through a deductive approach to scenario planning, this project identified two critical uncertainties to define the logic and narratives of the scenarios within a 2x2 matrix, whose axes were defined by the criticial uncertainties "degree of either solidarity or autonomy" and "pursuit of either economic prosperity or well-being". From the intersection of these critical uncertainties, four scenarios were revealed:

1. **Silver Citadel:** depicting a scenario where "EU achieves prosperity and economic equity".

2. **Green Guardian:** a scenario where "the EU consolidates its powers to monitor and regulate resilience and sustainability on behalf of a new world order, focused on surviving climate change and other crises".

3. **Silicon Scaffold:** a scenario in which "the EU consists of digital relationships in a world shaped by transnational corporations".

4. **Patchwork Rainbow**: this fourth scenario illustrates a future in which "the European Union strives to mediate internal conflicts and provide some unity in external relations".

The IMAJINE scenarios intend to provide information on the possible and plausible evolution of territorial inequality and spatial justice in Europe to policymakers and stakeholders. With a purpose to challenge current assumptions around this topic and to help engage stakeholders in an effort to reduce inequality and promote justice, the scenarios also offer room to discuss a variety of implications for national strategies and agendas as well as for policy development. To surface these implications, the project consulted international experts from different sectors (geopolitics, food policy, sustainability, media, culture, gender and sexuality).

Source: Scenarios For The Future Of European Spatial Justice

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6. Areas of opportunity

This working paper illustrates the main substantive underpinnings in the application of foresight approaches from the review of academic research and international case study examples as well as the insights gathered in the activities performed during the project with PlanAPP. In addition, the paper also aims to substantiate and provide methodological support and actionable guidance to further examine and build foresight capacity in government. The ultimate purpose is to bolster governments ability to use and promote strategic foresight to support and improve decision-making processes.

Portugal can provide an illustrative context for the application of the paper's proposals. PlanAPP plays a role in defining high-level legislation and programmes, promoting the systematisation of strategic frameworks and ensuring the coherence of sectoral plans with cross-cutting agendas of the Government (Law-Decree n.21/2021, 15 March 2021). Placed at the Centre of Government, PlanAPP is endowed with a mission, a mandate and the capabilities to promote strategic foresight and its use (Law-Decree n.21/2021, 15 March 2021). This puts PlanAPP in a good position to promote prospective and proactive approaches in public administration and to support foresight practices and interventions across sectors.

This paper suggests possible ways forward for PlanAPP to strengthen and embed strategic foresight in the Portuguese public administration and further improve its role as a competency centre to the whole of government. At this stage, five areas of opportunity stand as especially relevant for PlanAPP:

- **The (collaborative) design of a transversal strategy for foresight**: From its privileged position, PlanAPP can leverage the use of strategic foresight and embed foresight principles and practices in the whole public administration. Strategic foresight would benefit from the design and adoption of a contextualised strategy for Portugal, which considers existing assets and barriers in the Portuguese administration. Designing a strategy for foresight in the Portuguese public administration and an associated roadmap for action can help to provide direction and define the resources required to generate stronger and effective capacities and initiatives. Furthermore, this can create the path to translate this strategy's guidelines and objectives into concrete and practical initiatives, engaging and committing stakeholders and partners to their specific roles.

- **Exploratory scan of the whole strategic foresight system:** Mapping the whole ecosystem for strategic foresight in Portugal could help to identify its actors and their interconnections, as well as to highlight specific barriers and enablers to sustain its improvement. This scan would uncover existing shortcomings as well as unexplored or underused opportunities for the adoption and application of strategic foresight. Furthermore, such intervention could offer the opportunity for inclusive stakeholder engagement, thereby strengthening their mutual interconnections at the system's level. For this purpose, PlanAPP can build on the insights gathered during the first encounter of the Working Group for the Foresight Community (21 October 2022). The meeting gathered public sector organisations to collectively assess the status of foresight in Portugal and to identify, both in specific sectors and transversally, the issues and priorities for collaboration in this area. These insights, together with the data collected through a questionnaire PlanAPP sent to public organisations to gather additional inputs, can support the undertaking of a wider and systematic approach to scan the strategic foresight system in Portugal.

- **Focused interventions that narrow in on specific projects, either domain-specific or challenge-based:** Strategic foresight interventions have to create tangible activities and outcomes that correspond to the needs and expectations of its users in the Government of Portugal (such as policymakers, public sector organisations, and public sector managers and servants). These interventions would narrow in on specific projects, either domain-specific or challenge-based, to create an occasion to apply strategic foresight approaches on the ground as well as actively engage public sector organisations, managers and servants throughout. Tailoring strategic foresight to clearly defined and concrete projects increases the possibility of implementing project results, embedding its learnings and obtaining effective long-term impact. As stated before, PlanAPP has the mission and the mandate required to bring strategic foresight expertise and methodologies to concrete interventions. Given its co-ordinating and transversal role, PlanAPP can promote these interventions to couple strategic foresight' specialised approaches with existing strategic planning processes and procedures, as well as to ensure those approaches' alignment and coherence under high-level public policy directions and priorities.

- **Upgrade of ongoing initiatives to connect existing foresight practitioners in the Government of Portugal through a community of practice**: The creation of a foresight community of practice would allow for the inclusion of existing strongholds of strategic foresight that are currently dispersed across the Portuguese public administration. This initiative can also drive the organic integration of practitioners that are already members of existing networks. Furthermore, the creation of this community may allow for opportunities to explore and establish joint initiatives and shared understandings, thus supporting the co-ordination of the strategic foresight interventions for the Government of

Portugal. During the first collaborative session that OPSI organised with PlanAPP on the 28th of June 2022, PlanAPP announced the intention to create a Working Group for the Foresight Community. On 21 October 2022 this working group met for the first time, gathering 27 public sector organisations, and highlighted the importance and relevance of cross-sectoral collaboration regarding the use of strategic foresight. These positive prospects encourage PlanAPP to establish the Network of Planning and Foresight Services in Public Administration (REPLAN), a network that envisages the co-operation and exchange of resources and knowledge across Government (Law-Decree n.21/2021, Chapter III, 15 March 2021). The first meeting of REPLAN took place on 23 November 2022, enabling the formal launch of the network, the discussion of its objectives and governance architecture, the identification of transversal challenges, and the definition of guidelines to support an Action Plan for 2023. REPLAN gathers representatives from all Government areas. PlanAPP can explore the integration of the Working Group for the Foresight Community in the wider context of REPLAN and the consolidation of an internal team specifically dedicated to foster strategic foresight within this network.

- **Promote international exchanges with relevant partners, benefiting from the contacts already established in this project:** International collaboration is not just important to share learnings, experiences and resources among partners that promote strategic foresight in government, but also because societal challenges (e.g. climate change) often assume a cross-border nature. PlanAPP has already begun to establish such relationships during the series of peer-to-peer meetings, which included units from Belgium, Finland, Germany, Lithuania and Spain, and as a result of its contact with the OECD Government Foresight Community and the European Commission's Competence Centre on Foresight. Those relationships started already to be translated into concrete initiatives of co-operation: PlanAPP is co-ordinating the Portuguese participation in the *The European Well-being Foresight Project: Ensuring Citizens' Well-being under the EU's Open Strategic Autonomy & the New Global Order*, a project initiated by the *Oficina Nacional de Prospectiva y Estratégia* from Spain and including the participation of several EU member states within the framework of the EU-wide foresight network. This specific project is a sign that those international contacts enable the creation of collaborations oriented to practical outcomes and open the path to further explorations of joint endeavours among international partners.

This working paper supports governments in the use of strategic foresight to strengthen decision making and planning activities under uncertainty and enable structured responses to emerging trends and societal transformations. In particular, it opens up paths for PlanAPP to promote strategic foresight in the Government of Portugal, namely by further exploring the above five opportunity areas as starting points for a way forward. Through these five options, which can be combined and conducted in parallel, or through other initiatives inspired by this working paper, PlanAPP has a wide horizon of possibilities to enhance the capacity of the Portuguese Government to cope with complex futures, act in the present and provide concrete benefits to society.

7. References

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